

NEBRASKA OECD TRACTOR TEST 1992—SUMMARY 767

CASE IH MAGNUM 180 DIESEL

19 SPEED

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)						
173.54 (129.41)	2099	9.42 (35.65)	0.383 (0.233)	18.43 (3.63)	0.56 (2.13)	
Standard Power Take-off Speed (1000 rpm)						
185.77 (138.53)	1893	9.64 (36.49)	0.366 (0.223)	19.27 (3.80)	0.54 (2.04)	
Maximum Power (1 hour)						
187.92 (140.14)	1800	9.55 (36.15)	0.359 (0.218)	19.68 (3.88)	0.57 (2.14)	

VARYING POWER AND FUEL CONSUMPTION

173.54 (129.41)	2099	9.42 (35.65)	0.383 (0.233)	18.43 (3.63)	0.56 (2.13)	Air temperature
151.51 (112.98)	2159	8.53 (32.28)	0.397 (0.242)	17.77 (3.50)	0.49 (1.84)	74°F (23°C)
114.64 (85.49)	2174	6.89 (26.09)	0.424 (0.258)	16.64 (3.28)	0.33 (1.24)	Relative humidity
76.82 (57.28)	2188	5.34 (20.20)	0.490 (0.298)	14.39 (2.84)	0.19 (0.73)	63%
38.79 (28.92)	2202	3.61 (13.68)	0.657 (0.400)	10.73 (2.11)	0.10 (0.37)	Barometer
4.02 (3.00)	2215	2.14 (8.08)	3.752 (2.282)	1.88 (0.37)	0.01 (0.02)	28.53" Hg (96.61 kPa)

Maximum torque - 599 lb.-ft. (812 Nm) at 1450 rpm
 Maximum torque rise - 38.0%
 Torque rise at 1700 engine rpm - 32%
 Power increase at 1800 engine rpm - 8.3%

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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—9th Gear									
151.22 (112.76)	12071 (53.69)	4.70 (7.56)	2101	3.1	0.443 (0.270)	15.92 (3.14)	187 (86)	63 (17)	28.87 (97.77)
75% of Pull at Maximum Power—9th Gear									
115.79 (86.34)	9062 (40.31)	4.79 (7.71)	2124	2.1	0.471 (0.287)	14.97 (2.95)	187 (86)	67 (19)	28.82 (97.60)
50% of Pull at Maximum Power—9th Gear									
78.67 (58.66)	6042 (26.88)	4.89 (7.86)	2148	1.3	0.541 (0.329)	13.03 (2.57)	187 (86)	67 (19)	28.82 (97.60)
75% of Pull at Reduced Engine Speed—11th Gear									
115.98 (86.49)	9006 (40.06)	4.83 (7.77)	1507	2.1	0.419 (0.255)	16.85 (3.32)	184 (84)	68 (20)	28.80 (97.53)
50% of Pull at Reduced Engine Speed—11th Gear									
78.46 (58.51)	6054 (26.93)	4.86 (7.82)	1505	1.3	0.460 (0.280)	15.36 (3.02)	183 (84)	67 (19)	28.81 (97.56)

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

Dates of tests: May 24 - June 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)** 32% 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 Nexplore 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.** *000754950* **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: 62.8 - 67.2 lb/h (28.5 - 30.5 kg/h) **High idle:** 2160 - 2210 rpm, 2190 - 2240 rpm (PTO engaged) **Turbo boost:** nominal 23.2 - 26.1 psi (160 - 180 kPa) as measured 24.7 psi (170 kPa)

CHASSIS: Type front wheel assist **Serial No.** *ZARH06386* **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** selective gear fixed ratio with full range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.15 (1.85) second 1.37 (2.20) third 1.65 (2.65) fourth 1.97 (3.17) fifth 2.34 (3.77) sixth 2.80 (4.50) seventh 3.32 (5.35) eighth 3.98 (6.40) ninth 4.78 (7.69) tenth 5.71 (9.19) eleventh 6.80 (10.94) twelfth 8.12 (13.06) thirteenth 9.61 (15.46) fourteenth 11.48 (18.48) fifteenth 13.79 (22.20) sixteenth 16.49 (26.54) seventeenth 19.64 (31.60) eighteenth 24.56 (39.52) nineteenth 26.22 (42.20) (1850 engine rpm) reverse 2.54 (4.08), 3.03 (4.88), 3.65 (5.87), 4.36 (7.01), 5.19 (8.35), 6.19 (9.96)

