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Test 1761: Case IH MX 270 Diesel

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NEBRASKA OECD TRACTOR TEST 1761—SUMMARY 275

CASE IH MX 270 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—1014 rpm)					
237.53 (177.12)	2001	13.22 (50.06)	0.395 (0.240)	17.96 (3.54)	
Standard Power Take-off Speed (999 rpm)					
243.18 (181.34)	1976	13.54 (51.27)	0.395 (0.240)	17.96 (3.54)	
Maximum Power (2 hours)					
270.93 (202.04)	1800	14.79 (55.98)	0.387 (0.235)	18.32 (3.61)	

VARYING POWER AND FUEL CONSUMPTION

237.53 (177.12)	2001	13.22 (50.06)	0.395 (0.240)	17.96 (3.54)	Air temperature
202.05 (150.67)	2010	11.68 (44.23)	0.410 (0.249)	17.29 (3.41)	75°F (24°C)
152.21 (113.50)	2016	9.44 (35.73)	0.440 (0.267)	16.12 (3.18)	Relative humidity
102.16 (76.18)	2034	7.07 (26.77)	0.490 (0.298)	14.45 (2.85)	42%
51.19 (38.17)	2038	4.66 (17.63)	0.645 (0.392)	10.99 (2.17)	Barometer
0.98 (0.73)	2040	2.50 (9.45)	17.981 (10.938)	0.39 (0.08)	28.84" Hg (97.67 kPa)

Maximum Torque - 928 lb.-ft. (1258 Nm) at 1301 rpm

Maximum Torque Rise - 48.8%

Torque rise at 1600 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	Barom. inch Hg (kPa)
Maximum Power—7th Gear								
207.01 (154.37)	17769 (79.04)	4.37 (7.03)	1997	4.65	0.451 (0.275)	15.70 (3.09)	184 (84)	47 (8)
75% of Pull at Maximum Power—7th Gear								
160.45 (119.65)	13304 (59.18)	4.52 (7.28)	2029	2.87	0.476 (0.290)	14.88 (2.93)	183 (84)	52 (11)
50% of Pull at Maximum Power—7th Gear								
108.43 (80.86)	8891 (39.55)	4.57 (7.36)	2032	1.87	0.528 (0.321)	13.43 (2.65)	182 (83)	55 (13)
75% of Pull at Reduced Engine Speed—9th Gear								
160.49 (119.68)	13305 (59.18)	4.52 (7.28)	1536	2.96	0.441 (0.268)	16.09 (3.17)	184 (84)	54 (12)
50% of Pull at Reduced Engine Speed—9th Gear								
108.57 (80.96)	8886 (39.52)	4.58 (7.37)	1539	1.87	0.479 (0.291)	14.79 (2.91)	182 (83)	55 (13)

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

Dates of Test: April 15-24, 1999

Manufacturer: Case Corporation, 700 State St. Racine Wi. USA

FUEL, OIL and TIME: Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8512 Fuel weight 7.087 lbs/gal (0.849 kg/l) Oil SAE 15W40 API service classification SF/CD/CE Transmission and hydraulic lubricant Case IH Hy-Tran Plus fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 38.0 hours

ENGINE: Make Consolidated Diesel Corporation Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *457840670* **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: 90.4-95.9 lb/h (41.0 - 43.5 kg/h) High idle: 2025-2065 rpm Turbo boost: nominal 22.8 - 25.7 psi (157 - 177 kPa) as measured 23.0 psi (159 kPa)

CHASSIS: Type front wheel assist **Serial No.** *X2704C4JJA0099648* **Tread width** rear 64.0" (1626 mm) to 130.9" (3325 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 118.3" (3006 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 1.91 (3.08) second 2.20 (3.53) third 2.53 (4.07) fourth 2.90 (4.67) fifth 3.33 (5.36) sixth 3.82 (6.15) seventh 4.46 (7.17) eighth 5.11 (8.23) ninth 5.90 (9.49) tenth 6.76 (10.88) eleventh 7.76 (12.49) twelfth 8.90 (14.32) thirteenth 11.09 (17.85) fourteenth 12.72 (20.47) fifteenth 14.66 (23.60) sixteenth 16.82 (27.07) seventeenth 19.29 (31.05) eighteenth 22.14 (35.63) reverse 2.75 (4.43), 3.16 (5.09), 6.42 (10.33), 7.36 (11.84) **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 1974 engine rpm **Unladen tractor mass** 20900 lb (9480 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)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cooling med	Air dry bulb	Barom. inch Hg (kPa)
5th Gear									
174.36 (130.02)	21665 (96.37)	3.02 (4.86)	2025	13.05	0.508 (0.309)	13.95 (2.75)	184 (84)	47 (8)	29.14 (98.68)
6th Gear									
199.01 (148.40)	21008 (93.45)	3.55 (5.72)	1974	8.41	0.477 (0.290)	14.86 (2.93)	186 (85)	47 (8)	29.16 (98.75)
7th Gear									
218.58 (162.99)	20353 (90.53)	4.03 (6.48)	1884	6.61	0.458 (0.279)	15.47 (3.05)	187 (86)	47 (8)	29.17 (98.78)
8th Gear									
233.98 (174.48)	19712 (87.68)	4.45 (7.16)	1802	6.02	0.449 (0.273)	15.78 (3.11)	191 (88)	48 (9)	29.17 (98.78)
9th Gear									
236.11 (176.07)	16958 (75.43)	5.22 (8.40)	1800	4.21	0.444 (0.270)	15.97 (3.15)	191 (88)	49 (9)	29.17 (98.78)
10th Gear									
238.01 (177.49)	14796 (65.82)	6.03 (9.71)	1798	3.50	0.442 (0.269)	16.05 (3.16)	195 (90)	50 (10)	29.16 (98.75)
11th Gear									
236.66 (176.48)	12724 (56.60)	6.97 (11.23)	1799	2.78	0.442 (0.269)	16.04 (3.16)	194 (90)	49 (9)	29.16 (98.75)
12th Gear									
234.73 (175.04)	10942 (48.67)	8.04 (12.95)	1800	2.60	0.445 (0.271)	15.92 (3.14)	193 (89)	49 (9)	29.16 (98.75)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At 75% load in 9th gear	73.2
Bystander	--

Single Front Tires

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi (kPa)	Four 20.8R42;**,14(95)	Two 20.8R42;**,18(125)
Ballast - Duals (total)	1890 lb (858 kg)	None
- Cast Iron (total)	5300 lb (2404 kg)	None
Front Tires - No., size, ply & psi (kPa)	Two 16.9R30;***,30(205)	Two 16.9R30;***,18(125)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	2200 lb (998 kg)	None
Height of Drawbar	15.5 in (395 mm)	15.5 in(395 mm)
Static Weight with operator - Rear	19275 lb (8743 kg)	12845 lb(5826 kg)
- Front	11190 lb (5076 kg)	8230 lb(3733 kg)
- Total	30465 lb(13819 kg)	21075 lb(9559 kg)

Dual Front Tires

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi (kPa)	Four 20.8R42;**,13(90)	Two 20.8R42;**,18(125)
Ballast - Duals (total)	1890 lb (858 kg)	None
- Cast Iron (total)	3095 lb (1404 kg)	None
Front Tires - No., size, ply & psi (kPa)	Four 16.9R30;***,14(90)	Two 16.9R30;***,18(125)
Ballast - Duals (total)	1020 lb (462 kg)	None
- Cast Iron (total)	1800 lb (817 kg)	None
Height of Drawbar	15.5 in (395 mm)	15.5 in(395 mm)
Static Weight with operator - Rear	17215 lb (7809 kg)	12845 lb(5826 kg)
- Front	11665 lb (5291 kg)	8230 lb(3733 kg)
- Total	28880 lb(13100 kg)	21075 lb(9559 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

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 return was maintained at 188°F (87°C) This tractor did not meet manufacturer's claims of cab sound level of 72.0 dB(A) nor 44.0 GPM (166 lpm) hydraulic pump 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. **1761**, Nebraska Summary 275, May 10, 1999.

