NEBRASKA OECD TRACTOR TEST 1996B–SUMMARY 771B
NEW HOLLAND T7070 DIESEL
CONTINUOUSLY VARIABLE TRANSMISSION

POWER TAKE-OFF PERFORMANCE
DYNO-TEST MODE (SEE NOTE)

Power HP *(kW)*	Crank shaft speed rpm	Diesel Consumption 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—1162 rpm)					
204.77 *(152.69)*	2200	12.64 *(47.84)*	0.436 *(0.265)*	16.20 *(3.19)*	
Standard Power Take-off Speed (1000 rpm)					
211.76 *(157.91)*	1893	11.91 *(45.09)*	0.397 *(0.241)*	17.78 *(3.50)*	
Maximum Power (1 hour)					
214.87 *(160.23)*	1800	11.83 *(44.79)*	0.389 *(0.236)*	18.16 *(3.58)*	
VARYING POWER AND FUEL CONSUMPTION					
204.77 *(152.69)*	2199	12.64 *(47.84)*	0.436 *(0.265)*	16.20 *(3.19)*	Air temperature
178.47 *(133.08)*	2254	11.64 *(44.07)*	0.460 *(0.280)*	15.33 *(3.02)*	75°F *(24°C)*
135.59 *(101.11)*	2286	9.68 *(36.65)*	0.504 *(0.307)*	14.00 *(2.76)*	Relative humidity
91.37 *(68.13)*	2310	7.27 *(27.50)*	0.561 *(0.341)*	12.58 *(2.48)*	52%
46.32 *(34.54)*	2334	4.90 *(18.53)*	0.746 *(0.454)*	9.46 *(1.86)*	Barometer
5.68 *(4.24)*	2354	2.86 *(10.82)*	3.550 *(2.159)*	1.99 *(0.39)*	28.72" Hg *(97.26 kPa)*

Maximum torque - 670 lb.-ft. *(909 Nm)* at 1450 rpm
Maximum torque rise - 37.1%
Torque rise at 1749 engine rpm - 31%
Power increase at 1800 engine rpm - 4.9%

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—5.6 mph *(9.0 km/h)*									
171.98 *(128.24)*	12254 *(54.51)*	5.27 *(8.47)*	2200	3.0	0.528 *(0.321)*	13.36 *(2.63)*	195 *(91)*	61 *(16)*	28.77 *(97.43)*
75% of Pull at Maximum Power—5.6 mph *(9.0 km/h)*									
130.36 *(97.21)*	9217 *(41.00)*	5.31 *(8.54)*	2241	2.4	0.580 *(0.353)*	12.16 *(2.40)*	192 *(89)*	61 *(16)*	28.78 *(97.46)*
50% of Pull at Maximum Power—5.6 mph *(9.0 km/h)*									
88.70 *(66.14)*	6223 *(27.68)*	5.35 *(8.60)*	2265	1.6	0.664 *(0.404)*	10.63 *(2.09)*	192 *(89)*	61 *(16)*	28.78 *(97.46)*
75% of Pull at Reduced Engine Speed—8.1 mph *(13.0 km/h)*									
130.44 *(97.27)*	9249 *(41.14)*	5.29 *(8.51)*	1522	2.5	0.494 *(0.301)*	14.27 *(2.81)*	190 *(88)*	61 *(16)*	28.80 *(97.53)*
50% of Pull at Reduced Engine Speed—8.1 mph *(13.0 km/h)*									
88.78 *(66.20)*	6188 *(27.52)*	5.38 *(8.66)*	1535	1.6	0.546 *(0.332)*	12.93 *(2.55)*	187 *(86)*	61 *(16)*	28.80 *(97.53)*

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

Dates of tests: June 9 - 13, 2011

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)*** 0.8476 **Fuel weight** 7.057 lbs/gal *(0.846 kg/l)* **Oil SAE** 15W40 **API service classification** CI-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid **Total time engine was operated:** 22.0 hours

ENGINE: Make F.P.T. Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler. **Serial No.** *000644487* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" *(104.0 mm x 132.0 mm)* **Compression ratio** 16.5 to 1 **Displacement** 410 cu in *(6728 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 **Fuel cooler** radiator for pump return fuel **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

ENGINE OPERATING PARAMETERS: Fuel rate: 85.0 - 91.9 lb/h *(38.9 - 42.1 kg/h)* **High idle:** 2175 - 2225 rpm - PTO standard mode, 2280 - 2330 rpm -drawbar operations, 2325-2375 rpm-Dyno-Test mode **Turbo boost:** nominal 23.9 - 26.8 psi *(165 - 185 kPa)* as measured 25.2 psi *(174 kPa)*

CHASSIS: Type front wheel assist **SerialNo.** *Z9RH03909* **Tread width** rear 64.0" *(1626 mm)* to 129.0" *(3277 mm)* front 61.4" *(1560 mm)* to 89.0" *(2260 mm)* **Wheelbase** 113.5" *(2884 mm)* **Hydraulic control system** direct engine drive **Transmission** Infinitely variable with two mechanical ranges and automatic shifting between ranges. **Nominal travel speeds mph *(km/h)*** forward - 0-25.0 mph *(0-40 km/h)* reverse - 0-25.0 mph *(0-40 km/h)* **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** 540 rpm at 1950 engine rpm or 1000 rpm at 1893 engine rpm **Unladen tractor mass** 19980 lb *(9063 kg)*

DRAWBAR PERFORMANCE

UNBALLASTED - FRONT DRIVE ENGAGED
MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

