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2012

Test 2018: New Holland T8.300

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 2018–SUMMARY 817

NEW HOLLAND T8.300 DIESEL

18 SPEED

POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1110 rpm)					
219.98 (164.04)	2000	12.03 (45.52)	0.385 (0.234)	18.29 (3.60)	0.80 (3.03)
Standard Power Take-off Speed (998 rpm)					
275.83 (205.69)	1800	13.88 (52.53)	0.354 (0.215)	19.88 (3.92)	1.15 (4.36)
Maximum Power (1 hour)					
275.83 (205.69)	1800	13.88 (52.53)	0.354 (0.215)	19.88 (3.92)	1.15 (4.36)

VARYING POWER AND FUEL CONSUMPTION

219.98 (164.04)	2000	12.03 (45.52)	0.385 (0.234)	18.29 (3.60)	0.80 (3.03)	Air temperature
195.20 (145.56)	2094	11.17 (42.29)	0.403 (0.245)	17.47 (3.44)	0.68 (2.56)	74°F (23°C)
149.05 (111.15)	2125	8.90 (33.68)	0.420 (0.255)	16.75 (3.30)	0.53 (2.01)	Relative humidity
100.00 (74.57)	2156	6.48 (24.51)	0.456 (0.277)	15.44 (3.04)	0.29 (1.11)	24%
51.00 (38.03)	2185	4.73 (17.91)	0.653 (0.397)	10.78 (2.12)	0.11 (0.43)	Barometer
2.50 (1.86)	2215	2.77 (10.48)	7.792 (4.740)	0.90 (0.18)	0.01 (0.03)	28.97" Hg (98.10 kPa)

Maximum torque - 875 lb.-ft. (1186 Nm) at 1551 rpm

Maximum torque rise - 51.6%

Torque rise at 1599 engine rpm - 49%

Power increase at 1800 engine rpm - 25.2%

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									
191.67 (142.93)	16434 (73.10)	4.38 (7.04)	2001	3.2	0.443 (0.269)	15.88 (3.13)	184 (84)	52 (11)	29.03 (98.31)
75% of Pull at Maximum Power—7th Gear									
153.31 (114.32)	12311 (54.76)	4.67 (7.52)	2112	2.0	0.482 (0.293)	14.59 (2.87)	184 (84)	58 (14)	29.00 (98.21)
50% of Pull at Maximum Power—7th Gear									
104.22 (77.72)	8211 (36.52)	4.76 (7.66)	2135	1.2	0.544 (0.331)	12.94 (2.55)	183 (84)	59 (15)	29.00 (98.21)
75% of Pull at Reduced Engine Speed—10th Gear									
153.64 (114.57)	12274 (54.60)	4.70 (7.56)	1399	2.0	0.412 (0.250)	17.09 (3.37)	184 (84)	59 (15)	28.98 (98.14)
50% of Pull at Reduced Engine Speed—10th Gear									
104.47 (77.90)	8187 (36.42)	4.79 (7.70)	1417	1.2	0.443 (0.270)	15.88 (3.13)	183 (84)	59 (15)	28.98 (98.14)

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

Dates of tests: April 6 - 18, 2012

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)** 0.8448 **Fuel weight** 7.034 lbs/gal (0.843 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** New Holland Ambra Mastertran fluid **Front axle lubricant** SAE 85W-140 API GL-5 **Total time engine was operated:** 20.5 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.** 11H00021486 **Crankshaft** lengthwise **Rated engine speed** 2000 **Bore and stroke** 4.606" x 5.315" (117.0 mm x 135.0 mm) **Compression ratio** 15.9 to 1 **Displacement** 531 cu in (8704 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** thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 82.1 - 87.1 lb/h (37.2 - 39.5 kg/h) **High idle:** 2200-2250 rpm **Turbo boost:** nominal 20.3 - 24.7 psi (140 - 170 kPa) as measured 22.7 psi (156 kPa)

