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2012

## Nebraska Summary: S851 Case-IH Maxxum 115

Nebraska Tractor Test Laboratory

University of Nebraska-Lincoln, tractortestlab@unl.edu

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# SUMMARY OF OECD TEST 2700—NEBRASKA SUMMARY 851

## CASE IH MAXXUM 115 DIESEL

### 24 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1109 rpm)</b>						
108.1 (80.6)	2100	6.50 (24.62)	0.419 (0.255)	16.62 (3.27)	0.29 (1.11)	
<b>Standard Power Take-off Speed (1000 rpm)</b>						
112.8 (84.1)	1893	6.39 (24.19)	0.395 (0.240)	17.66 (3.48)	0.29 (1.10)	
<b>Maximum Power (1 hour)</b>						
113.0 (84.3)	1800	6.30 (23.86)	0.388 (0.236)	17.94 (3.54)	0.28 (1.05)	

#### VARYING POWER AND FUEL CONSUMPTION

108.1 (80.6)	2100	6.50 (24.62)	0.419 (0.255)	16.62 (3.27)	0.29 (1.11)	Air temperature
97.9 (73.0)	2238	6.29 (23.80)	0.447 (0.272)	15.57 (3.07)	0.27 (1.02)	68°F (20°C)
74.2 (55.3)	2256	5.26 (19.90)	0.494 (0.301)	14.10 (2.78)	0.22 (0.83)	Relative humidity
49.8 (37.1)	2273	4.21 (15.93)	0.590 (0.359)	11.82 (2.33)	0.15 (0.58)	29%
25.2 (18.8)	2292	3.15 (11.94)	0.874 (0.532)	7.99 (1.57)	0.07 (0.28)	Barometer
---	2317	2.37 (8.97)	---	---	---	29.3" Hg (99.1 kPa)

Maximum torque - 347 lb.-ft. (470 Nm) at 1500 rpm

Maximum torque rise - 28.1%

Torque rise at 1700 engine rpm - 24%

Power increase at 1800 engine rpm - 5%

#### 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)
<b>Maximum Power—12th (2MR) Gear</b>									
87.3 (65.1)	7645 (34.0)	4.28 (6.89)	2100	4.4	0.485 (0.295)	14.37 (2.83)	187 (86)	84 (29)	29.0 (98.1)
<b>75% of Pull at Maximum Power—12th (2MR) Gear</b>									
70.8 (52.8)	5735 (25.5)	4.63 (7.46)	2250	3.4	0.572 (0.348)	12.18 (2.40)	187 (86)	84 (29)	29.0 (98.1)
<b>50% of Pull at Maximum Power—12th (2MR) Gear</b>									
48.1 (35.9)	3815 (17.0)	4.73 (7.61)	2269	2.2	0.654 (0.398)	10.66 (2.10)	189 (87)	84 (29)	29.0 (98.1)
<b>75% of Pull at Reduced Engine Speed—13th (3MT) Gear</b>									
70.5 (52.6)	5710 (25.4)	4.63 (7.45)	1924	3.3	0.522 (0.318)	13.35 (2.63)	185 (85)	84 (29)	29.0 (98.1)
<b>50% of Pull at Reduced Engine Speed—13th (3MT) Gear</b>									
48.3 (36.0)	3820 (17.0)	4.74 (7.62)	1947	2.2	0.627 (0.381)	11.12 (2.19)	185 (85)	84 (29)	29.0 (98.1)

**Location of tests:** Istituto per le Macchine Agricole e Movimento Terra 73, Strada delle Cacce 10135 Torino Italy

**Dates of tests:** May, 2012.

**Manufacturer:** CNH Europe Holding S.A. 24, Boulevard Royal L-2449 Luxembourg

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.837 **Fuel weight** 6.97 lbs/gal (0.835 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.08 lbs/gal (1.091 kg/l) **Oil SAE 10W30 API service classification** CH-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

