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January 2004

Nebraska Summary 493: Case-IH MXU100 Diesel 12-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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SUMMARY OF OECD TEST 2242-NEBRASKA SUMMARY 493

CASE IH MXU100 DIESEL

12 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					
86.9 (64.8)	2200	5.84 (22.09)	0.474 (0.288)	14.87 (2.93)	
Standard Power Take-off Speed (1001 rpm)					
87.2 (65.0)	2121	5.70 (21.59)	0.462 (0.281)	15.28 (3.01)	
Maximum Power (2 hours)					
87.7 (65.4)	1937	5.51 (20.86)	0.444 (0.270)	15.90 (3.13)	

VARYING POWER AND FUEL CONSUMPTION

86.9 (64.8)	2200	5.84 (22.09)	0.474 (0.288)	14.87 (2.93)	Air temperature
79.4 (59.2)	2358	5.76 (21.80)	0.511 (0.311)	13.79 (2.72)	73°F (23°C)
59.4 (44.3)	2363	4.75 (17.97)	0.564 (0.343)	12.51 (2.47)	Relative humidity
40.0 (29.8)	2369	3.61 (13.66)	0.636 (0.387)	11.09 (2.19)	40%
19.9 (14.9)	2387	2.63 (9.96)	0.931 (0.567)	7.57 (1.49)	Barometer
--	2407	1.80 (6.82)	--	--	30.1" Hg (102.0 kPa)

Maximum Torque - 373.3 lb.-ft. (438.3 Nm) at 1252 rpm
Maximum Torque Rise - 55.8%
Torque rise at 1800 engine rpm - 23%

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	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6th(2II) Gear									
74.7 (55.7)	6200 (27.6)	4.52 (7.27)	2203	3.6	0.545 (0.332)	12.94 (2.55)	180 (82)	45 (7)	29.8 (101.0)
75% of Pull at Maximum Power—6th(2II) Gear									
60.7 (45.3)	4655 (20.7)	4.90 (7.88)	2373	3.0	0.629 (0.382)	11.22 (2.21)	180 (82)	46 (8)	29.8 (101.0)
50% of Pull at Maximum Power—6th(2II) Gear									
40.8 (30.4)	3105 (13.8)	4.92 (7.92)	2368	2.2	0.739 (0.450)	9.54 (1.88)	180 (82)	46 (8)	29.8 (101.0)
75% of Pull at Reduced Engine Speed—7th(3II) Gear									
60.9 (45.4)	4655 (20.7)	4.90 (7.89)	1665	2.9	0.530 (0.322)	13.31 (2.62)	174 (79)	50 (10)	29.9 (101.1)
50% of Pull at Reduced Engine Speed—7th(3II) Gear									
40.5 (30.2)	3095 (13.8)	4.92 (7.91)	1654	2.1	0.547 (0.333)	12.89 (2.54)	176 (80)	50 (10)	29.9 (101.1)

Location of tests: Silsoe Research Institute, Wrest Park, Silsoe, MK45 4HS, United Kingdom

Dates of tests: November 2004 to January 2005.

Manufacturer: CNH U.K. Ltd., Basildon, Essex, SS14 3AD, England

FUEL and OIL: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.847 **Fuel weight** 7.04 lbs/gal (0.8453 kg/l) **Oil SAE** 10W30 **API service classification** CH-4 **Transmission and hydraulic lubricant** MAT 3525 fluid **Front axle lubricant** MAT 3525 fluid

ENGINE: Make CNH Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 00087961 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.196" (104.0 mm x 132.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 274 cu in (4485 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements and aspirator **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 **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

