2014

Test 2096A: New Holland T9.600

Nebraska Tractor Test Lab
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NEBRASKA OECD TRACTOR TEST 2096A - SUMMARY 961A
NEW HOLLAND T9.600 DIESEL
16 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 Hp.hr/gal *(kW.h/l)*	D.E.F. Consumption Gal/hr *(l/h)*	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1160 rpm)						
477.75 *(356.26)*	2101	26.61 *(100.74)*	0.391 *(0.238)*	17.95 *(3.54)*	2.37 *(8.97)*	
Maximum Power (1 hour)						
539.81 *(402.54)*	1902	28.23 *(106.84)*	0.367 *(0.223)*	19.13 *(3.77)*	2.72 *(10.29)*	
Standard Power Take-off Speed (1000 rpm)						
535.05 *(398.99)*	1811	27.66 *(104.69)*	0.363 *(0.221)*	19.35 *(3.81)*	2.53 *(9.56)*	
VARYING POWER AND FUEL CONSUMPTION						
477.75 *(356.26)*	2101	26.61 *(100.74)*	0.391 *(0.238)*	17.95 *(3.54)*	2.10 *(8.97)*	Air temperature
414.64 *(309.20)*	2146	23.95 *(90.67)*	0.406 *(0.247)*	17.31 *(3.41)*	1.97 *(7.46)*	73°F *(23°C)*
312.88 *(233.32)*	2158	19.08 *(72.21)*	0.428 *(0.260)*	16.40 *(3.23)*	1.53 *(5.79)*	Relative humidity
209.50 *(156.22)*	2167	14.32 *(54.19)*	0.480 *(0.292)*	14.63 *(2.88)*	1.11 *(4.20)*	44%
105.39 *(78.59)*	2177	9.75 *(36.91)*	0.650 *(0.395)*	10.81 *(2.13)*	0.65 *(2.44)*	Barometer
2.71 *(2.02)*	2186	5.48 *(20.75)*	14.219 *(8.649)*	0.49 *(0.10)*	0.24 *(0.89)*	29.04" Hg *(98.34 kPa)*

Maximum torque - 1771 lb.-ft. *(2402 Nm)* at 1400 rpm
Maximum torque rise - 48.3%
Torque rise at 1680 engine rpm - 38%
Power increase at 1902 engine rpm - 13.0%

DRAWBAR PERFORMANCE
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)*	Fuel Consumption Hp.hr/gal *(kW.h/l)*	D.E.F Consumption lb/hp.hr *(kg/kW.h)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—5th Gear										
441.44 *(329.18)*	30445 *(135.43)*	5.44 *(8.75)*	2100	2.9	0.423 *(0.257)*	16.59 *(3.27)*	0.046 *(0.028)*	200 *(93)*	69 *(20)*	28.86 *(97.73)*
75% of Pull at Maximum Power—5th Gear										
341.84 *(254.91)*	22818 *(101.50)*	5.62 *(9.04)*	2152	2.1	0.444 *(0.270)*	15.82 *(3.12)*	0.042 *(0.026)*	201 *(94)*	73 *(23)*	28.82 *(97.60)*
50% of Pull at Maximum Power—5th Gear										
230.64 *(171.99)*	15197 *(67.60)*	5.69 *(9.16)*	2163	1.4	0.493 *(0.300)*	14.24 *(2.81)*	0.043 *(0.026)*	193 *(89)*	74 *(23)*	28.82 *(97.60)*
75% of Pull at Reduced Engine Speed—9th Gear										
341.84 *(254.91)*	22737 *(101.14)*	5.64 *(9.08)*	1484	2.2	0.383 *(0.233)*	18.36 *(3.62)*	0.038 *(0.023)*	198 *(92)*	73 *(23)*	28.82 *(97.60)*
50% of Pull at Reduced Engine Speed—9th Gear										
230.46 *(171.85)*	15201 *(67.62)*	5.69 *(9.15)*	1485	1.4	0.406 *(0.247)*	17.28 *(3.40)*	0.040 *(0.024)*	183 *(84)*	74 *(23)*	28.82 *(97.60)*