**ENGINE:** Make CNH Diesel **Type** six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment **Serial No.** 882756 **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** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** ZBBE01001 **Tread width** rear 56.3" (1430 mm) to 84.0" (2134 mm) front 61.4" (1560 mm) to 88.8" (2256 mm) **Wheelbase** 95.3" (2627 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (8) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.98 (1.58) second 1.20 (1.93) third 1.44 (2.31) fourth 1.75 (2.82) fifth 2.05 (3.30) sixth 2.46 (3.96) seventh 2.50 (4.03) eighth 2.98 (4.80) ninth 3.01 (4.84) tenth 3.39 (5.45) eleventh 3.64 (5.86) twelfth 4.41 (7.09) thirteenth 5.15 (8.28) fourteenth 5.95 (9.58) fifteenth 6.29 (10.12) sixteenth 7.28 (11.72) seventeenth 7.48 (12.04) eighteenth 8.72 (14.03) nineteenth 9.15 (14.73) twentieth 10.66 (17.16) twenty-first 12.45 (20.04) twenty-second 15.23 (24.51) twenty-third 18.12 (29.16) twenty-fourth 22.16 (35.67) reverse 1.01 (1.63), 1.24 (1.99), 1.49 (2.39), 1.81 (2.92), 2.12 (3.41), 2.54 (4.09), 2.59 (4.17), 3.08 (4.96), 3.11 (5.00), 3.72 (5.99), 3.76 (6.06), 4.55 (7.33), 5.31 (8.56), 6.16 (9.91), 6.51 (10.47), 7.53 (12.12), 7.74 (12.46), 9.01 (14.51), 9.46 (15.23), 11.03 (17.75), 12.87 (20.72), 15.75 (25.35), 18.73 (30.15), 22.92 (36.88)

**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. <sup>o</sup> F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
9th(1MR) Gear									
77.1 (57.5)	10655 (47.4)	2.71 (4.37)	2107	13.8	0.549 (0.334)	12.69 (2.50)	187 (86)	77 (25)	29.0 (98.2)
10th(2MT) Gear									
85.7 (63.9)	10430 (46.4)	3.08 (4.96)	2052	8.6	0.501 (0.305)	13.91 (2.74)	185 (85)	77 (25)	29.0 (98.2)
11th(4LR) Gear									
85.8 (64.0)	9780 (43.5)	3.29 (5.30)	2031	8.1	0.503 (0.306)	13.86 (2.73)	187 (86)	84 (29)	29.0 (98.2)
12th(2MR) Gear									
90.3 (67.3)	8720 (38.8)	3.88 (6.24)	1917	5.2	0.472 (0.287)	14.77 (2.91)	185 (85)	77 (25)	29.0 (98.2)
13th(3MT) Gear									
88.9 (66.3)	7780 (34.6)	4.29 (6.90)	1800	4.4	0.472 (0.287)	14.77 (2.91)	185 (85)	77 (25)	29.0 (98.2)
14th(1HT) Gear									
90.0 (67.1)	6765 (30.1)	4.99 (8.02)	1799	3.9	0.444 (0.270)	15.68 (3.09)	185 (85)	79 (26)	29.0 (98.2)
15th(3MR) Gear									
91.1 (67.9)	6465 (28.7)	5.28 (8.50)	1800	3.6	0.439 (0.267)	15.89 (3.13)	187 (86)	79 (26)	29.0 (98.2)
16th(1HR) Gear									
90.5 (67.5)	5530 (24.6)	6.14 (9.88)	1800	3.2	0.465 (0.283)	14.97 (2.95)	185 (85)	81 (27)	29.0 (98.2)
17th(4MT) Gear									
89.8 (67.0)	5330 (23.7)	6.32 (10.17)	1800	3.0	0.464 (0.282)	15.02 (2.96)	185 (85)	82 (28)	29.0 (98.2)
18th(2HT) Gear									
87.8 (65.5)	4450 (19.8)	7.40 (11.91)	1800	2.6	0.472 (0.287)	14.77 (2.91)	185 (85)	84 (29)	29.0 (98.2)
19th(4MR) Gear									
89.7 (66.9)	4315 (19.2)	7.80 (12.54)	1804	2.5	0.467 (0.284)	14.92 (2.94)	185 (85)	86 (30)	29.0 (98.2)
20th(2HR) Gear									
88.2 (65.8)	3640 (16.2)	9.09 (14.62)	1800	2.1	0.485 (0.295)	14.37 (2.83)	185 (85)	88 (31)	29.0 (98.2)

**Clutch** wet disc hydraulically actuated by foot pedal  
**Brakes** wet disc hydraulically actuated by two foot pedals that can be locked together  
**Steering** hydrostatic  
**Power take-off** 540 rpm at 1593 engine rpm or 1000 rpm at 1894 engine rpm  
**Unladen tractor mass** 12435 lb (5640 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments

**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 three point lift claim of 6900 lbs (3130 kg), with 80 mm lift cylinders. 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. **2700**, Nebraska Summary 851, January 17, 2013.

Roger M. Hoy  
 Director

M.R. Riley  
 P.J. Jasa  
 J.D. Luck  
 Board of Tractor Test Engineers

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 7th (7B) gear	70.3	70.1
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; \*\*, 12 (80)  
 Two 480/65R28; \*\*, 12 (80)  
 15.9 in (405 mm)  
 7770 lb (3525 kg)  
 4830 lb (2190 kg)  
 12600 lb (5715 kg)

This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears for road transport applications. The system is also activated when power transfer through the PTO exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An override system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of this PTO output test are presented below.

### 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)	
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>						
<b>Rated Engine Speed—(PTO speed—1109 rpm)</b>						
127.1 (94.8)	2100	7.33 (27.74)	0.401 (0.244)	17.35 (3.42)	0.31 (1.17)	
<b>Standard Power Take-off Speed (1000 rpm)</b>						
132.2 (98.6)	1893	7.27 (27.52)	0.383 (0.233)	18.19 (3.58)	0.32 (1.20)	
<b>Maximum Power (1 hour)</b>						
136.1 (101.5)	1800	7.36 (27.84)	0.376 (0.229)	18.50 (3.64)	0.31 (1.17)	

### VARYING POWER AND FUEL CONSUMPTION

127.1 (94.8)	2100	7.33 (27.74)	0.401 (0.244)	17.35 (3.42)	0.31 (1.17)	Air temperature
114.1 (85.1)	2220	7.02 (26.57)	0.429 (0.261)	16.26 (3.20)	0.28 (1.06)	68°F (20°C)
86.6 (64.6)	2245	5.85 (22.16)	0.472 (0.287)	14.80 (2.91)	0.22 (0.84)	Relative humidity
58.3 (43.5)	2266	4.66 (17.63)	0.557 (0.339)	12.52 (2.47)	0.16 (0.61)	45%
29.4 (21.9)	2289	3.38 (12.81)	0.806 (0.490)	8.68 (1.71)	0.11 (0.42)	Barometer
---	2319	2.31 (8.73)	---	---	---	29.2" Hg (98.9 kPa)

Maximum torque - 423 lb.-ft. (573 Nm) at 1500 rpm  
 Maximum torque rise - 32.9%  
 Torque rise at 1700 engine rpm - 27%  
 Power increase at 1800 engine rpm - 7%

## HYDRAULIC PERFORMANCE

CATEGORY: II

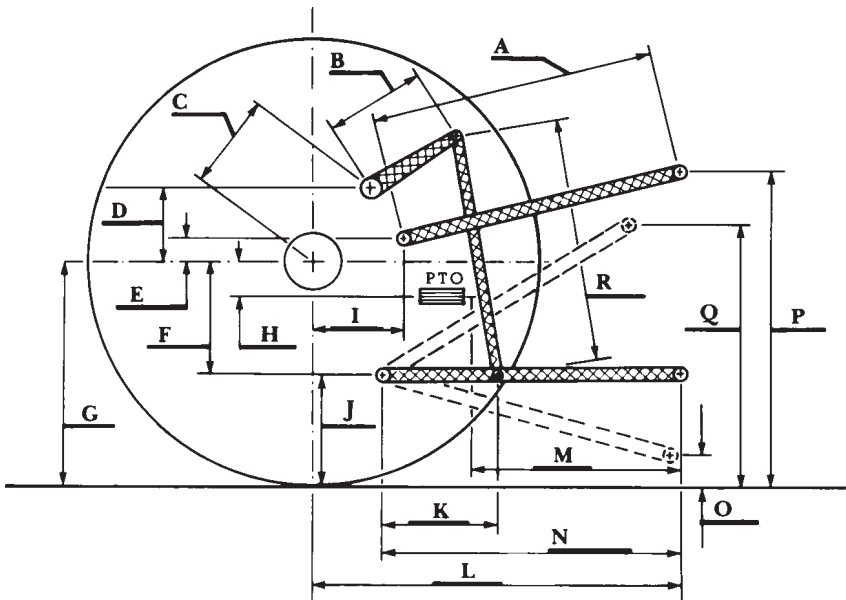
Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 6720 lbs (29.9 kN) (80 mm lift cylinders)  
7980 lbs (35.5 kN) (90 mm lift cylinders)

i) Sustained pressure of the open relief valve: 3000 psi (207 bar)  
ii) Pump delivery rate at minimum pressure: 28.5 GPM (78.5 l/min)

iii) Pump delivery rate at maximum  
hydraulic power: 18.8 GPM (71.0 l/min)  
Delivery pressure: 2395 psi (165 bar)  
Power: 26.2 HP (19.5 kW)



**HITCH DIMENSIONS AS TESTED—NO LOAD**

	inch	mm
A	29.9	760
B	12.2	310
C	15.6	395
D	14.6	370
E	7.9	200
F	9.3	235
G	32.5	825
H	1.0	25
I	16.9	430
J	23.2	590
K	19.9	505
L	46.4	1178
M	23.9	608
N	39.8	1010
O	7.9	200
P	47.2	1200
Q	34.3	870
R	32.5	825