CHASSIS: Type front wheel assist **Serial No.** *ZCRC02440* **Tread width** rear 64.0" (1626 mm) to 129.0" (3277 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 136.0" (3454 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** 540 rpm at 1808 engine rpm or 1000 rpm at 1803 engine rpm **Unladen tractor mass** 23180 lb (10514 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	Air dry bulb	Barom. inch Hg (kPa)	
5th Gear									
171.06 (127.56)	22126 (98.42)	2.90 (4.66)	1998	13.9	0.505 (0.307)	13.94 (2.75)	183 (84)	42 (5)	29.01 (98.24)
6th Gear									
185.28 (138.16)	18811 (83.67)	3.69 (5.94)	2000	4.5	0.462 (0.281)	15.22 (3.00)	183 (84)	44 (7)	29.00 (98.21)
7th Gear									
191.67 (142.93)	16434 (73.10)	4.38 (7.04)	2001	3.2	0.443 (0.269)	15.88 (3.13)	184 (84)	52 (11)	29.03 (98.31)
8th Gear									
191.06 (142.47)	14185 (63.10)	5.05 (8.13)	2001	2.4	0.446 (0.271)	15.78 (3.11)	184 (84)	51 (10)	29.02 (98.27)
9th Gear									
190.23 (141.85)	12190 (54.22)	5.85 (9.41)	2001	2.0	0.448 (0.273)	15.70 (3.09)	186 (85)	55 (13)	29.03 (98.31)
10th Gear									
186.60 (139.14)	10387 (46.20)	6.74 (10.85)	2000	1.6	0.456 (0.277)	15.42 (3.04)	186 (85)	55 (13)	29.03 (98.31)
11th Gear									
185.13 (138.05)	8955 (39.83)	7.76 (12.48)	2001	1.3	0.460 (0.280)	15.30 (3.01)	187 (86)	56 (13)	29.01 (98.24)
12th Gear									
180.78 (134.80)	7600 (33.80)	8.92 (14.36)	1999	1.0	0.472 (0.287)	14.90 (2.94)	185 (85)	57 (14)	29.01 (98.24)

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 primary fuel filter was maintained at 104°F (40°C). This tractor did not meet the manufacturer's 3 point lift claim of 14900 lbs (6758 kg). The manufacturer's 3 point hitch lift claim of 16550 lbs (7507 kg), with lift cylinders 1 x 95 mm and 1 x 105 mm, was not verified. 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. **2018**, Nebraska Summary 817, May 17, 2012.

Roger M. Hoy
Director

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

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 7th gear	67.0	67.0
Bystander in 18th gear		83.5

TIRES, BALLAST AND WEIGHT

Rear Tires -No., size, ply & psi (kPa)

Ballast - Duals (total)

- Cast Iron (total)

Front Tires -No., size, ply & psi (kPa)

Ballast - Liquid (total)

- Cast Iron (total)

Height of Drawbar

Static Weight with operator - Rear

- Front

- Total

With Ballast

Four 520/85R42;**,12(85)

1950 lb (885 kg)

3050 lb (1383 kg)

Two 420/90R30;**,20(140)

None

1320 lb (599 kg)

21.0 in (535 mm)

19555 lb (8870 kg)

10120 lb (4591 kg)

29675 lb(13461 kg)

Without Ballast

Two 520/85R42;**,18(125)

None

None

Two 420/90R30;**,18(125)

None

None

20.5 in (520 mm)

14995 lb (6802 kg)

8360 lb (3792 kg)

23355 lb(10594 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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	(°C) Air dry bulb	Barom. inch Hg (kPa)
5th Gear									
171.40 (127.81)	22158 (98.56)	2.91 (4.68)	1997	13.8	0.505 (0.307)	13.93 (2.74)	183 (84)	42 (6)	29.01 (98.24)
6th Gear									
196.98 (146.89)	21182 (94.22)	3.49 (5.62)	1962	8.2	0.464 (0.282)	15.16 (2.99)	183 (84)	46 (8)	29.01 (98.24)
7th Gear									
217.54 (162.22)	20291 (90.26)	4.02 (6.47)	1907	6.5	0.438 (0.267)	16.05 (3.16)	186 (85)	52 (11)	29.03 (98.31)
8th Gear									
232.10 (173.07)	19807 (88.11)	4.40 (7.07)	1802	5.8	0.420 (0.256)	16.74 (3.30)	186 (86)	54 (12)	29.03 (98.31)
9th Gear									
237.55 (177.14)	17169 (76.37)	5.19 (8.35)	1799	3.4	0.412 (0.251)	17.06 (3.36)	188 (86)	54 (12)	29.03 (98.31)
10th Gear									
236.59 (176.43)	14786 (65.77)	6.00 (9.66)	1803	2.7	0.413 (0.251)	17.04 (3.36)	187 (86)	54 (12)	29.03 (98.31)
11th Gear									
236.01 (175.99)	12776 (56.83)	6.93 (11.14)	1802	2.1	0.413 (0.251)	17.04 (3.36)	188 (87)	56 (13)	29.01 (98.24)
12th Gear									
232.98 (173.73)	10908 (48.52)	8.01 (12.89)	1810	1.7	0.422 (0.257)	16.67 (3.28)	189 (87)	57 (14)	29.00 (98.21)

