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Test 1910A: New Holland TJ480 Diesel 16-Speed

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NEBRASKA OECD TRACTOR TEST 1910A - SUMMARY 583
NEW HOLLAND TJ 480 DIESEL
16 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—1000 rpm)					
429.00 *(319.91)*	1998	25.28 *(95.70)*	0.413 *(0.251)*	16.97 *(3.34)*	
Maximum Power (1 Hour)					
483.15 *(360.28)*	1799	26.85 *(101.66)*	0.389 *(0.237)*	17.99 *(3.54)*	
VARYING POWER AND FUEL CONSUMPTION					
429.00 *(319.91)*	1998	25.28 *(95.70)*	0.413 *(0.251)*	16.97 *(3.34)*	Air temperature
85% load level not run due to vibration					80°F *(27°C)*
3/4 of 85% load level not run due to vibration					Relative humidity
1/2 of 85% load level not run due to vibration					29%
97.18 *(72.47)*	2138	10.57 *(40.02)*	0.761 *(0.463)*	9.19 *(1.81)*	Barometer
2.17 *(1.62)*	2166	5.00 *(18.93)*	16.136 *(9.815)*	0.43 *(0.09)*	29.05" Hg *(98.37 kPa)*

Maximum torque -1629 lb.-ft. *(2208 Nm)* at 1305 rpm
Maximum torque rise - 44.2%
Torque rise at 1601 engine rpm - 34%
Power increase at 1799 engine rpm - 12.6%

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)*	Hp.hr/gal *(kW.h/l)*	Temp.°F *(°C)* cool-ing med	Air dry bulb	Barom. inch Hg *(kPa)*
Maximum Power—4th Gear									
391.15 *(291.68)*	35158 *(156.39)*	4.17 *(6.71)*	1996	4.6	0.451 *(0.274)*	15.54 *(3.06)*	193 *(89)*	49 *(9)*	29.05 *(98.37)*
75% of Pull at Maximum Power—4th Gear									
305.85 *(228.07)*	26418 *(117.51)*	4.34 *(6.99)*	2045	3.3	0.505 *(0.307)*	13.88 *(2.73)*	190 *(88)*	63 *(17)*	29.03 *(98.31)*
50% of Pull at Maximum Power—4th Gear									
209.29 *(156.07)*	17630 *(78.42)*	4.45 *(7.16)*	2074	2.1	0.593 *(0.361)*	11.82 *(2.33)*	186 *(85)*	64 *(18)*	29.03 *(98.31)*
75% of Pull at Reduced Engine Speed—7th Gear									
305.15 *(227.55)*	26381 *(117.35)*	4.34 *(6.98)*	1478	3.2	0.453 *(0.276)*	15.47 *(3.05)*	187 *(86)*	64 *(18)*	29.03 *(98.31)*
50% of Pull at Reduced Engine Speed—7th Gear									
209.55 *(156.26)*	17645 *(78.49)*	4.45 *(7.17)*	1500	2.0	0.486 *(0.296)*	14.44 *(2.84)*	184 *(84)*	65 *(18)*	29.03 *(98.31)*

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska 68583-0832
Dates of tests: September 28 - October 24, 2007

Manufacturer: Case Corporation, 700 State Street Racine, Wi. 53404 USA.

FUEL, OIL and TIME: Fuel No. 2 Diesel **Specific gravity converted to 60°/60° F *(15°/15°C)*** 0.8407 **Fuel weight** 7.000 lbs/gal *(0.839 kg/l)* **Oil SAE** 15W40 **API service classification** CI-4 **Transmission and hydraulic lubricant** NH Ambra Hy-Tran Ultra fluid **Front and rear axle lubricant** NH Ambra Hy-Tran Ultra fluid **Total time engine was operated** 20.0 hours