Leonard L. Bashford
Director

M.F. Kocher
R.D. Grisso
G.J. Hoffinan
Board of Tractor Test Engineers

DRAWBAR PERFORMANCE
BALLASTED - SINGLE FRONT TIRES
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)
3rd Gear									
187.36 (139.71)	30788 (136.95)	2.28 (3.67)	1979	11.50	0.507 (0.308)	13.98 (2.75)	186 (86)	65 (18)	28.66 (97.05)
4th Gear									
204.13 (152.22)	29242 (130.07)	2.62 (4.22)	1908	8.16	0.486 (0.296)	14.58 (2.87)	186 (86)	67 (19)	28.65 (97.02)
5th Gear									
216.70 (161.59)	28412 (126.38)	2.86 (4.60)	1806	7.59	0.484 (0.294)	14.63 (2.88)	193 (89)	69 (21)	28.65 (97.02)
6th Gear									
224.02 (167.05)	25003 (111.22)	3.36 (5.41)	1801	5.17	0.467 (0.284)	15.17 (2.99)	193 (89)	70 (21)	28.65 (97.02)
7th Gear									
229.52 (171.15)	21713 (96.58)	3.96 (6.37)	1801	4.03	0.458 (0.279)	15.48 (3.05)	194 (90)	71 (22)	28.64 (96.99)
8th Gear									
231.23 (172.43)	18939 (84.24)	4.58 (7.37)	1800	3.23	0.454 (0.276)	15.62 (3.08)	193 (89)	73 (23)	28.63 (96.95)
9th Gear									
231.00 (172.26)	16320 (72.59)	5.31 (8.55)	1799	2.69	0.454 (0.276)	15.62 (3.08)	196 (91)	73 (23)	28.63 (96.95)
10th Gear									
230.32 (171.75)	14134 (62.87)	6.11 (9.83)	1798	2.41	0.455 (0.277)	15.57 (3.07)	196 (91)	73 (23)	28.63 (96.95)
11th Gear									
227.66 (169.77)	12165 (54.11)	7.02 (11.30)	1794	1.96	0.459 (0.279)	15.44 (3.04)	197 (92)	74 (23)	28.63 (96.95)
12th Gear									
224.70 (167.56)	10407 (46.29)	8.10 (13.04)	1799	1.68	0.464 (0.282)	15.27 (3.01)	197 (92)	74 (23)	28.63 (96.95)

DRAWBAR PERFORMANCE
BALLASTED - DUAL FRONT TIRES
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)
3rd Gear									
187.33 (139.69)	30311 (134.83)	2.32 (3.73)	1997	10.72	0.497 (0.302)	14.26 (2.81)	184 (84)	52 (11)	28.53 (96.61)
4th Gear									
206.22 (153.78)	29214 (129.95)	2.65 (4.26)	1914	7.33	0.477 (0.290)	14.85 (2.93)	185 (85)	53 (12)	28.52 (96.58)
5th Gear									
222.91 (166.22)	28935 (128.71)	2.89 (4.65)	1809	6.67	0.469 (0.286)	15.10 (2.97)	191 (88)	53 (12)	28.53 (96.61)
6th Gear									
230.42 (171.82)	25591 (113.83)	3.38 (5.43)	1799	4.36	0.455 (0.277)	15.58 (3.07)	191 (88)	53 (12)	28.55 (96.68)
7th Gear									
236.04 (176.01)	22232 (98.89)	3.98 (6.41)	1799	3.39	0.445 (0.271)	15.91 (3.14)	192 (89)	53 (12)	28.59 (96.82)
8th Gear									
235.91 (175.92)	19244 (85.60)	4.60 (7.40)	1801	3.12	0.446 (0.271)	15.91 (3.13)	195 (90)	52 (11)	28.61 (96.88)
9th Gear									
236.54 (176.39)	16719 (74.37)	5.31 (8.54)	1795	2.58	0.444 (0.270)	15.96 (3.14)	195 (91)	52 (11)	28.61 (96.88)
10th Gear									
236.24 (176.16)	14463 (64.33)	6.13 (9.86)	1800	2.03	0.444 (0.270)	15.98 (3.15)	194 (90)	52 (11)	28.61 (96.88)
11th Gear									
233.41 (174.06)	12442 (55.34)	7.04 (11.32)	1798	1.76	0.450 (0.274)	15.74 (3.10)	195 (90)	52 (11)	28.61 (96.88)
12th Gear									
228.35 (170.28)	10552 (46.94)	8.12 (13.06)	1804	1.48	0.458 (0.279)	15.48 (3.05)	195 (90)	52 (11)	28.62 (96.92)

THREE POINT HITCH PERFORMANCE(OECD Static Test)

CATEGORY: III

Quick Attach: Yes

Maximum Force Exerted Through Whole Range: 14712 lb (65.4 kN) High Lift Option
16229 lb (72.2 kN)

i) Opening pressure of relief valve: NA NA

Sustained pressure at compensator cutoff: 2920 psi (201 bar) High Flow Option
2970 psi (205 bar)

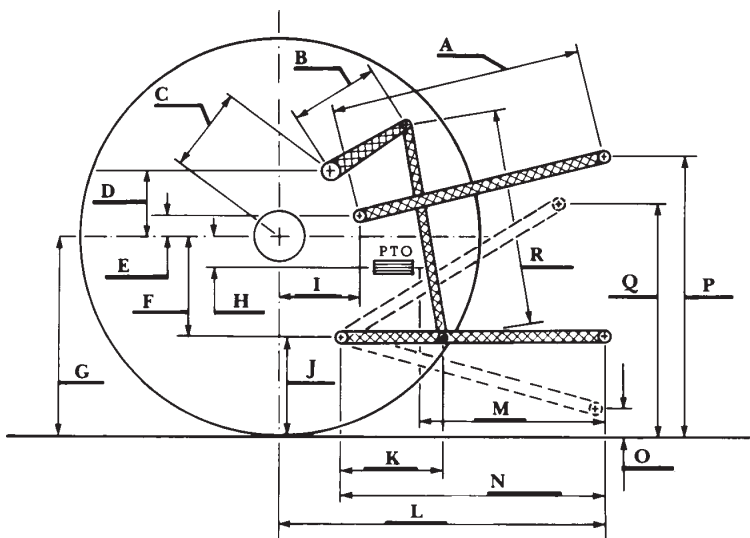
ii) Pump delivery rate at minimum pressure and rated engine speed: 31.1 GPM (117.7 l/min) 43.3 GPM (163.9 l/min)

iii) Pump delivery rate at maximum hydraulic power: 28.7 GPM (108.6 l/min) 40.3 GPM (152.6 l/min)

Delivery pressure: 2750 psi (190 bar) 2700 psi (186 bar)

Power: 46.0 HP (34.3 kW) 63.5 Hp (47.3 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	25.2	640
B	20.5	520
C	22.9	581
D	20.7	525
E	8.7	220
F	15.7	400
G	37.6	955
H	3.5	90
I	20.9	531
J	21.9	555
K	30.3	770
L	46.1	1170
*L'	50.7	1287
M	20.0	507
N	38.2	970
O	8.0	203
P	48.8	1240
Q	37.6	955
R	41.3	1050

*L' to Quick Attach ends



CASE IH MX 270 DIESEL

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