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Test 1837A: New Holland TC 55DA Diesel

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NEBRASKA TRACTOR TEST 1837A
NEW HOLLAND TC 55DA DIESEL
12 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—589 rpm)					
48.01 *(35.80)*	2700	3.95 *(14.93)*	0.577 *(0.351)*	12.17 *(2.40)*	
Standard Power Take-off Speed(540 rpm)					
47.80 *(35.65)*	2475	3.66 *(13.87)*	0.538 *(0.327)*	13.05 *(2.57)*	
VARYING POWER AND FUEL CONSUMPTION					
48.01 *(35.80)*	2700	3.95 *(14.93)*	0.577 *(0.351)*	12.17 *(2.40)*	Air temperature
42.46 *(31.66)*	2801	3.50 *(13.26)*	0.579 *(0.352)*	12.12 *(2.39)*	75°F *(24°C)*
32.17 *(23.99)*	2841	2.82 *(10.68)*	0.616 *(0.374)*	11.41 *(2.25)*	Relative humidity
21.75 *(16.22)*	2871	2.26 *(8.57)*	0.731 *(0.445)*	9.61 *(1.89)*	34%
10.88 *(8.11)*	2913	1.75 *(6.63)*	1.130 *(0.688)*	6.21 *(1.22)*	Barometer
0.61 *(0.46)*	2938	1.37 *(5.18)*	15.732 *(9.569)*	0.45 *(0.09)*	28.84"Hg *(97.66 kPa)*

Maximum Torque 122 lb.-ft. *(165 Nm)* at 1657 rpm
Maximum Torque Rise - 30.6%
Torque rise at 2203 rpm - 20%

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive Disengaged dB(A)	Front Wheel Drive Engaged dB(A)
At no load in 7th (M3) gear	89.0	89.0
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires–No., size, ply & psi *(kPa)*	Two 18.4-24; 8:12 *(85)*
Front Tires–No., size, ply & psi *(kPa)*	Two 12-16.5; 8;12 *(85)*
Height of Drawbar	17.0 in *(405 mm)*
Static Weight with operator– Rear	3035 lb *(1377 kg)*
– Front	1825 lb *(828 kg)*
– Total	4860 lb *(2205 kg)*

Location of Test: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of Test: April 29-30, 2004

Manufacturer: CNH America LLC, 700 State Srteet, Racine, Wi. 53404

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8432 **Fuel weight** 7.021 lbs/gal *(0.841 kg/l)* **Oil SAE** 15W40 **API service classification** CF-4/SG **Transmission and hydraulic lubricant** New Holland M2C134D fluid **Front axle lubricant** New Holland M2C134D fluid **Total time engine was operated** 11.0 hours

ENGINE: Make ISM Diesel **Type** four cylinder vertical with turbocharger **Serial No.** 27999 **Crankshaft** lengthwise **Rated engine speed** 2700 **Bore and stroke** 3.307" x 3.937" *(84.0 mm x 100.0 mm)* **Compression ratio** 22.4 to 1 **Displacement** 135 cu in *(2216 ml)* **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **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** horizontal **Cooling medium temperature control** one thermostat

ENGINE OPERATING PARAMETERS: Fuel rate: 25.5 - 28.0 lb/h *(11.6 - 12.7 kg/h)* **High idle:** 2850 - 2950 rpm **Turbo boost:** nominal 8.0 - 10.1 psi *(55 - 70 kPa)* as measured 9.4 psi *(65 kPa)*

