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Test 1827: Case IH MX 255 Diesel

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NEBRASKA OECD TRACTOR TEST 1827–SUMMARY 415

CASE IH MX 255 DIESEL

18 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—1003 rpm)					
219.19 (163.45)	2000	12.47 (47.20)	0.400 (0.243)	17.58 (3.46)	
Maximum Power (2 hours)					
248.20 (185.08)	1650	13.11 (49.64)	0.372 (0.226)	18.93 (3.73)	

VARYING POWER AND FUEL CONSUMPTION					
219.19 (163.45)	2000	12.47 (47.20)	0.400 (0.243)	17.58 (3.46)	Air temperature
194.18 (144.80)	2087	11.35 (42.95)	0.411 (0.250)	17.11 (3.37)	82°F (28°C)
148.25 (110.55)	2121	9.38 (35.52)	0.445 (0.271)	15.80 (3.11)	Relative humidity
100.34 (74.82)	2156	7.21 (27.29)	0.505 (0.307)	13.92 (2.74)	39%
51.27 (38.23)	2189	5.03 (19.05)	0.690 (0.420)	10.19 (2.01)	Barometer
1.12 (0.83)	2225	2.99 (11.30)	18.825 (11.451)	0.37 (0.07)	28.78" Hg (97.46 kPa)

Maximum Torque - 879 lb.-ft. (1191 Nm) at 1400 rpm

Maximum Torque Rise - 52.6%

Torque rise at 1599 engine rpm - 40%

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—7th Gear									
187.68 (139.95)	16484 (73.33)	4.27 (6.87)	1997	5.03	0.480 (0.292)	14.67 (2.89)	190 (88)	67 (19)	29.12 (98.61)
75% of Pull at Maximum Power—7th Gear									
149.45 (111.44)	12301 (54.72)	4.56 (7.33)	2083	2.85	0.525 (0.320)	13.39 (2.64)	185 (85)	67 (19)	29.12 (98.61)
50% of Pull at Maximum Power—7th Gear									
103.10 (76.88)	8197 (36.46)	4.72 (7.59)	2132	1.72	0.590 (0.359)	11.92 (2.35)	183 (84)	67 (19)	29.12 (98.61)
75% of Pull at Reduced Engine Speed—9th Gear									
149.78 (111.69)	12307 (54.74)	4.56 (7.35)	1580	3.02	0.453 (0.275)	15.54 (3.06)	185 (85)	67 (19)	29.11 (98.58)
50% of Pull at Reduced Engine Speed—9th Gear									
103.47 (77.16)	8207 (36.51)	4.73 (7.61)	1615	1.68	0.492 (0.299)	14.29 (2.81)	184 (84)	67 (19)	29.11 (98.58)

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln, Nebraska 68583-0832

Dates of Test: September 15 - October 24, 2003

Manufacturer: CNH America LLC, 700 State St. Racine, Wi. 53404 USA

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8447 Fuel weight 7.033 lbs/gal (0.843 kg/l) Oil SAE 15W40 API service classification SF/CD/CE Transmission and hydraulic lubricant Case IH Hy-Tran Ultra fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 26.0 hours

ENGINE: Make Consolidated Diesel Corporation Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *46274755* **Crankshaft** lengthwise **Rated engine speed** 2000 **Bore and stroke** 4.488" x 5.315" (114.0 mm x 135.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 505 cu in (8268 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** two paper elements and prefilter **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 85.1-93.6 lb/h (38.6 - 42.5 kg/h) **High idle:** 2180-2270 rpm **Turbo boost:** nominal 21.0 - 25.4 psi (145 - 175 kPa) as measured 23.4 psi (161 kPa)