ENGINE: Make Cummins Diesel **Type** six cylinder vertical with turbocharger and air to air aftercooler **Serial No.** 79234351 **Crankshaft** lengthwise **Rated engine speed** 2000 **Bore and stroke** 5.394" x 6.654" *(137.0 mm x 169.0 mm)* **Compression ratio** 17.0 to 1 **Displacement** 912 cu in *(14945 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, radiator for transmission and hydraulic oil **Fuel filter** one paper element **Fuel cooler** radiator for returned fuel **Muffler** vertical **Cooling medium temperature control** one thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 173.4 - 180.8 lb/h *(78.7 - 82.0 kg/h)* **High idle:** 2135 - 2175 rpm **Turbo boost:** nominal 22.5 - 25.4 psi *(155 - 175 kPa)* as measured 23.6 psi *(163 kPa)*

CHASSIS: Type four wheel drive with triples **Serial No.** *Z7F105636* **Tread width** rear 73.6" *(1870 mm)* to 187.6" *(4766 mm)* front 73.6"*(1870 mm)* to 187.6" *(4766 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 2.54 *(4.08)* second 3.05 *(4.91)* third 3.68 *(5.93)* fourth 4.44 *(7.14)* fifth 5.10 *(8.20)* sixth 5.60 *(9.01)* seventh 6.14 *(9.88)* eighth 6.74 *(10.85)* ninth 7.41 *(11.93)* tenth 8.15 *(13.11)* eleventh 8.93 *(14.37)* twelfth 9.81 *(15.79)* thirteenth 11.27 *(18.13)* fourteenth 13.56 *(21.83)* fifteenth 16.39 *(26.38)* sixteenth 19.73 *(31.75)* reverse 3.84 *(6.18)*, 8.48 *(13.65)* **Clutch** multiple wet disc electro-hydraulically operated by foot pedal **Brakes** single wet disc hydraulically actuated by foot pedal **Steering** hydrostatic and articulated **Power take-off** 1000 rpm at 1998 engine rpm **Unladen tractor mass** 44470 lb *(20171 kg)*

DRAWBAR PERFORMANCE at 1800 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				
381.43 *(284.44)*	44623 *(198.49)*	3.21 *(5.16)*	1966	10.4	0.477 *(0.290)*	14.70 *(2.90)*	194 *(90)*	52 *(11)*	29.05 *(98.37)*
					4th Gear				
419.00 *(312.45)*	43626 *(194.06)*	3.60 *(5.80)*	1799	8.6	0.443 *(0.269)*	15.85 *(3.12)*	188 *(86)*	51 *(11)*	29.05 *(98.37)*
					5th Gear				
432.87 *(322.79)*	37808 *(168.18)*	4.29 *(6.91)*	1802	5.7	0.431 *(0.262)*	16.29 *(3.21)*	192 *(89)*	49 *(9)*	29.06 *(98.41)*
					6th Gear				
435.62 *(324.84)*	34324 *(152.68)*	4.76 *(7.66)*	1798	4.5	0.422 *(0.256)*	16.63 *(3.28)*	192 *(89)*	49 *(9)*	29.06 *(98.41)*
					7th Gear				
434.14 *(323.74)*	31077 *(138.24)*	5.24 *(8.43)*	1799	4.1	0.424 *(0.258)*	16.53 *(3.26)*	192 *(89)*	61 *(16)*	29.04 *(98.34)*
					8th Gear				
431.97 *(322.12)*	27768 *(123.52)*	5.83 *(9.39)*	1812	3.5	0.434 *(0.264)*	16.17 *(3.19)*	192 *(89)*	62 *(17)*	29.04 *(98.34)*
					9th Gear				
431.59 *(321.84)*	25237 *(112.26)*	6.41 *(10.32)*	1806	3.2	0.435 *(0.264)*	16.13 *(3.18)*	191 *(88)*	63 *(17)*	29.03 *(98.31)*
					10th Gear				
437.22 *(326.04)*	23264 *(103.48)*	7.05 *(11.34)*	1800	2.8	0.426 *(0.259)*	16.44 *(3.24)*	190 *(88)*	64 *(18)*	29.03 *(98.31)*
					11th Gear				
433.93 *(323.58)*	20993 *(93.38)*	7.75 *(12.47)*	1801	2.4	0.429 *(0.261)*	16.34 *(3.22)*	190 *(88)*	64 *(18)*	29.03 *(98.31)*
					12th Gear				
437.62 *(326.33)*	19253 *(85.64)*	8.52 *(13.72)*	1800	2.3	0.428 *(0.260)*	16.39 *(3.23)*	190 *(88)*	64 *(18)*	29.03 *(98.31)*

