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## Test 1832: New Holland TG 285 Diesel

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# NEBRASKA OECD TRACTOR TEST 1832-SUMMARY 420

## NEW HOLLAND TG 285 DIESEL

### 18 SPEED

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

**Dates of Test:** September 11 - October 27, 2003

**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) 0.8447 Fuel weight 7.033 lbs/gal (0.843 kg/l) Oil SAE 15W40 API service classification SF/CD/CE Transmission and hydraulic lubricant New Holland Multi-Tran fluid Front axle lubricant SAE 85W-140 API GL-5 Total time engine was operated: 38.0 hours

**ENGINE:** Make Consolidated Diesel Corporation Diesel Type six cylinder vertical with turbocharger and air to air intercooler Serial No. \*46275463\* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.488" x 5.315" (114.0 mm x 135.0 mm) Compression ratio 17.0 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 and prefilter Fuel cooler radiator for pump return fuel Muffler vertical Cooling medium temperature control 2 thermostats and variable speed fan

**ENGINE OPERATING PARAMETERS:** Fuel rate: 92.8-102.1 lb/h (42.1 - 46.3 kg/h) High idle: 2375-2465 rpm Turbo boost: nominal 19.6 - 23.9 psi (135 - 165 kPa) as measured 21.7 psi (150 kPa)

**CHASSIS:** Type front wheel assist Serial No. \*JAW126578\* 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 1.96 (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 1000 rpm at 1984 engine rpm Unladen tractor mass 21175 lb (9605 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—1110 rpm)</b>					
241.55 (180.13)	2199	13.37 (50.61)	0.389 (0.237)	18.07 (3.56)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
274.82 (204.93)	1982	14.78 (55.93)	0.378 (0.230)	18.60 (3.66)	
<b>Maximum Power (2 hours)</b>					
274.82 (204.93)	1982	14.78 (55.93)	0.378 (0.230)	18.60 (3.66)	

#### VARYING POWER AND FUEL CONSUMPTION

241.55 (180.13)	2199	13.37 (50.61)	0.389 (0.237)	18.07 (3.56)	Air temperature
208.97 (155.83)	2236	11.90 (45.05)	0.401 (0.244)	17.56 (3.46)	77°F (25°C)
159.56 (118.99)	2275	10.07 (38.11)	0.444 (0.270)	15.85 (3.12)	Relative humidity
107.77 (80.36)	2313	7.64 (28.90)	0.498 (0.303)	14.11 (2.78)	56%
54.85 (40.90)	2355	5.16 (19.54)	0.662 (0.403)	10.63 (2.09)	Barometer
1.73 (1.29)	2396	2.99 (11.30)	12.164 (7.399)	0.58 (0.11)	28.64" Hg (96.99 kPa)

Maximum Torque - 925 lb.-ft. (1254 Nm) at 1399 rpm

Maximum Torque Rise - 60.4%

Torque rise at 1800 engine rpm - 38%

#### 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—7th Gear</b>									
204.52 (152.51)	18026 (80.18)	4.25 (6.85)	2191	5.59	0.463 (0.282)	15.19 (2.99)	189 (87)	60 (16)	28.78 (97.46)
<b>75% of Pull at Maximum Power—7th Gear</b>									
159.65 (119.05)	13486 (59.99)	4.44 (7.14)	2237	3.49	0.505 (0.307)	13.92 (2.74)	188 (87)	66 (19)	28.87 (97.77)
<b>50% of Pull at Maximum Power—7th Gear</b>									
110.12 (82.11)	8993 (40.00)	4.59 (7.39)	2282	2.14	0.590 (0.359)	11.91 (2.35)	185 (85)	66 (19)	28.87 (97.77)
<b>75% of Pull at Reduced Engine Speed—9th Gear</b>									
159.69 (119.08)	13496 (60.03)	4.44 (7.14)	1695	3.55	0.455 (0.277)	15.45 (3.04)	187 (86)	67 (19)	28.88 (97.80)
<b>50% of Pull at Reduced Engine Speed—9th Gear</b>									
109.94 (81.99)	8988 (39.98)	4.59 (7.38)	1726	2.11	0.492 (0.299)	14.30 (2.82)	185 (85)	67 (19)	28.89 (97.83)

