

NEBRASKA OECD TRACTOR TEST 1995–SUMMARY 770

CASE IH MAGNUM 225 DIESEL

CONTINUOUSLY VARIABLE TRANSMISSION

CHASSIS SERIAL NUMBERS ZARH06086 AND HIGHER

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption		D.E.F. Consumption		Mean Atmospheric Conditions
		Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Gal/hr (l/h)	
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1109 rpm)						
203.80 (151.97)	2099	11.27 (42.66)	0.390 (0.237)	18.08 (3.56)	0.73 (2.75)	
Standard Power Take-off Speed (1000 rpm)						
217.95 (162.52)	1893	11.59 (43.89)	0.375 (0.228)	18.80 (3.70)	0.74 (2.79)	
Maximum Power (1 hour)						
222.90 (166.22)	1750	11.56 (43.78)	0.366 (0.223)	19.27 (3.80)	0.80 (3.03)	

VARYING POWER AND FUEL CONSUMPTION

203.80 (151.97)	2099	11.27 (42.66)	0.390 (0.237)	18.08 (3.56)	0.73 (2.75)	Air temperature
178.15 (132.84)	2159	10.18 (38.54)	0.403 (0.245)	17.50 (3.45)	0.66 (2.49)	79°F (26°C)
134.78 (100.51)	2178	8.20 (31.03)	0.429 (0.261)	16.44 (3.24)	0.52 (1.97)	Relative humidity
90.56 (67.53)	2195	6.22 (23.54)	0.485 (0.295)	14.56 (2.87)	0.36 (1.36)	44%
45.63 (34.03)	2211	4.36 (16.51)	0.675 (0.410)	10.46 (2.06)	0.19 (0.73)	Barometer
4.92 (3.67)	2225	2.59 (9.80)	3.712 (2.258)	1.90 (0.37)	0.04 (0.15)	29.02" Hg (98.27 kPa)

Maximum torque - 734 lb.-ft. (996 Nm) at 1499 rpm

Maximum torque rise - 44.0%

Torque rise at 1700 engine rpm - 35%

Power increase at 1750 engine rpm - 9.4%

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—5.6 mph (9.0 km/h)									
168.96 (125.99)	12057 (53.63)	5.26 (8.46)	2102	2.7	0.478 (0.291)	14.77 (2.91)	188 (86)	77 (25)	28.63 (96.95)
75% of Pull at Maximum Power—5.6 mph (9.0 km/h)									
133.61 (99.63)	9041 (40.22)	5.54 (8.92)	2226	2.0	0.509 (0.310)	13.86 (2.73)	188 (87)	88 (31)	28.65 (97.02)
50% of Pull at Maximum Power—5.6 mph (9.0 km/h)									
89.42 (66.68)	6004 (26.70)	5.58 (8.98)	2253	1.2	0.581 (0.353)	12.15 (2.39)	188 (86)	89 (32)	28.65 (97.02)
75% of Pull at Reduced Engine Speed—8.1 mph (13.0 km/h)									
133.28 (99.38)	9008 (40.07)	5.55 (8.92)	1523	2.0	0.447 (0.272)	15.77 (3.11)	186 (85)	90 (32)	28.65 (97.02)
50% of Pull at Reduced Engine Speed—8.1 mph (13.0 km/h)									
89.52 (66.75)	5983 (26.61)	5.61 (9.03)	1528	1.2	0.486 (0.295)	14.53 (2.86)	186 (86)	90 (32)	28.66 (97.05)

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

Dates of tests: June 1 - 13, 2011

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

CONSUMABLE Fluids, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8476 **Fuel weight** 7.057 lbs/gal (0.846 kg/l) **Diesel Exhaust Fluid (DEF)** 30% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil SAE 15W40 API service classification** CI-4 **Transmission and hydraulic lubricant** Case IH Akcela Nexplora fluid **Front axle lubricant** SAE 85W-140 API GL-5 **Total time engine was operated:** 24.5 hours

ENGINE: Make F.P.T. Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment. **Serial No.** *000754953* **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.094" x 5.197" (104.0 mm x 132.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 410 cu in (6728 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 **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 75.0 - 80.2 lb/h (34.0 - 36.4 kg/h) **High idle:** 2280 - 2330 rpm, 2200-2250 rpm (PTO engaged) **Turbo boost:** nominal 21.8 - 24.7 psi (150 - 170 kPa) as measured 23.4 psi (161 kPa)

CHASSIS: Type front wheel assist **Serial No.** *ZARH06740* **Tread width** rear 64.0" (1626 mm) to 129.0" (3277 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 118.3" (3005 mm) **Hydraulic control system** direct engine drive **Transmission** Infinitely variable with two mechanical ranges and automatic shifting between ranges. **Nominal travel speeds mph (km/h)** forward - 0-25.0 mph (0-40 km/h), reverse - 0-25.0 mph (0-40 km/h) **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** 540 rpm at 1950 engine rpm or 1000 rpm at 1892 engine rpm **Unladen tractor mass** 20480 lb (9289 kg)

DRAWBAR PERFORMANCE
UNBALLASTED - FRONT DRIVE ENGAGED
MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

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	Air dry bulb	Barom. inch Hg (kPa)	
				3.2 mph (5.1 km/h)					
146.25 (109.06)	19179 (85.31)	2.86 (4.60)	2156	8.9	0.546 (0.332)	12.94 (2.55)	190 (88)	81 (27)	28.62 (96.92)
				3.7 mph (6.0 km/h)					
160.06 (119.36)	17781 (79.09)	3.38 (5.43)	2100	6.2	0.503 (0.306)	14.03 (2.76)	190 (88)	82 (28)	28.63 (96.95)
				4.2 mph (6.8 km/h)					
164.47 (122.64)	15820 (70.37)	3.90 (6.28)	2100	4.4	0.488 (0.297)	14.45 (2.85)	189 (87)	83 (28)	28.64 (96.99)
				4.7 mph (7.5 km/h)					
166.93 (124.48)	14425 (64.17)	4.34 (6.98)	2100	3.5	0.474 (0.288)	14.88 (2.93)	188 (87)	80 (27)	28.63 (96.95)
				5.0 mph (8.0 km/h)					
168.01 (125.29)	13546 (60.25)	4.65 (7.48)	2100	3.1	0.470 (0.286)	15.01 (2.96)	187 (86)	79 (26)	28.63 (96.95)
				5.6 mph (9.0 km/h)					
168.96 (125.99)	12057 (53.63)	5.26 (8.46)	2102	2.7	0.478 (0.291)	14.77 (2.91)	188 (86)	77 (25)	28.63 (96.95)
				6.2 mph (10.0 km/h)					
171.88 (128.17)	11029 (49.06)	5.85 (9.41)	2099	2.5	0.468 (0.285)	15.07 (2.97)	188 (86)	74 (23)	28.71 (97.22)
				6.8 mph (11.0 km/h)					
170.56 (127.18)	9913 (44.09)	6.45 (10.38)	2100	2.2	0.472 (0.287)	14.96 (2.95)	187 (86)	74 (23)	28.71 (97.22)
				7.5 mph (12.0 km/h)					
168.82 (125.89)	8980 (39.94)	7.05 (11.35)	2098	2.0	0.476 (0.289)	14.84 (2.92)	187 (86)	74 (24)	28.72 (97.26)
				8.1 mph (13.0 km/h)					
170.61 (127.22)	8358 (37.18)	7.66 (12.32)	2097	1.8	0.473 (0.288)	14.91 (2.94)	186 (86)	75 (24)	28.71 (97.22)
				8.7 mph (14.0 km/h)					
173.12 (129.10)	7862 (34.97)	8.26 (13.29)	2099	1.7	0.466 (0.283)	15.15 (2.98)	188 (87)	76 (25)	28.71 (97.22)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

Note: The performance figures on this report apply to tractors with chassis serial numbers ZARH06086 and higher.

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 primary fuel filter was maintained at 103°F (39°C). The performance results on this summary were taken from OECD tests conducted under the Code 2 Test Code Procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1995**, Nebraska Summary 770, January 13, 2012.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
P.J. Jasa
Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load at 4.6 mph (7.5 km/h) engine speed - 2220 rpm	66.5	66.4
At no load at 4.6 mph (7.5 km/h) engine speed - 1070 rpm	62.4	62.2
Bystander		84.4

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi (kPa)	Four 520/85R42; **, 10(70)	Two 520/85R42; **, 16(110)
Ballast - Duals (total)	1950 lb (885 kg)	None
- Cast Iron (total)	4165 lb (1889 kg)	None
Front Tires - No., size, ply & psi (kPa)	Two 420/90R30; **, 18(125)	Two 420/90R30; **, 17(115)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	600 lb (272 kg)	None
Height of Drawbar	21.5 in (545 mm)	21.5 in (545 mm)
Static Weight with operator - Rear	17420 lb (7902 kg)	11600 lb (5262 kg)
- Front	9950 lb (4513 kg)	9055 lb (4107 kg)
- Total	27370 lb (12415 kg)	20655 lb (9369 kg)

DRAWBAR PERFORMANCE@1750 Engine rpm
UNBALLASTED - FRONT DRIVE ENGAGED
MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