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

Dates of tests: September 22-29, 2014

Manufacturer: CNH Industrial 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)*** 0.8434 **Fuel weight** 7.022 lbs/gal *(0.842 kg/l)* **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal *(1.087 kg/l)* **Oil SAE** 10W40 **API service classification** CJ-4 **Transmission lubricant** New Holland Mastertran Ultraction fluid **Hydraulic and axle lubricant** New Holland Mastertran Ultraction fluid **Total time engine was operated:** 15.0 hours

ENGINE: Make FPT Industrial Diesel **Type** six cylinder vertical with two turbochargers, two air to water intercoolers and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** 000006114 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 5.315" x 5.906" *(135.0 mm x 150.0 mm)* **Compression ratio** 15.3 to 1 **Displacement** 786 cu in *(12880 ml)* **Starting system** 24 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, seperate radiators for hydraulic and transmission oil **Fuel filter** two paper elements **Fuel cooler** radiator for pump return fuel **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) with a vertical muffler **Cooling medium temperature control** thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 180.1 - 191.1 lb/h *(81.7 - 86.7 kg/h)* **High idle:** 2175 - 2225 rpm **Turbo boost:** nominal 36.3 - 39.2 psi *(250 - 270 kPa)* as measured 38.0 psi *(262 kPa)*

CHASSIS: Type four wheel drive with duals **Serial No.** *ZEF301131* **Tread width** rear 83.4" *(2118 mm)* to 160.2" *(4070 mm)* front 83.4" *(2118 mm)* to 160.2" *(4070 mm)* **Wheelbase** 154.0" *(3911 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 2.82 *(4.54)* second 3.40 *(5.47)* third 4.11 *(6.61)* fourth 4.95 *(7.96)* fifth 5.68 *(9.14)* sixth 6.24 *(10.04)* seventh 6.84 *(11.01)* eighth 7.52 *(12.10)* ninth 8.26 *(13.30)* tenth 9.08 *(14.61)* eleventh 9.95 *(16.02)* twelfth 10.94 *(17.60)* thirteenth 12.55 *(20.21)* fourteenth 15.12 *(24.34)* fifteenth 18.27 *(29.40)* sixteenth 22.00 *(35.41)* reverse 4.28 *(6.88)*, 8.61 *(13.85)* **Clutch** multiple wet disc electrohydraulically operated by foot pedal **Brakes** wet disc hydraulically operated by foot pedal **Steering** hydrostatic and articulated

DRAWBAR PERFORMANCE AT 2100 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)*	D.E.F Consumption lb/hp.hr *(kg/kW.h)*	Temp.°F(°C) cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					1st Gear					
327.74	48640	2.53	2151	11.5	0.474	14.80	0.047	200	63	28.90
(244.39)	*(216.36)*	*(4.07)*			*(0.289)*	*(2.92)*	*(0.028)*	*(93)*	*(17)*	*(97.87)*
					2nd Gear					
394.81	48585	3.05	2138	10.9	0.462	15.20	0.047	201	60	28.90
(294.41)	*(216.11)*	*(4.90)*			*(0.281)*	*(2.99)*	*(0.028)*	*(94)*	*(15)*	*(97.87)*
					3rd Gear					
437.08	42845	3.83	2099	5.6	0.428	16.40	0.047	201	66	28.90
(325.93)	*(190.58)*	*(6.16)*			*(0.260)*	*(3.23)*	*(0.028)*	*(94)*	*(19)*	*(97.87)*
					4th Gear					
438.93	35033	4.70	2100	3.7	0.426	16.50	0.045	200	72	28.85
(327.31)	*(155.83)*	*(7.56)*			*(0.259)*	*(3.25)*	*(0.028)*	*(93)*	*(22)*	*(97.70)*
					5th Gear					
441.44	30445	5.44	2100	2.9	0.423	16.59	0.046	200	69	28.86
(329.18)	*(135.43)*	*(8.75)*			*(0.257)*	*(3.27)*	*(0.028)*	*(93)*	*(20)*	*(97.73)*
					6th Gear					
443.42	27753	5.99	2100	2.7	0.423	16.62	0.045	201	69	28.85
(330.66)	*(123.45)*	*(9.64)*			*(0.257)*	*(3.27)*	*(0.028)*	*(94)*	*(21)*	*(97.70)*
					7th Gear					
439.98	25029	6.59	2101	2.4	0.426	16.49	0.046	201	66	28.86
(328.09)	*(111.33)*	*(10.61)*			*(0.259)*	*(3.25)*	*(0.028)*	*(94)*	*(19)*	*(97.73)*
					8th Gear					
441.58	22837	7.25	2100	2.2	0.423	16.61	0.045	199	72	28.84
(329.28)	*(101.58)*	*(11.67)*			*(0.257)*	*(3.27)*	*(0.027)*	*(93)*	*(22)*	*(97.66)*
					9th Gear					
440.47	20674	7.99	2099	1.9	0.425	16.54	0.045	201	73	28.85
(328.46)	*(91.96)*	*(12.86)*			*(0.258)*	*(3.26)*	*(0.028)*	*(94)*	*(23)*	*(97.70)*

Power take-off MY 2014 - 1000 rpm at 1998 engine rpm, MY 2015-1000 rpm at 1811 engine rpm **Unladen tractor mass** 49260 lb *(22344 kg)*

Note 1: The performance results on this report were obtained from tests carried out on the Case IH Steiger 540 Diesel.

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 110°F *(43°C)*. The performance figures on this Summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **2096A**, Nebraska Summary 961A, January 7, 2015.

Roger M. Hoy
Director

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

TRACTOR SOUND LEVEL WITH CAB	dB(A)
At no load in 4th gear	74.7
Bystander in 16th gear	87.8

TIRES AND WEIGHT	Tested Without Ballast
Rear Tires -No., size, ply & psi *(kPa)*	Four 800/70R38;***;8*(55)*
Front Tires -No., size, ply & psi *(kPa)*	Four 800/70R38;***;12*(85)*
Height of Drawbar	22.5 in *(570 mm)*
Static Weight with operator - Rear	20250 lb *(9185 kg)*
- Front	29185 lb*(13238 kg)*
- Total	49435 lb *(22423 kg)*

DRAWBAR PERFORMANCE AT 1900 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)*	D.E.F Consumption lb/hp.hr *(kg/kW.h)*	Temp.°F*(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
					1st Gear					
329.12 *(245.42)*	48719 *(216.71)*	2.53 *(4.07)*	2151	11.3	0.475 *(0.289)*	14.79 *(2.91)*	0.047 *(0.028)*	201 *(94)*	62 *(17)*	28.90 *(97.87)*
					2nd Gear					
395.53 *(294.94)*	48406 *(215.32)*	3.07 *(4.93)*	2139	10.5	0.460 *(0.280)*	15.25 *(3.00)*	0.046 *(0.028)*	200 *(93)*	60 *(15)*	28.90 *(97.87)*
					3rd Gear					
449.50 *(335.19)*	46206 *(205.53)*	3.65 *(5.87)*	2038	7.3	0.425 *(0.259)*	16.52 *(3.25)*	0.047 *(0.029)*	201 *(94)*	65 *(18)*	28.90 *(97.87)*
					4th Gear					
485.08 *(361.72)*	43080 *(191.63)*	4.23 *(6.80)*	1926	5.7	0.407 *(0.248)*	17.25 *(3.40)*	0.047 *(0.028)*	199 *(93)*	67 *(20)*	28.90 *(97.87)*
					5th Gear					
493.76 *(368.20)*	38103 *(169.49)*	4.86 *(7.82)*	1900	4.2	0.401 *(0.244)*	17.49 *(3.45)*	0.047 *(0.029)*	203 *(95)*	69 *(21)*	28.86 *(97.73)*
					6th Gear					
496.65 *(370.35)*	34687 *(154.30)*	5.37 *(8.64)*	1900	3.6	0.399 *(0.243)*	17.60 *(3.47)*	0.046 *(0.029)*	203 *(95)*	71 *(22)*	28.85 *(97.70)*
					7th Gear					
495.12 *(369.21)*	31354 *(139.47)*	5.92 *(9.53)*	1900	3.0	0.400 *(0.243)*	17.55 *(3.46)*	0.047 *(0.029)*	203 *(95)*	67 *(19)*	28.86 *(97.73)*
					8th Gear					
498.15 *(371.47)*	28666 *(127.51)*	6.52 *(10.49)*	1899	2.8	0.397 *(0.242)*	17.67 *(3.48)*	0.046 *(0.028)*	203 *(95)*	73 *(23)*	28.84 *(97.66)*
					9thGear					
496.22 *(370.03)*	25879 *(115.11)*	7.20 *(11.58)*	1901	2.6	0.400 *(0.243)*	17.55 *(3.46)*	0.046 *(0.028)*	204 *(96)*	73 *(23)*	28.84 *(97.66)*
					10th Gear					
497.98 *(371.34)*	23590 *(104.93)*	7.92 *(12.74)*	1900	2.3	0.399 *(0.242)*	17.61 *(3.47)*	0.046 *(0.028)*	205 *(96)*	73 *(23)*	28.83 *(97.63)*