CHASSIS: Type front wheel assist **Serial No.** *JAZ126438* **Tread width** rear 64.0" (1626 mm) to 129.0" (3277 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 118.2" (3005 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.96 (3.15) second 2.24 (3.61) third 2.58 (4.16) fourth 2.96 (4.77) fifth 3.41 (5.48) sixth 3.90 (6.28) seventh 4.55 (7.33) eighth 5.23 (8.41) ninth 6.02 (9.69) tenth 6.91 (11.12) eleventh 7.92 (12.75) twelfth 9.09 (14.63) thirteenth 11.33 (18.23) fourteenth 12.99 (20.91) fifteenth 14.98 (24.11) sixteenth 17.19 (27.66) seventeenth 19.72 (31.73) eighteenth 22.61 (36.39) reverse 2.81 (4.53), 3.23 (5.20), 6.56 (10.55), 7.52 (12.10) **Clutch** multiple wet disc electrohydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 1000 rpm at 1994 engine rpm **Unladen tractor mass** 21550 lb (9775 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)	Temp.°F (°C) cool- ing med	Barom. inch Hg (kPa)		
5th Gear									
169.97 (126.75)	21234 (94.45)	3.00 (4.83)	2007	11.10	0.521 (0.317)	13.49 (2.66)	186 (86)	44 (7)	29.09 (98.51)
6th Gear									
185.66 (138.45)	20591 (91.59)	3.38 (5.44)	1907	8.14	0.488 (0.297)	14.42 (2.84)	187 (86)	48 (9)	29.08 (98.48)
7th Gear									
202.36 (150.90)	19956 (88.77)	3.80 (6.12)	1821	7.24	0.463 (0.282)	15.19 (2.99)	189 (87)	49 (9)	29.08 (98.48)
8th Gear									
208.02 (155.12)	18928 (84.20)	4.12 (6.63)	1701	6.16	0.444 (0.270)	15.85 (3.12)	190 (88)	50 (10)	29.08 (98.48)
9th Gear									
210.08 (156.65)	17051 (75.84)	4.62 (7.44)	1645	5.65	0.446 (0.272)	15.75 (3.10)	197 (91)	67 (19)	29.12 (98.61)
10th Gear									
211.68 (157.85)	14752 (65.62)	5.38 (8.66)	1644	4.17	0.443 (0.270)	15.86 (3.13)	196 (91)	67 (19)	29.12 (98.61)
11th Gear									
211.54 (157.74)	12735 (56.65)	6.23 (10.02)	1642	3.20	0.442 (0.269)	15.91 (3.13)	197 (92)	67 (19)	29.12 (98.61)
12th Gear									
210.67 (157.10)	10969 (48.79)	7.20 (11.59)	1644	2.52	0.438 (0.266)	16.07 (3.17)	197 (92)	67 (19)	29.12 (98.61)
13th Gear									
205.42 (153.18)	8541 (37.99)	9.02 (14.52)	1639	1.74	0.446 (0.271)	15.81 (3.11)	198 (92)	69 (21)	28.79 (97.49)

REPAIRS AND ADJUSTMENTS: An O-ring in a remote outlet coupler was replaced. Tests continued after repairs.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests the fuel temperature at the injection pump inlet was maintained at 115°F (46°C). This tractor did not meet the manufacturer's claim of 53.1 GPM (201 lpm) optional hydraulic flow. The pull in 3rd gear (ballasted tractor) was limited to avoid excessive tractor bouncing. 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 and correct report of official Tractor Test No. **1827**, Nebraska Summary 415, January 15, 2004.

Leonard L. Bashford
Director

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

TRACTOR SOUND LEVEL WITH CAB

dB(A)

At 75% load in 9th gear	71.7
Bystander in 18th gear	86.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires -No., size, ply & psi (kPa)	Four 520/85R42;**,11(75)	Two 520/85R42;**,15(105)
Ballast - Duals (total)	1950 lb (885 kg)	None
- Cast Iron (total)	4135 lb (1876 kg)	None
Front Tires -No., size, ply & psi (kPa)	Two 420/90R30;**,19(130)	Two 420/90R30;**,17(115)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	900 lb (408 kg)	None
Height of Drawbar	17.5 in (445 mm)	17.0 in (430 mm)
Static Weight with operator - Rear	18485 lb (8385 kg)	12700 lb (5760 kg)
- Front	10225 lb (4638 kg)	9025 lb (4094 kg)
- Total	28710 lb(13023 kg)	21725 lb(9854 kg)