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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F cool- ing med	(°C) Air dry bulb	Barom. inch Hg (kPa)
3rd Gear									
174.52 (130.14)	29913 (133.06)	2.19 (3.52)	1990	14.1	0.503 (0.306)	13.99 (2.76)	184 (84)	50 (10)	28.82 (97.60)
4th Gear									
197.25 (147.09)	28186 (125.38)	2.62 (4.22)	1951	8.5	0.469 (0.285)	14.99 (2.95)	184 (84)	50 (10)	28.81 (97.56)
5th Gear									
214.37 (159.86)	27423 (121.98)	2.93 (4.72)	1880	7.4	0.451 (0.275)	15.58 (3.07)	185 (85)	50 (10)	28.82 (97.60)
6th Gear									
225.43 (168.10)	25831 (114.90)	3.27 (5.26)	1801	5.9	0.431 (0.262)	16.32 (3.22)	186 (86)	51 (11)	28.82 (97.60)
7th Gear									
233.33 (173.99)	22328 (99.32)	3.92 (6.31)	1800	3.4	0.417 (0.254)	16.88 (3.33)	194 (90)	65 (18)	28.42 (96.24)
8th Gear									
236.45 (176.32)	19574 (87.07)	4.53 (7.29)	1801	2.7	0.414 (0.252)	17.00 (3.35)	194 (90)	67 (19)	28.42 (96.24)
9th Gear									
235.28 (175.44)	16795 (74.71)	5.26 (8.46)	1801	2.2	0.417 (0.254)	16.86 (3.32)	193 (89)	64 (18)	28.42 (96.24)
10th Gear									
232.72 (173.54)	14439 (64.23)	6.05 (9.73)	1800	1.9	0.418 (0.255)	16.81 (3.31)	194 (90)	65 (18)	28.41 (96.21)
11th Gear									
231.52 (172.64)	12518 (55.68)	6.94 (11.16)	1801	1.6	0.422 (0.257)	16.65 (3.28)	192 (89)	69 (21)	28.42 (96.24)
12th Gear									
226.30 (168.75)	10554 (46.95)	8.04 (12.94)	1808	1.3	0.433 (0.263)	16.26 (3.20)	198 (92)	69 (21)	28.43 (96.28)

HYDRAULIC PERFORMANCE

CATEGORY: III/IVN

Quick Attach: Yes

OECD Static test

Maximum force exerted through whole range:

14812 lbs (65.9 kN) (2 x 95 mm cylinders)

19559 lbs (87.0 kN) (2 x 115 mm cylinders)

Standard pump **High flow pump**
three outlet sets combined

i) Sustained pressure at compensator cutoff:

2877 psi (198 bar) 2899 psi (200 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

44.8 GPM (169.6 l/min) 60.0 GPM (226.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

43.4 GPM (164.3 l/min) 59.7 GPM (226.0 l/min)

Delivery pressure:

2675 psi (184 bar) 2569 psi (177 bar)

Power:

67.7 HP (50.5 kW) 89.5 hp (66.7 kW)

single outlet set

i) Sustained pressure at compensator cutoff:

2868 psi (198 bar) 2890 psi (199 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

44.0 GPM (166.4 l/min) 44.9 GPM (170.0 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

36.0 GPM (136.3 l/min) 38.7 GPM (146.6 l/min)

Delivery pressure:

2269 psi (156 bar) 2170 psi (150 bar)

Power:

47.7 HP (35.5 kW) 49.0 hp (36.6 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD

	Category III		Category IVN	
	inch	mm	inch	mm
A	25.0	634	24.0	610
B	20.5	520	20.5	520
C	22.9	581	22.9	581
D	20.7	525	20.7	525
E	10.5	266	10.5	266
F	15.7	400	15.7	400
G	36.6	930	36.6	930
H	3.5	90	3.5	90
I	20.9	530	20.9	530
J	20.9	530	20.9	530
K	30.2	768	30.2	768
L	51.0	1295	51.0	1295
*L'	55.9	1420	58.1	1475
M	25.0	636	25.0	636
N	43.1	1095	43.1	1095
O	9.0	230	9.0	230
P	47.8	1215	48.4	1230
Q	37.3	948	37.4	951
R	40.4	1025	39.6	1005

*L' to Quick Attach ends

MegaFlow system

i) Sustained pressure at compensator cutoff:

Main pump
3090 psi (213 bar)

MegaFlow pump
2935 psi (202 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

43.6 GPM (164.9 l/min) 33.5 GPM (126.7 l/min)
77.1 GPM (291.6 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

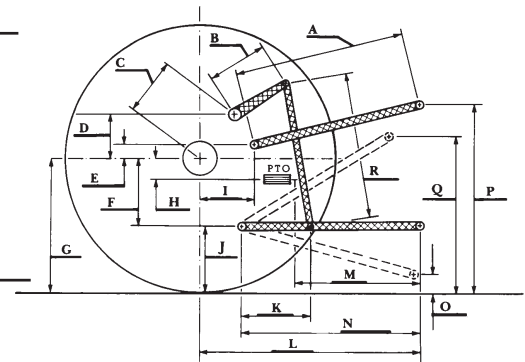
36.3 GPM (137.4 l/min) 34.5 GPM (130.7 l/min)

Delivery pressure:

2797 psi (193 bar) 2764 psi (191 bar)

Power:

59.2 HP (44.1 kW) 55.7 Hp (41.5 kW)



NEW HOLLAND T8.300 DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln