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University of Nebraska - Lincoln

Year 2007

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Test 1901: New Holland TG 245 Diesel  
19-Speed

Tractor Museum  
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# NEBRASKA OECD TRACTOR TEST 1901–SUMMARY 568

## NEW HOLLAND TG 245 DIESEL

### 19 SPEED

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

**Dates of tests:** May 2-18, 2007

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

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.8432 Fuel weight 7.011 lbs/gal (0.840 kg/l) Oil SAE 15W40 API service classification CI-4 Transmission and hydraulic lubricant New Holland Multi-Tran fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 24.0 hours

**ENGINE: Make** CNH Engine Corporation Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** \*46699271\* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.488" x 5.315" (114.0 mm x 135.0 mm) **Compression ratio** 17.5 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 **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** 2 thermostats and variable speed fan

**ENGINE OPERATING PARAMETERS: Fuel rate:** 90.1-99.4 lb/h (40.9 - 45.1 kg/h) **High idle:** 2380-2420 rpm **Turbo boost:** nominal 19.6 - 23.9 psi (135 - 165 kPa) as measured 21.2 psi (146 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** \*Z7RW01447\* **Tread width** rear 64.0" (1626 mm) to 129.0" (3277 mm) front 60.0" (1524 mm) to 88.0" (2235 mm) **Wheelbase** 129.3" (3284 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 1.97 (3.17) second 2.26 (3.64) third 2.60 (4.19) fourth 2.99 (4.81) fifth 3.43 (5.52) sixth 3.93 (6.33) seventh 4.59 (7.38) eighth 5.26 (8.47) ninth 6.06 (9.77) tenth 6.96 (11.20) eleventh 7.98 (12.85) twelfth 9.16 (14.74) thirteenth 11.41 (18.37) fourteenth 13.09 (21.07) fifteenth 15.10 (24.30) sixteenth 17.32 (27.87) seventeenth 19.87 (31.97) eighteenth 22.79 (36.67) nineteenth 24.86 (40.00) (1900 engine rpm) reverse 2.83 (4.56), 3.26 (5.24), 6.61 (10.63), 7.57 (12.19) **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 1988 engine rpm or 1000 rpm at 1984 engine rpm **Unladen tractor mass** 21270 lb (9648 kg)

#### 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1108 rpm)</b>					
203.26 (151.57)	2200	13.23 (50.09)	0.456 (0.278)	15.36 (3.03)	
<b>Standard Power Take-off Speed (1008 rpm)</b>					
245.61 (183.15)	2000	14.55 (55.07)	0.415 (0.253)	16.88 (3.33)	
<b>Maximum Power (1 hour)</b>					
245.61 (183.15)	2000	14.55 (55.07)	0.415 (0.253)	16.88 (3.33)	

#### VARYING POWER AND FUEL CONSUMPTION

203.26 (151.57)	2200	13.23 (50.09)	0.456 (0.278)	15.36 (3.03)	Air temperature
175.71 (131.03)	2247	12.71 (48.11)	0.507 (0.308)	13.83 (2.72)	80°F (27°C)
134.23 (100.09)	2283	11.37 (43.03)	0.594 (0.361)	11.81 (2.33)	Relative humidity
91.83 (68.47)	2325	8.86 (33.53)	0.676 (0.411)	10.37 (2.04)	20%
46.55 (34.71)	2369	6.18 (23.38)	0.930 (0.566)	7.54 (1.48)	Barometer
1.50 (1.12)	2402	3.57 (13.50)	10.155 (16.695)	0.42 (0.08)	28.79" Hg (97.49 kPa)

Maximum torque - 787 lb.-ft. (1067 Nm) at 1500 rpm

Maximum torque rise - 62.1%

Torque rise at 1801 engine rpm - 48%

Power increase at 2000 engine rpm - 20.8%

#### 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)	Temp. °F (°C) cool-ing med	Barom. inch Hg (kPa)
<b>Maximum Power—7th Gear</b>							
175.08 (130.56)	15179 (67.52)	4.33 (6.96)	2200	4.34	0.535 (0.325)	13.11 (2.58)	188 (87)
<b>75% of Pull at Maximum Power—7th Gear</b>							
136.99 (102.15)	11405 (50.73)	4.50 (7.25)	2259	3.01	0.641 (0.390)	10.94 (2.15)	188 (87)
<b>50% of Pull at Maximum Power—7th Gear</b>							
94.74 (70.65)	7598 (33.80)	4.68 (7.53)	2307	1.41	0.746 (0.454)	9.40 (1.85)	187 (86)
<b>75% of Pull at Reduced Engine Speed—9th Gear</b>							
136.81 (102.02)	11444 (50.90)	4.48 (7.22)	1697	2.86	0.535 (0.325)	13.11 (2.58)	186 (86)
<b>50% of Pull at Reduced Engine Speed—9th Gear</b>							
94.54 (70.50)	7613 (33.87)	4.66 (7.49)	1742	1.67	0.572 (0.348)	12.25 (2.41)	184 (84)

**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 cool- ing med	Temp. °C Air dry bulb	Barom. inch Hg (kPa)	
4th Gear									
140.99 (105.14)	20102 (89.42)	2.63 (4.23)	2241	12.38	0.641 (0.390)	10.93 (2.15)	188 (86)	62 (17)	28.93 (97.97)
5th Gear									
159.97 (119.29)	19098 (84.95)	3.14 (5.06)	2228	8.23	0.586 (0.356)	11.97 (2.36)	188 (86)	65 (18)	28.93 (97.97)
6th Gear									
174.47 (130.10)	18590 (82.69)	3.52 (5.66)	2164	7.70	0.551 (0.335)	12.72 (2.51)	188 (87)	68 (20)	28.93 (97.97)
7th Gear									
192.56 (143.59)	18011 (80.12)	4.01 (6.45)	2094	6.87	0.519 (0.316)	13.51 (2.66)	188 (87)	70 (21)	28.93 (97.97)
8th Gear									
205.69 (153.38)	17473 (77.73)	4.41 (7.10)	1999	6.35	0.499 (0.303)	14.06 (2.77)	188 (87)	71 (22)	28.92 (97.93)
9th Gear									
207.84 (154.99)	14970 (66.59)	5.21 (8.38)	2003	4.41	0.494 (0.300)	14.20 (2.80)	188 (87)	73 (23)	28.92 (97.93)
10th Gear									
209.77 (156.42)	13083 (58.20)	6.01 (9.68)	1998	3.54	0.489 (0.297)	14.34 (2.83)	188 (87)	73 (23)	28.92 (97.93)
11th Gear									
207.94 (155.06)	11196 (49.80)	6.96 (11.21)	2002	2.77	0.494 (0.300)	14.20 (2.80)	188 (87)	74 (23)	28.92 (97.93)
12th Gear									
206.55 (154.03)	9651 (42.93)	8.03 (12.92)	2002	2.30	0.497 (0.303)	14.10 (2.78)	188 (87)	75 (24)	28.92 (97.93)

**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 manufacturers' claim of 44 Hp PTO power growth. The pull in 2<sup>nd</sup> 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. **1901**, Nebraska Summary 568, August 20, 2007.

Roger M. Hoy  
 Director

M.F. Kocher  
 V.I Adamchuk  
 J.A. Smith  
 Board of Tractor Test Engineers

**TRACTOR SOUND LEVEL WITH CAB**

**dB(A)**

At no load in 7th gear	73.5
Bystander in 18th gear	85.7

**TIRES, BALLAST AND WEIGHT**

	With Ballast	Without Ballast
<b>Rear Tires</b> -No., size, ply & psi (kPa)	Four 520/85R42;**,11(75)	Two 520/85R42;**,18(125)
<b>Ballast</b> - Duals (total)	1950 lb (885 kg)	None
- Cast Iron (total)	2000 lb (907 kg)	None
<b>Front Tires</b> -No., size, ply & psi (kPa)	Two 420/90R30;**,19(130)	Two 420/90R30;**,15(105)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	1970 lb (893 kg)	None
<b>Height of Drawbar</b>	18.0 in (455 mm)	17.5 in (445 mm)
<b>Static Weight with operator</b> - Rear	17425 lb (7903 kg)	13925 lb (6316 kg)
- Front	9940 lb (4509 kg)	7520 lb (3411 kg)
- Total	27365 lb(12412 kg)	21445 lb(9727 kg)