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 (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
3.2 mph (5.1 km/h)									
146.37 (109.14)	19214 (85.47)	2.86 (4.60)	2157	9.0	0.545 (0.331)	12.95 (2.55)	190 (88)	81 (27)	28.63 (96.95)
3.7 mph (6.0 km/h)									
161.44 (120.38)	18377 (81.74)	3.30 (5.30)	2069	7.0	0.505 (0.307)	13.96 (2.75)	190 (88)	83 (28)	28.64 (96.99)
4.2 mph (6.8 km/h)									
167.74 (125.08)	17698 (78.72)	3.56 (5.72)	1950	6.1	0.492 (0.300)	14.33 (2.82)	190 (88)	84 (29)	28.65 (97.02)
4.7 mph (7.5 km/h)									
173.37 (129.28)	17128 (76.19)	3.80 (6.11)	1874	5.4	0.478 (0.291)	14.75 (2.91)	191 (88)	85 (29)	28.65 (97.02)
5.0 mph (8.0 km/h)									
175.71 (131.03)	16583 (73.76)	3.97 (6.39)	1833	5.1	0.472 (0.287)	14.94 (2.94)	192 (89)	86 (30)	28.65 (97.02)
5.6 mph (9.0 km/h)									
181.22 (135.13)	15731 (69.97)	4.32 (6.95)	1751	4.1	0.455 (0.277)	15.49 (3.05)	191 (88)	78 (26)	28.63 (96.95)
6.2 mph (10.0 km/h)									
184.90 (137.88)	14389 (64.00)	4.82 (7.76)	1750	3.6	0.447 (0.272)	15.80 (3.11)	190 (88)	74 (23)	28.71 (97.22)
6.8 mph (11.0 km/h)									
185.97 (138.67)	13072 (58.15)	5.34 (8.59)	1750	3.0	0.445 (0.271)	15.85 (3.12)	190 (88)	74 (23)	28.72 (97.26)
7.5 mph (12.0 km/h)									
186.06 (138.74)	11940 (53.11)	5.85 (9.41)	1750	2.6	0.445 (0.271)	15.85 (3.12)	190 (88)	74 (24)	28.71 (97.22)
8.1 mph (13.0 km/h)									
189.09 (141.00)	11192 (49.78)	6.34 (10.20)	1751	2.5	0.439 (0.267)	16.08 (3.17)	191 (88)	75 (24)	28.72 (97.26)
8.7 mph (14.0 km/h)									
191.51 (142.81)	10502 (46.71)	6.84 (11.01)	1748	2.3	0.432 (0.263)	16.32 (3.21)	191 (88)	77 (25)	28.71 (97.22)
9.3 mph (15.0 km/h)									
192.74 (143.72)	9853 (43.83)	7.34 (11.80)	1749	2.1	0.429 (0.261)	16.43 (3.24)	191 (88)	77 (25)	28.71 (97.22)
9.9 mph (16.0 km/h)									
193.28 (144.13)	9231 (41.06)	7.86 (12.64)	1751	2.0	0.429 (0.261)	16.44 (3.24)	192 (89)	77 (25)	28.71 (97.22)
10.6 mph (17.0 km/h)									
193.04 (143.95)	8658 (38.51)	8.36 (13.45)	1752	1.8	0.428 (0.261)	16.48 (3.25)	194 (90)	78 (26)	28.71 (97.22)