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	Air dry bulb	Barom. inch Hg (kPa)	
6th Gear									
123.62 (92.18)	17960 (79.89)	2.59 (4.16)	2105	9.2	0.493 (0.300)	14.30 (2.82)	188 (87)	68 (20)	28.78 (97.46)
7th Gear									
140.78 (104.98)	16849 (74.95)	3.14 (5.05)	2101	7.1	0.462 (0.281)	15.26 (3.01)	187 (86)	61 (16)	28.87 (97.77)
8th Gear									
149.95 (111.82)	14580 (64.85)	3.86 (6.20)	2101	4.4	0.448 (0.272)	15.76 (3.10)	188 (87)	61 (16)	28.87 (97.77)
9th Gear									
151.22 (112.76)	12071 (53.69)	4.70 (7.56)	2101	3.1	0.443 (0.270)	15.92 (3.14)	187 (86)	63 (17)	28.87 (97.77)
10th Gear									
150.68 (112.36)	9997 (44.47)	5.65 (9.09)	2101	2.4	0.442 (0.269)	15.98 (3.15)	188 (86)	65 (18)	28.87 (97.77)
11th Gear									
149.72 (111.64)	8299 (36.92)	6.77 (10.89)	2102	2.0	0.439 (0.267)	16.08 (3.17)	188 (86)	65 (18)	28.87 (97.77)
12th Gear									
147.45 (109.95)	6829 (30.37)	8.10 (13.03)	2098	1.6	0.451 (0.275)	15.64 (3.08)	188 (87)	65 (18)	28.87 (97.77)

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** 18850 lb (8550 kg)

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 104°F (40°C). The pull in 6th gear was limited to avoid excessive tractor power hop. 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. **1992**, Nebraska Summary 767, 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 in 9th gear	67.1	67.1
Bystander in 18th gear		83.0

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires -No., size, ply & psi (kPa)	Four 520/85R42;**,8(55)	Two 520/85R42;**,16(110)
Ballast - Duals (total)	1950 lb (885 kg)	None
- Test Equip (total)	75 lb (34 kg)	None
Front Tires -No., size, ply & psi (kPa)	Two 420/90R30;**,15(105)	Two 420/90R30;**,15(105)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	None	None
Height of Drawbar	19.5 in (495 mm)	19.0 in (485 mm)
Static Weight with operator - Rear	13200 lb (5987 kg)	11140 lb (5053 kg)
- Front	7850 lb (3561 kg)	7885 lb (3577 kg)
- Total	21050 lb (9548 kg)	19025 lb (8630 kg)

DRAWBAR PERFORMANCE AT 1800 ENGINE RPM
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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
123.86 (92.36)	18049 (80.28)	2.58 (4.14)	2105	9.4	0.498 (0.303)	14.17 (2.79)	188 (87)	68 (20)	28.78 (97.46)
7th Gear									
141.17 (105.27)	16956 (75.42)	3.13 (5.03)	2101	7.5	0.463 (0.282)	15.24 (3.00)	188 (86)	61 (16)	28.87 (97.77)
8th Gear									
153.98 (114.82)	16224 (72.17)	3.56 (5.73)	1972	6.0	0.443 (0.269)	15.95 (3.14)	187 (86)	62 (17)	28.87 (97.77)
9th Gear									
161.18 (120.19)	15310 (68.10)	3.95 (6.36)	1801	4.9	0.422 (0.257)	16.71 (3.29)	187 (86)	64 (18)	28.87 (97.77)
10th Gear									
162.03 (120.83)	12679 (56.40)	4.79 (7.71)	1801	3.3	0.418 (0.254)	16.88 (3.32)	186 (86)	65 (18)	28.87 (97.77)
11th Gear									
164.36 (122.56)	10735 (47.75)	5.75 (9.25)	1801	2.6	0.411 (0.250)	17.18 (3.38)	187 (86)	65 (18)	28.87 (97.77)
12th Gear									
162.36 (121.07)	8798 (39.14)	6.93 (11.15)	1801	2.0	0.415 (0.252)	16.99 (3.35)	187 (86)	66 (19)	28.87 (97.77)
13th Gear									
165.43 (123.36)	7562 (33.64)	8.21 (13.20)	1801	1.7	0.408 (0.248)	17.32 (3.41)	188 (86)	66 (19)	28.87 (97.77)