HYDRAULIC PERFORMANCE

CATEGORY: IVN
Quick Attach: yes
OECD Static test
Maximum force exerted through whole range: 19620 lbs *(87.3 kN)*

Three outlet sets combined

	Standard pump	High flow pump
i) Sustained pressure of the open relief valve:	2877 psi *(198 bar)*	3087 psi *(213 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	43.8 GPM *(165.8 l/min)*	59.1 GPM *(223.6 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	43.3 GPM *(163.7 l/min)*	56.1 GPM *(212.4 l/min)*
Delivery pressure:	2526 psi *(174 bar)*	2710 psi *(187 bar)*
Power:	63.7 HP *(47.5 kW)*	88.7 Hp *(66.2 kW)*

Single outlet set

ii) Pump delivery rate at minimum pressure and rated engine speed:	42.8 GPM *(162.2 l/min)*	43.5 GPM *(164.8 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	42.7 GPM *(161.6 l/min)*	40.5 GPM *(153.5 l/min)*
Delivery pressure:	2024 psi *(139 bar)*	2330 psi *(161 bar)*
Power:	50.4 HP *(37.6 kW)*	55.1 Hp *(41.1 kW)*

MegaFlow system

Two outlet sets combined

	Standard pump	TwinFlow pump
i) Sustained pressure at compensator cutoff:	2877 psi *(198 bar)*	2855 psi *(197 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	43.8 GPM *(165.8 l/min)*	57.3 GPM *(217.0 l/min)*
Combined flow:	101.1 GPM *(382.8 l/min)*	
iii) Pump delivery rate at maximum hydraulic power:	43.3 GPM *(163.7 l/min)*	56.4 GPM *(213.6 l/min)*
Delivery pressure:	2526 psi *(174 bar)*	2479 psi *(171 bar)*
Power:	63.7 HP *(47.5 kW)*	81.6 Hp *(60.9 kW)*

Two outlet sets combined

	High flow pump	TwinFlow pump
i) Sustained pressure at compensator cutoff:	2993 psi *(206 bar)*	2855 psi *(197 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	61.0 GPM *(230.9 l/min)*	57.3 GPM *(217.0 l/min)*
Combined flow:	118.3 GPM *(447.9 l/min)*	
iii) Pump delivery rate at maximum hydraulic power:	56.7 GPM *(214.7 l/min)*	56.4 GPM *(213.6 l/min)*
Delivery pressure:	2517 psi *(174 bar)*	2479 psi *(171 bar)*
Power:	83.3 HP *(62.1 kW)*	81.6 Hp *(60.9 kW)*

HITCH DIMENSIONS AS TESTED - NO LOAD

	inch	*mm*
A	32.6	*827*
B	29.9	*760*
C	23.2	*590*
D	22.0	*558*
E	13.5	*342*
F	13.4	*340*
G	38.2	*970*
H	6.4	*162*
I	22.8	*578*
J	24.8	*630*
K	29.0	*736*
L	56.3	*1431*
*L'	63.6	*1615*
M	34.3	*871*
N	46.5	*1181*
O	7.9	*200*
P	48.6	*1234*
Q	42.2	*1072*
R	39.8	*1010*