DRAWBAR PERFORMANCE@1750 Engine rpm

BALLASTED - FRONT DRIVE ENGAGED MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/lp.hr (kg/kW.h)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
					2.4 mph (3.8 km/h)				
136.79 (102.00)	24775 (110.20)	2.07 (3.33)	2081	7.6	0.592 (0.360)	11.93 (2.35)	189 (87)	79 (26)	28.60 (96.85)
					3.1 mph (5.0 km/h)				
158.14 (117.92)	23700 (105.42)	2.50 (4.02)	1884	6.2	0.528 (0.321)	13.37 (2.63)	191 (88)	79 (26)	28.60 (96.85)
					3.7 mph (6.0 km/h)				
170.01 (126.78)	22580 (100.44)	2.83 (4.55)	1750	5.1	0.487 (0.296)	14.49 (2.86)	191 (88)	80 (27)	28.60 (96.85)
					4.3 mph (7.0 km/h)				
174.18 (129.89)	19474 (86.62)	3.36 (5.40)	1750	3.5	0.475 (0.289)	14.84 (2.92)	194 (90)	80 (27)	28.60 (96.85)
					5.0 mph (8.0 km/h)				
180.85 (134.86)	17548 (78.06)	3.87 (6.22)	1750	2.8	0.458 (0.278)	15.41 (3.04)	192 (89)	81 (27)	28.60 (96.85)
					5.6 mph (9.0 km/h)				
182.80 (136.31)	15724 (69.94)	4.36 (7.02)	1749	2.4	0.454 (0.276)	15.54 (3.06)	193 (89)	82 (28)	28.60 (96.85)
					6.2 mph (10.0 km/h)				
182.87 (136.37)	14130 (62.85)	4.86 (7.81)	1751	2.2	0.454 (0.276)	15.55 (3.06)	191 (88)	82 (28)	28.60 (96.85)
					6.8 mph (11.0 km/h)				
184.28 (137.42)	12897 (57.37)	5.36 (8.63)	1750	2.0	0.450 (0.274)	15.67 (3.09)	193 (89)	83 (28)	28.60 (96.85)
					7.5 mph (12.0 km/h)				
183.64 (136.94)	11760 (52.31)	5.86 (9.42)	1751	1.8	0.451 (0.274)	15.65 (3.08)	196 (91)	83 (28)	28.60 (96.85)
					8.1 mph (13.0 km/h)				
186.22 (138.86)	10998 (48.92)	6.35 (10.21)	1751	1.7	0.446 (0.271)	15.84 (3.12)	191 (88)	84 (29)	28.60 (96.85)
					8.7 mph (14.0 km/h)				
187.86 (140.08)	10281 (45.73)	6.85 (11.02)	1750	1.6	0.442 (0.269)	15.98 (3.15)	193 (89)	84 (29)	28.59 (96.82)
					9.3 mph (15.0 km/h)				
187.98 (140.18)	9595 (42.68)	7.35 (11.83)	1751	1.5	0.441 (0.269)	15.99 (3.15)	196 (91)	85 (29)	28.59 (96.82)
					9.9 mph (16.0 km/h)				
188.81 (140.80)	9030 (40.17)	7.84 (12.62)	1751	1.4	0.440 (0.268)	16.03 (3.16)	195 (90)	86 (30)	28.59 (96.82)
					10.6 mph (17.0 km/h)				
188.09 (140.26)	8462 (37.64)	8.34 (13.41)	1750	1.3	0.441 (0.269)	15.98 (3.15)	198 (92)	86 (30)	28.58 (96.78)

HYDRAULIC PERFORMANCE

CATEGORY: I1IN

Quick Attach: No/Yes

OECD Static test

Maximum force exerted through whole range: 12204 lbs (54.3 kN)(100 mm cylinders)
14269 lbs (63.5 kN)(110 mm cylinders w/QA)

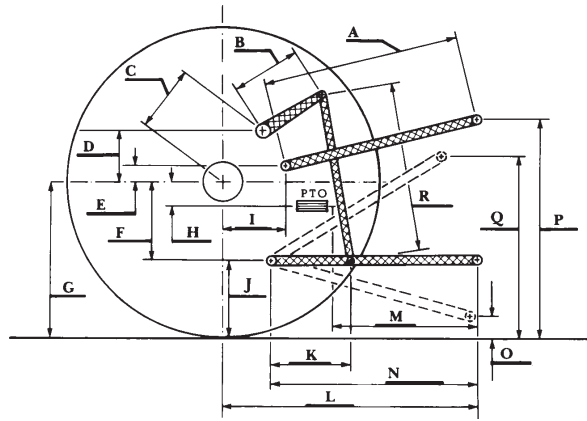
two outlet sets combined

- i) Sustained pressure at compensator cutoff: 2853 psi (197 bar)
- ii) Pump delivery rate at minimum pressure and 2200 engine rpm: 46.0 GPM(174.1 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 44.0 GPM(166.6 l/min)
Delivery pressure: 2492 psi (172 bar)
Power: 64.0 HP (47.7 kW)

single outlet set

- i) Sustained pressure at compensator cutoff: 2855 psi (197 bar)
- ii) Pump delivery rate at minimum pressure and 2200 engine rpm: 40.4 GPM(152.9 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 38.9 GPM(147.2 l/min)
Delivery pressure: 2074 psi (143 bar)
Power: 47.0 HP (35.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	100 mm cylinders		110 mm cylinders w/QC	
	inch	mm	inch	mm
A	29.5	750	26.8	680
B	17.9	454	17.9	454
C	15.1	383	15.1	383
D	14.6	372	14.6	372
E	10.9	277	10.9	277
F	10.6	270	10.6	270
G	36.4	925	36.4	925
H	2.8	71	2.8	71
I	19.7	500	19.7	500
J	25.8	655	25.8	655
K	26.9	682	26.9	682
L	48.2	1224	48.1	1223
*L'	--	--	53.1	1349
M	22.4	570	22.4	570
N	38.3	974	38.3	974
O	9.0	229	9.1	230
P	47.8	1215	52.6	1335
Q	40.2	1022	37.7	957
R	36.6	930	37.7	957

*L' to Quick Attach ends



CASE IH MAGNUM 225 DIESEL