**DRAWBAR PERFORMANCE**  
**BALLASTED - 2000 ENGINE RPM**  
**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)
2nd Gear									
143.81 (107.24)	26397 (117.42)	2.04 (3.29)	2240	9.61	0.635 (0.386)	11.03 (2.17)	188 (87)	60 (16)	28.87 (97.77)
3rd Gear									
161.06 (120.10)	25472 (113.31)	2.37 (3.82)	2225	8.32	0.585 (0.356)	11.99 (2.36)	188 (87)	60 (16)	28.87 (97.77)
4th Gear									
176.29 (131.46)	24790 (110.27)	2.67 (4.29)	2152	7.09	0.551 (0.335)	12.72 (2.51)	188 (87)	61 (16)	28.87 (97.77)
5th Gear									
193.44 (144.25)	24405 (108.56)	2.97 (4.78)	2070	6.07	0.519 (0.315)	13.52 (2.66)	188 (87)	62 (17)	28.87 (97.77)
6th Gear									
204.71 (152.65)	23037 (102.47)	3.33 (5.36)	2000	4.97	0.503 (0.306)	13.94 (2.75)	188 (87)	63 (17)	28.87 (97.77)
7th Gear									
212.22 (158.25)	20148 (89.62)	3.95 (6.36)	2001	3.51	0.485 (0.295)	14.47 (2.85)	189 (87)	64 (18)	28.87 (97.77)
8th Gear									
214.03 (159.60)	17591 (78.25)	4.56 (7.34)	2000	2.79	0.480 (0.292)	14.62 (2.88)	188 (87)	65 (18)	28.87 (97.77)
9th Gear									
211.75 (157.90)	14989 (66.67)	5.30 (8.53)	2004	2.25	0.486 (0.296)	14.42 (2.84)	188 (87)	67 (19)	28.87 (97.77)
10th Gear									
209.75 (156.41)	12904 (57.40)	6.10 (9.81)	2000	1.82	0.488 (0.297)	14.36 (2.83)	188 (87)	71 (22)	28.87 (97.77)
11th Gear									
207.02 (154.38)	11065 (49.22)	7.02 (11.29)	2001	1.51	0.496 (0.302)	14.13 (2.78)	188 (87)	71 (22)	28.87 (97.77)
12th Gear									
204.08 (152.18)	9509 (42.30)	8.05 (12.95)	1996	1.28	0.504 (0.307)	13.91 (2.74)	188 (87)	72 (22)	28.87 (97.77)

### THREE POINT HITCH PERFORMANCE(OECD Static Test)

CATEGORY: III

Quick Attach: Yes

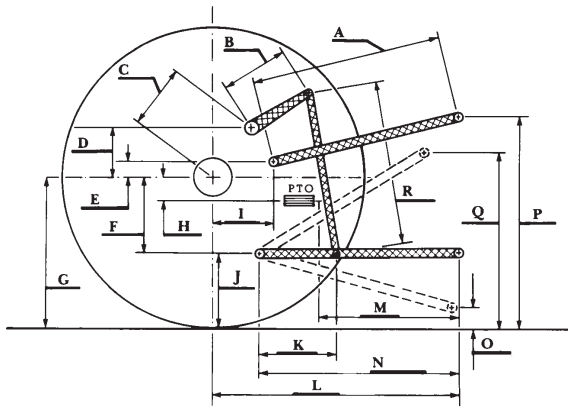
Maximum force exerted through whole range: 14070 lb (62.6 kN) High Lift Option  
16375 lb (72.8 kN)

i) Sustained pressure at compensator cutoff: 3039 psi (209 bar) Megaflow pump  
2949 psi (203 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 39.2 GPM (148.4 l/min) 31.4 GPM (118.9 l/min)  
Combined flow: 70.6 GPM (267.3 l/min)

iii) Pump delivery rate at maximum hydraulic power: 38.2 GPM (144.6 l/min) 31.9 GPM (120.8 l/min)  
Delivery pressure: 2847 psi (196 bar) 2705 psi (186 bar)  
Power: 63.5 HP (47.3 kW) 50.3 Hp (37.5 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	28.2	718
B	20.5	520
C	22.9	581
D	20.7	525
E	10.5	266
F	15.7	400
G	36.4	925
H	3.5	90
I	20.9	530
J	20.7	525
K	30.2	768
L	46.1	1170
*L'	50.7	1287
M	20.1	511
N	38.2	970
O	9.0	230
P	47.6	1210
Q	40.7	1035
R	39.2	995

\*L' to Quick Attach ends



**NEW HOLLAND TG245 DIESEL**