

Tractor Test and Power Museum, The Lester F. Larsen

UNL Larsen Tractor Museum Archives

University of Nebraska - Lincoln

Year 2000

Test 1929: Case IH MX 90C Diesel

SUMMARY OF OECD TEST 1929—NEBRASKA SUMMARY 357

CASE IH MX 90C DIESEL

16 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed (PTO speed-996 rpm)					
75.4 (56.2)	2200	5.17 (19.56)	0.478 (0.291)	14.57 (2.87)	
Maximum Power (2 hours)					
75.5 (56.3)	2100	5.01 (18.98)	0.464 (0.282)	15.06 (2.97)	
VARYING POWER AND FUEL CONSUMPTION					
75.4 (56.2)	2200	5.17 (19.56)	0.478 (0.291)	14.57 (2.87)	Air temperature
65.7 (49.0)	2253	4.85 (18.36)	0.515 (0.313)	13.55 (2.67)	72°F (22°C)
49.8 (37.1)	2280	4.13 (15.65)	0.579 (0.352)	12.03 (2.37)	Relative humidity
33.4 (24.9)	2302	3.41 (12.91)	0.712 (0.433)	9.80 (1.93)	30%
16.9 (12.6)	2319	2.69 (10.17)	1.111 (0.673)	6.29 (1.24)	Barometer
--	2336	1.89 (7.16)	--	--	29.6" Hg (100.1 kPa)

Maximum Torque - 236 lb.-ft. (320 Nm) at 1394 rpm
 Maximum Torque Rise - 31.1%
 Torque rise at 1800 engine rpm - 17%

DRAWBAR PERFORMANCE (Unballasted Front Drive Engaged)

FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Barom. inch Hg (kPa)
Maximum Power 8th (III 1) Gear								
63.3 (47.2)	3815 (16.97)	6.23 (10.02)	2199	2.2	0.567 (0.345)	12.13 (2.39)	172 (78)	57 (14)
75% of Pull at Maximum Power 8th (III 1) Gear								
49.3 (36.8)	2865 (12.74)	6.46 (10.39)	2268	1.7	0.636 (0.387)	10.81 (2.13)	171 (77)	55 (13)
50% of Pull at Maximum Power 8th (III 1) Gear								
33.3 (24.9)	1910 (8.49)	6.54 (10.53)	2293	1.5	0.775 (0.472)	8.87 (1.75)	169 (76)	55 (13)
75% of Pull at Reduced Engine Speed 9th (II 4) Gear								
48.9 (36.5)	2840 (12.64)	6.46 (10.39)	2018	1.5	0.579 (0.352)	11.88 (2.34)	169 (76)	57 (14)
50% of Pull at Reduced Engine Speed 9th (II 4) Gear								
33.1 (24.7)	1895 (8.42)	6.56 (10.55)	2040	1.1	0.705 (0.429)	9.75 (1.92)	171 (77)	57 (14)

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

Dates of Test: March - May, 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.** U056660F **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.** JJE1053539 **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 1.72 (2.76) second 2.06 (3.32) third 2.55 (4.10) fourth 3.16 (5.08) fifth 3.90 (6.28) sixth 4.70 (7.56) seventh 5.81 (9.35) eighth 6.41 (10.32) ninth 7.20 (11.58) tenth 7.73 (12.44) eleventh 9.55 (15.37) twelfth 11.83 (19.04) thirteenth 12.47 (20.07) fourteenth 15.03 (24.19) fifteenth 18.57 (29.89) sixteenth 23.00 (37.02) reverse 1.98 (3.19), 2.39 (3.84), 2.95 (4.75), 3.65 (5.88), 4.52 (7.27), 5.44 (8.75), 6.72 (10.82), 7.42 (11.94), 8.33 (13.40), 8.94 (14.39), 11.05 (17.78), 13.69 (22.03) **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** 11200 lb (5080 kg)

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

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
2nd (I 2) Gear									
55.8 (41.6)	11935 (53.10)	1.75 (2.82)	2212	15.0	0.642 (0.390)	10.72 (2.11)	176 (80)	66 (19)	29.5 (100.0)
3rd (I 3) Gear									
59.9 (44.7)	10140 (45.10)	2.22 (3.57)	2104	9.0	0.579 (0.352)	11.88 (2.34)	178 (81)	64 (18)	29.5 (100.0)
4th (I 4) Gear									
61.3 (45.7)	8165 (36.33)	2.81 (4.52)	2093	6.2	0.564 (0.343)	12.18 (2.40)	176 (80)	64 (18)	29.5 (100.0)
5th (II 1) Gear									
63.2 (47.1)	6680 (29.71)	3.55 (5.71)	2103	4.5	0.548 (0.334)	12.54 (2.47)	176 (80)	64 (18)	29.5 (100.0)
6th (II 2) Gear									
64.0 (47.7)	5590 (24.86)	4.29 (6.92)	2095	3.1	0.548 (0.333)	12.54 (2.47)	172 (78)	57 (14)	29.5 (100.0)
7th (II 3) Gear									
63.6 (47.4)	4465 (19.86)	5.34 (8.60)	2100	3.0	0.549 (0.334)	12.54 (2.47)	171 (77)	55 (13)	29.5 (100.0)
8th (III 1) Gear									
64.6 (48.2)	4085 (18.18)	5.93 (9.53)	2098	2.6	0.539 (0.328)	12.74 (2.51)	172 (78)	55 (13)	29.5 (100.0)
9th (II 4) Gear									
62.9 (46.9)	3540 (15.74)	6.66 (10.73)	2098	2.1	0.552 (0.336)	12.44 (2.45)	172 (78)	55 (13)	29.5 (100.0)
10th (III 2) Gear									
63.3 (47.2)	3300 (14.68)	7.19 (11.57)	2101	2.0	0.551 (0.335)	12.49 (2.46)	172 (78)	64 (18)	29.5 (100.0)
11th (III 3) Gear									
59.4 (44.3)	2510 (11.17)	8.87 (14.28)	2090	1.7	0.581 (0.354)	11.82 (2.33)	172 (78)	66 (19)	29.5 (100.0)

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 25 G.P.M. remote hydraulic flow 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. **1929**, Nebraska Summary 357, July 13, 2001.

Brent T. Sampson
 Test Engineer

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

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Maximum Sound Level in 6th (II 2) gear	74.0	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 520/70R38;**, 12 (80)
 Two 420/70R28;**, 12 (80)
 15.0 in (380 mm)
 6925 lb (3140 kg)
 4445 lb (2015 kg)
 11365 lb (5155 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

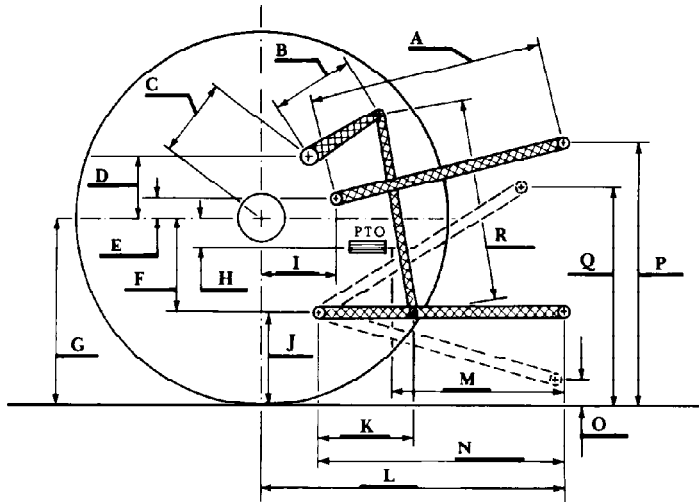
CATEGORY: II

Quick Attach: none

Maximum Force Exerted Through Whole Range: 7305 lbs (32.50 kN)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 2750 psi (190 bar)
- ii) Pump delivery rate at minimum pressure: 23.3 GPM (88.4 l/min)
- iii) Pump delivery rate at maximum
 - hydraulic power: 20.9 GPM (79.0 l/min)
 - Delivery pressure: 2175 psi (150 bar)
 - Power: 26.5 HP (19.8 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	32.3	820
H	3.5	90
I	14.2	360
J	22.7	575
K	21.7	550
L	44.1	1120
M	24.4	620
N	35.0	890
O	7.9	200
P	46.7	1185
Q	37.0	940
R	25.8	655