CHASSIS: **Type** front wheel assist **Serial No.** 221337 **Tread width** rear 68.1" (1730 mm) to 83.9" (2130 mm) front 64.2" (1630 mm) to 81.9" (2080 mm) **Wheelbase** 95.0" (2412 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.25 (2.01) second 1.83 (2.94) third 2.61 (4.20) fourth 3.13 (5.04) fifth 3.80 (6.11) sixth 4.59 (7.39) seventh 6.56 (10.55) eighth 7.59 (12.21) ninth 9.54 (15.35) tenth 11.11 (17.88) eleventh 15.86 (25.53) twelfth 23.09 (37.16) reverse 1.28 (2.06), 1.88 (3.02), 2.68 (4.31), 3.24 (5.21), 3.90 (6.27), 4.70 (7.57), 6.72 (10.82), 7.78 (12.52), 9.78 (15.74), 11.40 (18.34) 16.27 (26.19), 23.68 (38.11) **Clutch** single dry disc hydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1969 engine rpm or 1000 rpm at 2120 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 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)
38.2 (28.5)	12050 (53.6)	1.19 (1.91)	2368	13.0	1st(II) Gear 0.764 (0.464)	9.24 (1.82)	180 (82)	48 (9)	29.9 (101.1)
56.1 (41.8)	11940 (53.1)	1.76 (2.83)	2368	12.1	2nd(2I) Gear 0.666 (0.405)	10.60 (2.09)	180 (82)	50 (10)	29.9 (101.1)
71.6 (53.4)	11420 (50.8)	2.35 (3.78)	2141	9.1	3rd(3I) Gear 0.563 (0.342)	12.54 (2.47)	178 (81)	50 (10)	29.9 (101.1)
74.7 (55.7)	10295 (45.8)	2.72 (4.38)	1999	6.1	4th(III) Gear 0.527 (0.321)	13.39 (2.64)	176 (80)	48 (9)	29.9 (101.1)
76.2 (56.8)	9025 (40.2)	3.17 (5.10)	1898	5.1	5th(4I) Gear 0.501 (0.305)	14.06 (2.77)	180 (82)	50 (10)	29.9 (101.1)
75.9 (56.6)	7260 (32.3)	3.92 (6.31)	1921	3.9	6th(2II) Gear 0.515 (0.313)	13.71 (2.70)	176 (80)	45 (7)	29.9 (101.1)
74.0 (55.2)	4985 (22.2)	5.57 (8.96)	1891	3.1	7th(3II) Gear 0.522 (0.318)	13.50 (2.66)	176 (80)	48 (9)	29.9 (101.1)
73.4 (54.7)	4270 (19.0)	6.45 (10.38)	1887	2.7	8th(III) Gear 0.526 (0.320)	13.40 (2.64)	176 (80)	48 (9)	29.9 (101.1)
71.1 (53.0)	3225 (14.3)	8.27 (13.31)	1916	2.2	9th(4II) Gear 0.545 (0.332)	12.94 (2.55)	176 (80)	46 (8)	29.9 (101.1)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 6th (2II) gear	85.0	85.0
Bystander	--	--

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 6th (2II) gear	74.0	74.0
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 600/65R38; **,10 (70)

Two 480/65R28; **,10 (70)

19.5 in (495 mm)

6930 lb (3144 kg)

4435 lb (2011 kg)

11365 lb (5155 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: The test results on this Summary were obtained from tests carried out on the New Holland TS100A Diesel.

NOTE 2: All results reported were for a tractor equipped with a cab unless noted otherwise.

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: 26.5 gpm (100 lpm) remote hydraulic flow with a variable displacement pump nor 3 point lift claims of 9285 lbs (4212 kg) with mechanical lower links. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2242** Nebraska Summary 493, December 15, 2005.

Leonard L. Bashford
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
(Unballasted - Front Drive Disengaged)
FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel lb/hp.hr (kg/kW.h)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F cool- ing med	°F (°C) Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—6th(2II) Gear									
75.6 (56.4)	6405 (28.5)	4.43 (7.13)	2202	3.5	0.547 (0.333)	12.89 (2.54)	178 (81)	41 (5)	30.2 (102.2)
75% of Pull at Maximum Power—6th(2II) Gear									
62.1 (46.3)	4815 (21.4)	4.84 (7.78)	2376	2.6	0.635 (0.386)	11.12 (2.19)	180 (82)	41 (5)	30.2 (102.2)
50% of Pull at Maximum Power—6th(2II) Gear									
41.3 (30.8)	3190 (14.2)	4.86 (7.82)	2372	1.9	0.720 (0.438)	9.80 (1.93)	180 (82)	41 (5)	30.2 (102.2)
75% of Pull at Reduced Engine Speed—7th(3II) Gear									
62.2 (46.4)	4820 (21.4)	4.84 (7.79)	1667	2.6	0.509 (0.310)	13.86 (2.73)	174 (79)	46 (8)	30.2 (102.2)
50% of Pull at Reduced Engine Speed—7th(3II) Gear									
41.3 (30.8)	3195 (14.2)	4.85 (7.81)	1660	1.9	0.541 (0.329)	13.05 (2.57)	174 (79)	46 (8)	30.2 (102.2)
MAXIMUM POWER IN SELECTED GEARS									
1st(1I) Gear									
29.4 (21.9)	9420 (41.9)	1.17 (1.88)	2376	13.1	0.848 (0.516)	8.31 (1.64)	181 (83)	45 (7)	30.2 (102.2)
2nd(2I) Gear									
42.5 (31.7)	9285 (41.3)	1.72 (2.76)	2367	12.8	0.731 (0.444)	9.65 (1.90)	181 (83)	45 (7)	30.2 (102.2)
3rd(3I) Gear									
61.0 (45.5)	9050 (40.3)	2.53 (4.07)	2370	10.1	0.653 (0.397)	10.81 (2.13)	181 (83)	46 (8)	30.2 (102.2)
4th(1II) Gear									
70.3 (52.4)	8495 (37.8)	3.10 (4.99)	2335	6.8	0.584 (0.355)	12.08 (2.38)	180 (82)	48 (9)	30.2 (102.2)
5th(4I) Gear									
75.0 (55.9)	8025 (35.7)	3.50 (5.64)	2150	5.5	0.538 (0.327)	13.11 (2.58)	178 (81)	48 (9)	30.2 (102.2)
6th(2II) Gear									
77.0 (57.4)	7575 (33.7)	3.81 (6.13)	1912	4.5	0.505 (0.307)	13.96 (2.75)	176 (80)	45 (7)	30.2 (102.2)
7th(3II) Gear									
75.8 (56.5)	5160 (22.9)	5.51 (8.86)	1899	2.8	0.509 (0.310)	13.86 (2.73)	176 (80)	41 (5)	30.2 (102.2)
8th(1III) Gear									
75.8 (56.5)	4440 (19.7)	6.40 (10.30)	1901	2.4	0.505 (0.307)	13.96 (2.75)	178 (81)	41 (5)	30.2 (102.2)
9th(4II) Gear									
73.9 (55.1)	3410 (15.2)	8.12 (13.07)	1911	2.0	0.524 (0.319)	13.45 (2.65)	176 (80)	41 (5)	30.2 (102.2)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: No

Maximum Force Exerted Through Whole Range: 7330 lbs (32.6 kN) Mechanical lower links
7825 lbs (34.8 kN) Electronic draft control

i) Opening pressure of relief valve:	NA	NA
	fixed disp. pump	Variable disp. pump
Sustained pressure at compensator cutoff:	2920 psi (201 bar)	3120 psi (215 bar)
ii) Pump delivery rate at minimum pressure:	22.0 GPM (83.3 l/min)	26.3 GPM (99.6 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	19.1 GPM (72.2 l/min)	25.9 GPM (97.9 l/min)
Delivery pressure:	2465 psi (170 bar)	2610 psi (180 bar)
Power:	27.5 HP (20.5 kW)	39.4 HP (29.4 kW)

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi.(bar)	2920 (201)
Location:	lift cylinder
Hydraulic oil temperature: °F (°C)	150 (65)
Location:	hydraulic sump
Category:	II
Quick attach:	none

Mechanical lower link

SAE Static Test—System pressure 2625 psi (181 Bar) (two 50 mm boost cylinders)

Hitch point distance to ground level in. (mm)	7.9 (200)	16.3 (415)	23.0 (585)	28.5 (723)	34.4 (875)
Lift force on frame lb	13330	12565	11355	10185	8950
" " " " " " (kN)	(59.3)	(55.9)	(50.5)	(45.3)	(39.8)

Electronic draft control

SAE Static Test—System pressure 2815 psi (194 Bar) (two 80 mm external cylinders)

Hitch point distance to ground level in. (mm)	7.9 (198)	15.7 (400)	23.0 (585)	30.3 (770)	35.8 (910)
Lift force on frame lb	12700	11575	11105	10520	9755
" " " " " " (kN)	(56.5)	(51.5)	(49.4)	(46.8)	(43.4)

HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	mm	inch	mm
A	27.4	697	28.0	710
B	12.2	310	12.2	310
C	15.6	395	15.6	395
D	14.6	370	14.6	370
E	8.2	208	10.8	275
F	9.3	235	9.3	235
G	32.3	820	32.3	820
H	1.9	48	1.9	48
I	17.9	455	16.9	430
J	23.0	585	23.0	585
K	19.8	505	23.0	585
L	44.0	1118	44.0	1118
M	22.2	563	22.2	563
N	37.4	950	37.4	950
O	7.8	197	7.9	200
P	47.0	1195	42.0	1068
Q	32.3	820	32.3	820
R	30.2	767	32.1	815