**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)	Consumption Hp.hr/gal (kW.h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
190.24 (141.86)	20744 (92.27)	3.44 (5.53)	2188	10.69	0.499 (0.303)	14.10 (2.78)	188 (87)	50 (10)	29.28 (99.15)
7th Gear									
211.26 (157.54)	19991 (88.92)	3.96 (6.38)	2107	8.53	0.475 (0.289)	14.82 (2.92)	189 (87)	50 (10)	29.28 (99.15)
8th Gear									
225.21 (167.94)	18984 (84.44)	4.45 (7.16)	2025	6.70	0.458 (0.279)	15.34 (3.02)	195 (91)	61 (16)	28.79 (97.49)
9th Gear									
231.86 (172.90)	17147 (76.27)	5.07 (8.16)	1971	5.26	0.448 (0.273)	15.69 (3.09)	196 (91)	62 (17)	28.81 (97.56)
10th Gear									
233.57 (174.17)	14960 (66.55)	5.85 (9.42)	1964	4.29	0.441 (0.268)	15.94 (3.14)	195 (91)	63 (17)	28.83 (97.63)
11th Gear									
233.11 (173.83)	12902 (57.39)	6.78 (10.90)	1963	3.40	0.445 (0.271)	15.81 (3.11)	196 (91)	64 (18)	28.85 (97.70)
12th Gear									
232.46 (173.34)	11150 (49.60)	7.82 (12.58)	1961	2.72	0.447 (0.272)	15.75 (3.10)	196 (91)	64 (18)	28.86 (97.73)
13th Gear									
229.08 (170.82)	8816 (39.22)	9.74 (15.68)	1949	2.11	0.452 (0.275)	15.56 (3.07)	197 (92)	65 (18)	28.86 (97.73)

**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 injection pump inlet was maintained at 115°F (46°C). The pull in 3<sup>rd</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. **1832**, Nebraska Summary 420, December 15, 2003.

Leonard L. Bashford  
 Director

M.F. Kocher  
 V.I. Adamchuk  
 W.P. Campbell  
 Board of Tractor Test Engineers

**TRACTOR SOUND LEVEL WITH CAB**

**dB(A)**

At 75% load in 7th gear	74.7
Bystander in 18th gear	86.3

**TIRES, BALLAST AND WEIGHT**

	With Ballast	Without Ballast
<b>Rear Tires</b> -No., size, ply & psi (kPa)	Four 520/85R42;**,13(90)	Two 520/85R42;**,18(125)
<b>Ballast</b> - Duals (total)	1950 lb (885 kg)	None
- Cast Iron (total)	4975 lb (2256 kg)	None
<b>Front Tires</b> -No., size, ply & psi (kPa)	Two 420/90R30;**,23(160)	Two 420/90R30;**,15(105)
<b>Ballast</b> - Liquid (total)	None	None
- Cast Iron (total)	3080 lb (1397 kg)	None
<b>Height of Drawbar</b>	17.5 in (445 mm)	17.0 in (430 mm)
<b>Static Weight with operator</b> - Rear	20075 lb (9106 kg)	13610 lb (6173 kg)
- Front	11280 lb (5116 kg)	7740 lb (3511 kg)
- Total	31355 lb(14222 kg)	21350 lb(9684 kg)

**DRAWBAR PERFORMANCE**  
**BALLASTED - 1980 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)
3rd Gear									
191.04 (142.46)	30650 (136.34)	2.34 (3.77)	2214	9.10	0.491 (0.299)	14.33 (2.82)	187 (86)	46 (8)	29.03 (98.31)
4th Gear									
198.96 (148.36)	27511 (122.37)	2.71 (4.36)	2168	6.19	0.487 (0.296)	14.45 (2.85)	194 (90)	72 (22)	28.70 (97.19)
5th Gear									
212.47 (158.44)	26492 (117.84)	3.01 (4.84)	2087	5.80	0.485 (0.295)	14.49 (2.85)	196 (91)	72 (22)	28.70 (97.19)
6th Gear									
225.26 (167.98)	25490 (113.39)	3.31 (5.33)	1996	5.38	0.471 (0.286)	14.93 (2.94)	197 (92)	71 (22)	28.79 (97.49)
7th Gear									
231.63 (172.73)	22505 (100.11)	3.86 (6.21)	1958	3.90	0.457 (0.278)	15.38 (3.03)	197 (92)	71 (22)	28.79 (97.49)
8th Gear									
233.00 (173.75)	19482 (86.66)	4.49 (7.23)	1974	3.23	0.450 (0.274)	15.63 (3.08)	196 (91)	70 (21)	28.88 (97.80)
9th Gear									
235.19 (175.38)	16991 (75.58)	5.19 (8.55)	1972	2.77	0.447 (0.272)	15.75 (3.10)	197 (92)	70 (21)	28.85 (97.70)
10th Gear									
233.17 (173.87)	14624 (65.05)	5.98 (9.62)	1971	2.35	0.450 (0.274)	15.61 (3.08)	198 (92)	76 (24)	28.80 (97.53)
11th Gear									
229.81 (171.37)	12536 (55.76)	6.87 (11.06)	1967	1.90	0.459 (0.279)	15.33 (3.02)	198 (92)	77 (25)	28.79 (97.49)
12th Gear									
225.77 (168.36)	10697 (47.58)	7.92 (12.73)	1967	1.51	0.464 (0.282)	15.17 (2.99)	199 (93)	78 (26)	28.79 (97.49)
13th Gear									
223.32 (166.53)	8413 (37.42)	9.95 (16.01)	1976	1.05	0.470 (0.286)	14.97 (2.95)	198 (92)	79 (26)	28.78 (97.46)

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

CATEGORY: III

Quick Attach: Yes

Maximum force exerted through whole range: 16375 lb (72.8 kN) High Lift Option  
17931 lb (79.8 kN)

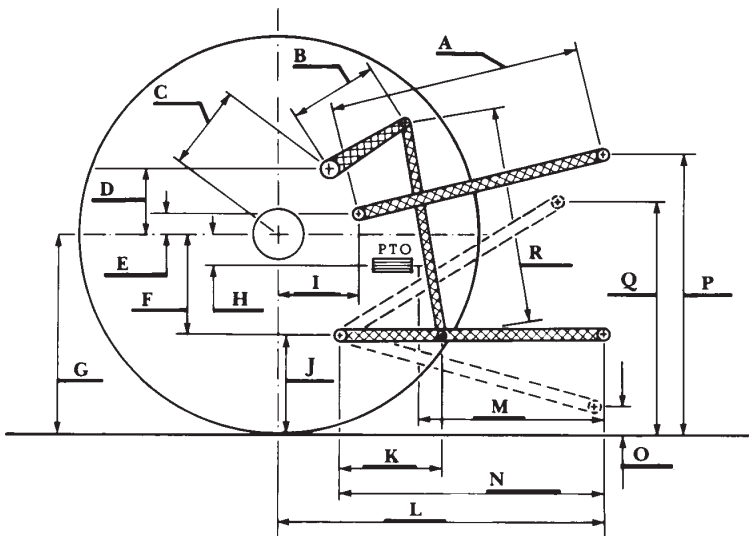
i) Opening pressure of relief valve: NA NA

Sustained pressure at compensator cutoff: 3030 psi (209 bar) Mega flow pump  
2770 psi (191 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 39.0 GPM (147.6 l/min) 31.2 GPM (118.1 l/min)  
 Combined flow: 70.2 GPM (265.7 l/min)

iii) Pump delivery rate at maximum hydraulic power: 37.6 GPM (142.3 l/min) 31.4 GPM (118.9 l/min)  
 Delivery pressure: 2850 psi (197 bar) 2560 psi (177 bar)  
 Power: 62.6 HP (46.7 kW) 46.9 Hp (35.0 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 TG285 DIESEL

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 Institute of Agriculture and Natural Resources  
 University of Nebraska-Lincoln  
 Darrell Nelson, Dean and Director