DRAWBAR PERFORMANCE AT 1800 ENGINE RPM
BALLASTED - 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
141.95 (105.85)	20282 (90.22)	2.63 (4.22)	2100	7.1	0.470 (0.286)	15.01 (2.96)	188 (86)	68 (20)	29.10 (98.54)
7th Gear									
153.04 (114.12)	19063 (84.79)	3.01 (4.84)	2006	6.2	0.446 (0.271)	15.82 (3.12)	187 (86)	59 (15)	29.09 (98.51)
8th Gear									
161.77 (120.63)	18414 (81.91)	3.30 (5.30)	1820	5.3	0.423 (0.258)	16.67 (3.28)	186 (86)	60 (16)	29.09 (98.51)
9th Gear									
164.05 (122.33)	15340 (68.23)	4.01 (6.45)	1801	3.1	0.415 (0.253)	17.00 (3.35)	186 (86)	62 (17)	29.09 (98.51)
10th Gear									
162.47 (121.15)	12617 (56.12)	4.83 (7.77)	1800	2.3	0.416 (0.253)	16.97 (3.34)	186 (86)	63 (17)	29.08 (98.48)
11th Gear									
164.70 (122.81)	10708 (47.63)	5.77 (9.28)	1799	1.9	0.412 (0.251)	17.12 (3.37)	186 (86)	64 (18)	29.09 (98.51)
12th Gear									
160.33 (119.56)	8688 (38.64)	6.93 (11.14)	1800	1.5	0.423 (0.257)	16.69 (3.29)	186 (86)	66 (19)	29.09 (98.51)
13th Gear									
163.86 (122.19)	7487 (33.30)	8.21 (13.21)	1799	1.3	0.417 (0.253)	16.94 (3.34)	186 (86)	67 (19)	29.09 (98.51)

HYDRAULIC PERFORMANCE

CATEGORY: IHIN

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/QC)

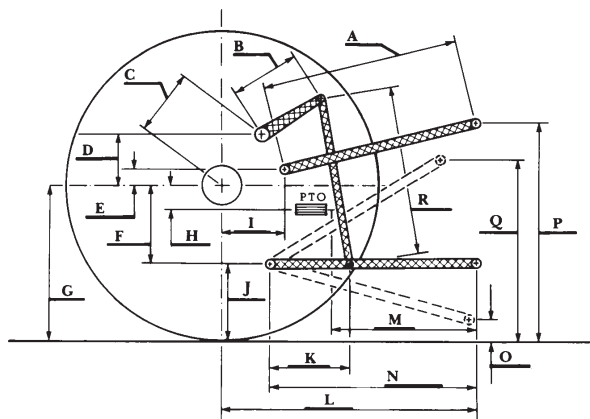
two outlet sets combined

- i) Sustained pressure at compensator cutoff: 2856 psi (197 bar)
- ii) Pump delivery rate at minimum pressure and 2200 engine rpm: 35.8 GPM (135.6 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 31.5 GPM (119.2 l/min)
- Delivery pressure: 2528 psi (174 bar)
- Power: 46.4 HP (34.6 kW)

single outlet set

- i) Sustained pressure at compensator cutoff: 2857 psi (197 bar)
- ii) Pump delivery rate at minimum pressure and 2200 engine rpm: 32.4 GPM (122.7 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 28.8 GPM (109.1 l/min)
- Delivery pressure: 2385 psi (164 bar)
- Power: 40.1 HP (29.9 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 180 DIESEL