CHASSIS: Type front wheel assist **Serial No.** HX10016 **Tread width** rear 52.8" *(1341 mm)* to 76.3" *(1939 mm)* front 56.4" *(1432 mm)* **Wheelbase** 74.8" *(1900 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph *(km/h)*** first 1.16 *(1.86)* second 1.56 *(2.51)* third 2.04 *(3.29)* fourth 2.62 *(4.22)* fifth 2.90 *(4.67)* sixth 3.93 *(6.32)* seventh 5.15 *(8.28)* eighth 6.61 *(10.63)* ninth 8.17 *(13.15)* tenth 11.06 *(17.80)* eleventh 14.48 *(23.30)* twelfth 18.59 *(29.91)* reverse 1.17 *(1.88)*, 1.58 *(2.55)*, 2.07 *(3.33)*, 2.66 *(4.28)*, 2.94 *(4.73)*, 3.98 *(6.41)*, 5.21 *(8.39)*, 6.69 *(10.77)*, 8.28 *(13.32)*, 11.21 *(18.04)*, 14.68 *(23.62)*, 18.83 *(30.31)* **Clutch** single dry disc operated by foot pedal **Brakes** single wet disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 2475 engine rpm **Unladen tractor mass** 4685 lb *(2125 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: I, II		
Quick Attach: None		
Maximum Force Exerted Through Whole Range:	2776 lbs	*(12.3 kN)* Category I
	2430 lbs	*(10.8 kN)* Category II
i) Opening pressure of relief valve:	NA	
Sustained pressure of the open relief valve:	2550 psi	*(176 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.9 GPM	*(41.3 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	10.7 GPM	*(40.5 l/min)*
Delivery pressure:	1965 psi	*(135 bar)*
Power:	12.3 HP	*(9.1 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	2565 *(177)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	178 *(81)*
Location:	hydraulic sump
Category:	I, II
Quick attach:	none

Category I

SAE Static Test—System pressure 2320 psi *(160 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	14.0 *(356)*	20.1 *(511)*	25.9 *(658)*	32.1 *(815)*
Lift force on frame lb	3832	3647	3433	3180	2789
" " " " " " *(kN)*	*(17.0)*	*(16.2)*	*(15.3)*	*(14.1)*	*(12.4)*

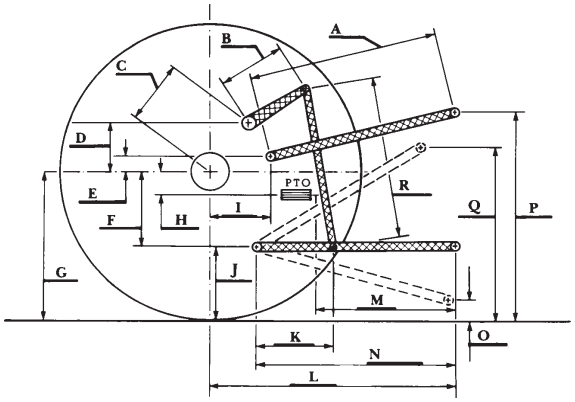
Category II

SAE Static Test—System pressure 2320 psi *(160 Bar)*

Hitch point distance to ground level in. *(mm)*	8.2 *(208)*	15.2 *(386)*	22.0 *(559)*	29.0 *(737)*	35.9 *(912)*
Lift force on frame lb	3439	3356	3143	2892	2305
" " " " " " *(kN)*	*(15.3)*	*(14.9)*	*(14.0)*	*(12.9)*	*(10.3)*

	Category I		Category II	
	inch	*mm*	inch	*mm*
A	23.1	*587*	23.0	*584*
B	11.8	*300*	11.8	*300*
C	13.5	*344*	13.5	*344*
D	13.5	*342*	13.5	*342*
E	10.3	*262*	10.3	*262*
F	5.2	*132*	5.2	*132*
G	26.0	*660*	26.0	*660*
H	0.5	*13*	0.5	*13*
I	12.2	*309*	12.2	*309*
J	20.8	*528*	20.8	*528*
K	14.2	*362*	14.2	*361*
L	34.6	*879*	34.5	*876*
M	22.9	*582*	22.8	*579*
N	31.5	*800*	31.4	*797*
O	6.6	*168*	6.9	*175*
P	38.9	*988*	39.9	*1013*
Q	34.1	*865*	34.5	*876*
R	21.4	*543*	21.4	*543*

HITCH DIMENSIONS AS TESTED - NO LOAD



REPAIRS AND ADJUSTMENTS: The fuel tank was found to be leaking following the PTO tests.

NOTE: The performance results on this report were obtained from tests carried out on the Case IH DX 55 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. This tractor did not meet the manufacturer's claims of 3465 lb *(1571 kg)* 3 point hitch lift at 24" nor 11.6 GPM *(43.9 lpm)* hydraulic flow. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 104°F *(40°C)*.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1837A,** November 1, 2004

Leonard L. Bashford
Director

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

New Holland TC55DA Diesel

Agricultural Research Division
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