DRAWBAR PERFORMANCE
BALLASTED - 1650 ENGINE RPM
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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	Temp.°C Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
175.18 (130.63)	28070 (124.86)	2.34 (3.77)	2004	8.52	0.511 (0.311)	13.76 (2.71)	187 (86)	54 (12)	28.80 (97.53)
4th Gear									
187.78 (140.03)	26919 (119.74)	2.62 (4.21)	1925	7.22	0.486 (0.296)	14.47 (2.85)	188 (87)	58 (14)	28.80 (97.53)
5th Gear									
198.47 (148.00)	25792 (114.73)	2.89 (4.64)	1828	6.06	0.475 (0.289)	14.81 (2.92)	191 (88)	60 (16)	28.80 (97.53)
6th Gear									
205.13 (152.96)	23744 (105.62)	3.24 (5.21)	1766	4.80	0.464 (0.282)	15.16 (2.99)	193 (89)	62 (17)	28.79 (97.49)
7th Gear									
213.56 (159.25)	22640 (100.71)	3.54 (5.69)	1646	4.38	0.442 (0.269)	15.92 (3.14)	192 (89)	64 (18)	28.79 (97.49)
8th Gear									
215.40 (160.63)	19628 (87.31)	4.12 (6.62)	1653	3.44	0.441 (0.268)	15.94 (3.14)	195 (91)	70 (21)	28.78 (97.46)
9th Gear									
215.33 (160.57)	16969 (75.48)	4.76 (7.66)	1646	2.79	0.438 (0.266)	16.07 (3.17)	196 (91)	71 (22)	28.78 (97.46)
10th Gear									
214.30 (159.80)	14603 (64.96)	5.50 (8.86)	1652	2.29	0.438 (0.266)	16.07 (3.17)	196 (91)	71 (22)	28.77 (97.43)
11th Gear									
210.40 (156.90)	12496 (55.58)	6.31 (10.16)	1646	1.93	0.446 (0.271)	15.77 (3.11)	198 (92)	72 (22)	28.77 (97.43)
12th Gear									
207.56 (154.78)	10717 (47.67)	7.26 (11.69)	1644	1.58	0.450 (0.274)	15.63 (3.08)	198 (92)	73 (23)	28.76 (97.39)
13th Gear									
204.14 (152.22)	8340 (37.10)	9.18 (14.77)	1660	1.10	0.450 (0.274)	15.62 (3.08)	198 (92)	75 (24)	28.76 (97.39)

THREE POINT HITCH PERFORMANCE(OECD Static Test)

CATEGORY: III

Quick Attach: Yes

Maximum force exerted through whole range: 15183 lb (67.5 kN) High Lift Option
17931 lb (79.8 kN)

i) Opening pressure of relief valve: NA NA

Sustained pressure at compensator cutoff: 3040 psi (209 bar) High Flow Option
3060 psi (211 bar)

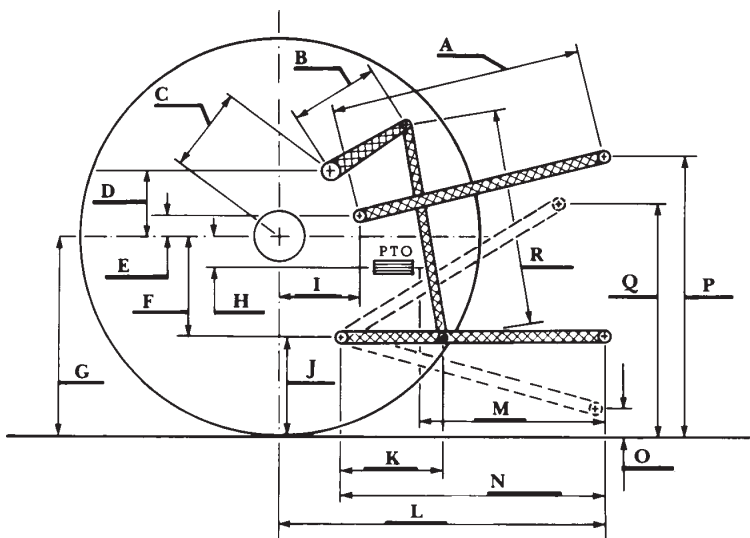
ii) Pump delivery rate at minimum pressure and rated engine speed: 38.6 GPM (146.1 l/min) 52.4 GPM (198.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 38.6 GPM (146.1 l/min) 46.6 GPM (176.5 l/min)

Delivery pressure: 2750 psi (190 bar) 2760 psi (190 bar)

Power: 62.0 HP (46.2 kW) 75.1 Hp (56.0 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.2	718
B	20.5	520
C	22.9	581
D	20.7	525
E	10.5	266
F	15.7	400
G	36.4	925
H	3.5	90
I	20.9	530
J	20.7	525
K	30.2	768
L	46.1	1170
*L'	50.7	1287
M	20.1	511
N	38.2	970
O	9.0	230
P	47.6	1210
Q	40.7	1035
R	39.2	995

*L' to Quick Attach ends



CASE IH MX 255 DIESEL

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln
Darrell Nelson, Dean and Director