TRACTOR SOUND LEVEL WITH DELUXE CAB	dB(A)
At no load in 4th gear	75.2
Bystander in 16th gear	91.2

TIRES AND WEIGHT	Tested without ballast
Rear tires - No.,size, ply & psi*(kPa)*	Six 520/85R42;**;14*(95)*
Front tires - No.,size, ply & psi*(kPa)*	Six 520/85R42;**;15*(105)*
Height of Drawbar	21.0 in *(535 mm)*
Static Weight with operator- Rear	18840 lb *(8546 kg)*
-Front	25805 lb *(11705 kg)*
-Total	44645 lb *(20251 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

Note: The test results on this Summary were obtained from tests carried out on the Case IH Steiger 480 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The pull in 3rd gear was limited to avoid excessive tractor bouncing. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 110°F *(43°C)*. This tractor did not meet the manufacturer's claim of 75 dB(A) cab sound level. The performance figures on this Summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1910A**, Nebraska Summary 583, February 8, 2008.

Roger M. Hoy
Director

M.F. Kocher
R.E. Yoder
J.A. Smith
Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (OECD Static Test)

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

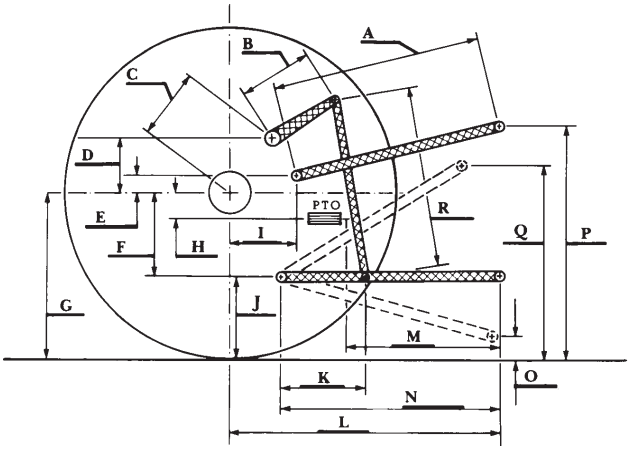
	Standard pump	High flow pump
i) Sustained pressure of the open relief valve:	2880 psi *(199 bar)*	2990 psi *(206 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	40.6 GPM *(153.7 l/min)*	55.8 GPM *(211.2 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	37.7 GPM *(142.7 l/min)*	54.3 GPM *(205.5 l/min)*
Delivery pressure:	2805 psi *(193 bar)*	2604 psi *(180 bar)*
Power:	61.7 HP *(46.0 kW)*	82.5 Hp *(61.5 kW)*

TwinFlow system

	Main pump	TwinFlow pump
i) Sustained pressure at compensator cutoff:	3026 psi *(208 bar)*	3041 psi *(210 bar)*
ii) Pump delivery rate at minimum pressure and rated engine speed:	56.6 GPM *(214.2 l/min)*	37.7 GPM *(142.6 l/min)*
Combined flow:	94.3 GPM *(356.8 l/min)*	
iii) Pump delivery rate at maximum hydraulic power:	55.4 GPM *(209.5 l/min)*	35.9 GPM *(135.9 l/min)*
Delivery pressure:	2430 psi *(167 bar)*	2861 psi *(197 bar)*
Power:	78.5 HP *(58.5 kW)*	59.9 Hp *(44.7 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*



New Holland TJ 480 Diesel

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln