January 2003

Test 1831: New Holland TG 255 Diesel

NEBRASKA OECD TRACTOR TEST 1831–SUMMARY 419
NEW HOLLAND TG 255 DIESEL
18 SPEED

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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1109 rpm)					
216.48 *(161.43)*	2200	12.41 *(46.97)*	0.403 *(0.245)*	17.45 *(3.44)*	
Maximum Power (2 hours)					
246.00 *(183.44)*	2000	13.49 *(51.08)*	0.386 *(0.235)*	18.23 *(3.59)*	
Standard Power Take-off Speed (1000 rpm)					
245.98 *(183.43)*	1984	13.46 *(50.96)*	0.385 *(0.234)*	18.27 *(3.60)*	
VARYING POWER AND FUEL CONSUMPTION					
216.48 *(161.43)*	2200	12.41 *(46.97)*	0.403 *(0.245)*	17.45 *(3.44)*	Air temperature
188.09 *(140.26)*	2240	11.22 *(42.47)*	0.419 *(0.255)*	16.77 *(3.30)*	77°F *(25°C)*
142.62 *(106.35)*	2278	9.43 *(35.69)*	0.465 *(0.283)*	15.13 *(2.98)*	Relative humidity
96.66 *(72.08)*	2316	7.42 *(28.10)*	0.540 *(0.329)*	13.02 *(2.57)*	39%
49.16 *(36.66)*	2355	5.29 *(20.02)*	0.757 *(0.460)*	9.29 *(1.83)*	Barometer
1.72 *(1.29)*	2395	3.33 *(12.59)*	13.576 *(8.258)*	0.52 *(0.10)*	28.95" Hg *(98.04 kPa)*

Maximum Torque - 831 lb.-ft. *(1126 Nm)* at 1199 rpm
Maximum Torque Rise - 60.6%
Torque rise at 1799 engine rpm - 34%

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 cool-ing med	*(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—7th Gear									
179.63 *(133.95)*	15537 *(69.11)*	4.34 *(6.98)*	2204	4.66	0.486 *(0.296)*	14.47 *(2.85)*	185 *(85)*	60 *(16)*	28.82 *(97.60)*
75% of Pull at Maximum Power—7th Gear									
139.55 *(104.07)*	11697 *(52.03)*	4.47 *(7.20)*	2233	2.90	0.558 *(0.339)*	12.61 *(2.48)*	185 *(85)*	68 *(20)*	28.82 *(97.60)*
50% of Pull at Maximum Power—7th Gear									
96.15 *(71.70)*	7792 *(34.66)*	4.63 *(7.45)*	2283	1.77	0.643 *(0.391)*	10.94 *(2.15)*	183 *(84)*	69 *(21)*	28.80 *(97.53)*
75% of Pull at Reduced Engine Speed—9th Gear									
139.83 *(104.27)*	11694 *(52.02)*	4.48 *(7.22)*	1697	2.98	0.479 *(0.292)*	14.67 *(2.89)*	184 *(84)*	69 *(21)*	28.81 *(97.56)*
50% of Pull at Reduced Engine Speed—9th Gear									
95.99 *(71.58)*	7793 *(34.67)*	4.62 *(7.43)*	1727	1.77	0.534 *(0.325)*	13.17 *(2.59)*	182 *(83)*	71 *(22)*	28.78 *(97.46)*

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

Dates of Test: September 18 - 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:** 35.5 hours

ENGINE: Make Consolidated Diesel Corporation Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** *46275741* **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: 85.3-93.9 lb/h *(38.7 - 42.6 kg/h)* **High idle:** 2375-2465 rpm **Turbo boost:** nominal 18.1 - 22.5 psi *(125 - 155 kPa)* as measured 20.5 psi *(142 kPa)*

CHASSIS: Type front wheel assist **Serial No.** *JAW126576* **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** 21250 lb *(9638 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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				5th Gear					
165.19	20629	3.00	2202	11.39	0.515	13.67	184	54	28.82
(123.18)	*(91.76)*	*(4.83)*			*(0.313)*	*(2.69)*	*(85)*	*(12)*	*(97.60)*
				6th Gear					
180.27	19763	3.42	2135	9.24	0.507	13.88	185	57	28.82
(134.42)	*(87.91)*	*(5.50)*			*(0.308)*	*(2.74)*	*(85)*	*(14)*	*(97.60)*
				7th Gear					
196.96	19037	3.88	2043	7.95	0.477	14.73	186	59	28.82
(146.87)	*(84.68)*	*(6.24)*			*(0.290)*	*(2.90)*	*(86)*	*(15)*	*(97.60)*
				8th Gear					
205.42	17282	4.46	2005	5.88	0.465	15.14	188	62	28.82
(153.18)	*(76.87)*	*(7.17)*			*(0.283)*	*(2.98)*	*(87)*	*(17)*	*(97.60)*
				9th Gear					
207.07	14903	5.21	2003	4.47	0.460	15.28	187	63	28.82
(154.41)	*(66.29)*	*(8.39)*			*(0.280)*	*(3.01)*	*(86)*	*(17)*	*(97.60)*
				10th Gear					
209.05	13003	6.03	2000	3.51	0.458	15.37	193	67	28.83
(155.89)	*(57.84)*	*(9.70)*			*(0.278)*	*(3.03)*	*(89)*	*(19)*	*(97.63)*
				11th Gear					
206.94	11123	6.98	2003	2.83	0.458	15.35	192	66	28.83
(154.31)	*(49.48)*	*(11.23)*			*(0.279)*	*(3.02)*	*(89)*	*(19)*	*(97.63)*
				12th Gear					
203.90	9504	8.05	2003	2.30	0.461	15.27	191	65	28.83
(152.05)	*(42.28)*	*(12.95)*			*(0.280)*	*(3.01)*	*(88)*	*(18)*	*(97.63)*

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At 75% load in 7th gear	75.3
Bystander in 18th gear	87.4

TIRES, BALLAST AND WEIGHT	With Ballast	Without Ballast
Rear Tires - No., size, ply & psi *(kPa)*	Four 520/85R42;**;11*(75)*	Two 520/85R42;**;17*(115)*
Ballast - Duals (total)	1950 lb *(885 kg)*	None
- Cast Iron (total)	2885 lb *(1308 kg)*	None
Front Tires - No., size, ply & psi *(kPa)*	Two 420/90R30;**;20*(135)*	Two 420/90R30;**;15*(105)*
Ballast - Liquid (total)	None	None
- Cast Iron (total)	2200 lb *(998 kg)*	None
Height of Drawbar	17.5 in *(445 mm)*	17.0 in *(430 mm)*
Static Weight with operator - Rear	18200 lb *(8255 kg)*	13695 lb *(6212 kg)*
- Front	10260 lb *(4654 kg)*	7730 lb *(3506 kg)*
- Total	28460 lb *(12909 kg)*	21425 lb *(9718 kg)*

REPAIRS AND ADJUSTMENTS: The charge air cooler return elbow failed. Tests continued after replacement.

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 113°F *(45°C)*. The pull in 3rd 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. **1831**, Nebraska Summary 419, December15, 2003.

Leonard L. Bashford
Director

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

DRAWBAR PERFORMANCE

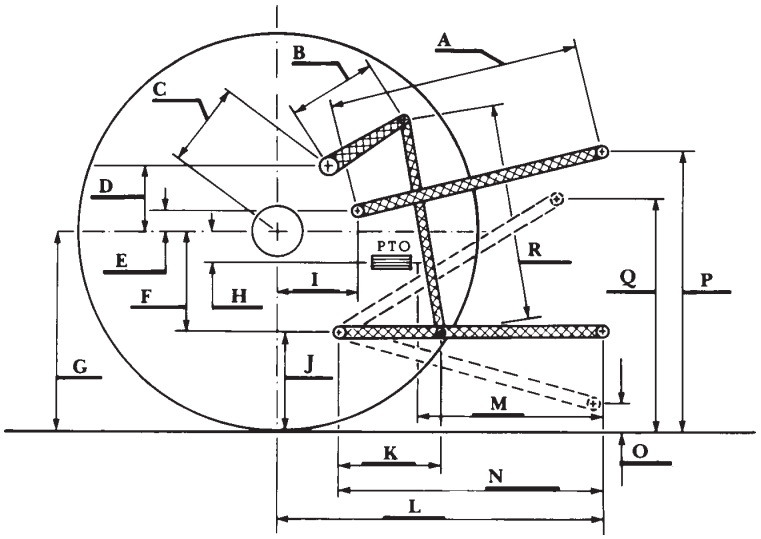
BALLASTED - 2000 ENGINE RPM

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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
				3rd Gear					
174.47 *(130.10)*	27995 *(124.53)*	2.34 *(3.76)*	2185	8.29	0.506 *(0.308)*	13.89 *(2.74)*	186 *(86)*	58 *(14)*	28.82 *(97.60)*
				4th Gear					
188.25 *(140.37)*	27142 *(120.74)*	2.60 *(4.19)*	2095	7.20	0.490 *(0.298)*	14.35 *(2.83)*	187 *(86)*	60 *(16)*	28.81 *(97.56)*
				5th Gear					
199.38 *(148.68)*	25747 *(114.53)*	2.90 *(4.67)*	2020	6.33	0.482 *(0.293)*	14.60 *(2.88)*	189 *(87)*	61 *(16)*	28.80 *(97.53)*
				6th Gear					
203.51 *(151.75)*	22801 *(101.43)*	3.35 *(5.39)*	1998	4.82	0.470 *(0.286)*	14.96 *(2.95)*	188 *(87)*	57 *(14)*	29.01 *(98.24)*
				7th Gear					
208.62 *(155.57)*	19832 *(88.22)*	3.94 *(6.35)*	1991	3.70	0.463 *(0.281)*	15.20 *(2.99)*	193 *(89)*	68 *(20)*	28.99 *(98.17)*
				8th Gear					
207.77 *(154.93)*	17078 *(75.96)*	4.56 *(7.34)*	1996	2.93	0.458 *(0.279)*	15.34 *(3.02)*	191 *(89)*	61 *(16)*	29.05 *(98.37)*
				9th Gear					
206.32 *(153.85)*	14635 *(65.10)*	5.29 *(8.51)*	1996	2.45	0.458 *(0.279)*	15.36 *(3.03)*	193 *(89)*	62 *(17)*	29.05 *(98.37)*
				10th Gear					
206.60 *(154.06)*	12734 *(56.65)*	6.08 *(9.79)*	1995	2.10	0.459 *(0.279)*	15.32 *(3.02)*	194 *(90)*	65 *(18)*	29.03 *(98.31)*
				11th Gear					
201.18 *(150.02)*	10804 *(48.06)*	6.98 *(11.24)*	1988	1.70	0.473 *(0.288)*	14.87 *(2.93)*	194 *(90)*	66 *(19)*	29.02 *(98.27)*
				12th Gear					
198.83 *(148.27)*	9268 *(41.23)*	8.05 *(12.95)*	1991	1.44	0.482 *(0.293)*	14.62 *(2.88)*	195 *(90)*	67 *(19)*	29.01 *(98.24)*

THREE POINT HITCH PERFORMANCE(OECD Static Test)

CATEGORY: III		
Quick Attach: Yes		High Lift Option
Maximum force exerted through whole range:	15183 lb *(67.5 kN)*	17931 lb *(79.8 kN)*
i) Opening pressure of relief valve:	NA	NA
		Mega flow pump
Sustained pressure at compensator cutoff:	3030 psi *(209 bar)*	2770 psi *(191 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	38.7 GPM *(146.5 l/min)*	31.2 GPM *(118.1 l/imn)*
Combined flow:	69.9 GPM *(264.6 l/min)*	
iii) Pump delivery rate at maximum hydraulic power:	36.8 GPM *(139.3 l/min)*	31.4 GPM *(118.9 l/min)*
Delivery pressure:	2850 psi *(197 bar)*	2560 psi *(177 bar)*
Power:	61.2 HP *(45.6 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 TG255 DIESEL

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