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)*
				3.2 mph *(5.2 km/h)*					
141.23 *(105.32)*	19462 *(86.57)*	2.72 *(4.38)*	2222	13.2	0.632 *(0.384)*	11.17 *(2.20)*	196 *(91)*	66 *(19)*	28.74 *(97.33)*
				3.7 mph *(6.0 km/h)*					
161.41 *(120.36)*	18105 *(80.54)*	3.34 *(5.38)*	2199	7.5	0.565 *(0.344)*	12.49 *(2.46)*	194 *(90)*	66 *(19)*	28.75 *(97.36)*
				4.2 mph *(6.8 km/h)*					
169.57 *(126.45)*	16404 *(72.97)*	3.88 *(6.24)*	2200	5.4	0.538 *(0.327)*	13.11 *(2.58)*	194 *(90)*	67 *(19)*	28.77 *(97.43)*
				4.7 mph *(7.5 km/h)*					
170.81 *(127.37)*	14735 *(65.54)*	4.35 *(6.99)*	2200	3.8	0.534 *(0.325)*	13.23 *(2.61)*	196 *(91)*	61 *(16)*	28.76 *(97.39)*
				5.0 mph *(8.0 km/h)*					
171.70 *(128.04)*	13816 *(61.46)*	4.66 *(7.50)*	2201	3.5	0.530 *(0.323)*	13.31 *(2.62)*	196 *(91)*	61 *(16)*	28.76 *(97.39)*
				5.6 mph *(9.0 km/h)*					
171.98 *(128.24)*	12254 *(54.51)*	5.27 *(8.47)*	2200	3.0	0.528 *(0.321)*	13.36 *(2.63)*	195 *(91)*	61 *(16)*	28.77 *(97.43)*
				6.2 mph *(10.0 km/h)*					
171.73 *(128.06)*	10976 *(48.82)*	5.87 *(9.44)*	2200	2.7	0.529 *(0.322)*	13.34 *(2.63)*	193 *(89)*	59 *(15)*	28.81 *(97.56)*
				6.8 mph *(11.0 km/h)*					
169.43 *(126.34)*	9815 *(43.66)*	6.48 *(10.42)*	2199	2.4	0.535 *(0.325)*	13.19 *(2.60)*	193 *(89)*	59 *(15)*	28.74 *(97.33)*
				7.5 mph *(12.0 km/h)*					
167.12 *(124.62)*	8860 *(39.41)*	7.08 *(11.39)*	2201	2.2	0.541 *(0.329)*	13.05 *(2.57)*	193 *(89)*	59 *(15)*	28.82 *(97.60)*
				8.1 mph *(13.0 km/h)*					
164.50 *(122.67)*	8040 *(35.76)*	7.67 *(12.34)*	2198	2.0	0.552 *(0.335)*	12.80 *(2.52)*	192 *(89)*	61 *(16)*	28.79 *(97.49)*
				8.7 mph *(14.0 km/h)*					
171.09 *(127.58)*	7729 *(34.38)*	8.31 *(13.37)*	2199	1.9	0.532 *(0.324)*	13.27 *(2.61)*	193 *(89)*	61 *(16)*	28.79 *(97.49)*

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load at 4.6 mph *(7.5 km/h)* engine speed - 2320 rpm	68.1	67.6
At no load at 4.6 mph *(7.5 km/h)* engine speed - 1130 rpm	64.1	63.2
Bystander		87.2

TIRES AND WEIGHT

	Tested Without Ballast
Rear Tires - No., size, ply & psi *(kPa)*	Two 520/85R42;**;16 *(110)*
Front Tires - No., size, ply & psi *(kPa)*	Two 420/90R30;**;17 *(115)*
Height of Drawbar	18.5 in *(470 mm)*
Static Weight with operator - Rear	11375 lb *(5160 kg)*
- Front	8780 lb *(3982 kg)*
- Total	20155 lb *(9142 kg)*

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.

NOTE 1: This tractor has a PTO overspeed protection system which prevents the engine from developing full PTO power at the 2200 rpm rated speed (which results in a PTO speed above the maximum allowable). Service equipment and techniques not usable by an operator were used to set the engine in Dyno-Test mode to verify the PTO power claim at rated speed. In Standard Mode operation this tractor develops full power at standard PTO speed, but will not develop full PTO power at rated engine speed. The power and speed at the PTO in Dyno Test Mode and Standard Mode are shown on the last page of this report.

Note 2: The test results on this Summary were obtained from tests carried out on the Case IH Magnum 225 Diesel.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The manufacturer's 3 point lift claim of 10900 lbs *(4945 kg)* with 100 mm lift cylinders was not verified. For the maximum power tests the fuel temperature at the primary fuel filter was maintained at 104°F *(40°C)*. The performance results 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. **1996B**, Nebraska Summary 771B, September 20, 2011.

Roger M. Hoy
Director

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

DRAWBAR PERFORMANCE@1800 Engine rpm

UNBALLASTED - FRONT DRIVE ENGAGED

MAXIMUM POWER AT SELECTED TRAVEL SPEEDS

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)*	Temp.°F *(°C)* cool-ing med	Temp.°F *(°C)* Air dry bulb	Barom. inch Hg *(kPa)*
				3.2 mph *(5.2 km/h)*					
141.41 *(105.45)*	19480 *(86.65)*	2.72 *(4.38)*	2221	13.2	0.634 *(0.386)*	11.13 *(2.19)*	195 *(91)*	66 *(19)*	28.74 *(97.33)*
				3.7 mph *(6.0 km/h)*					
162.38 *(121.08)*	18468 *(82.15)*	3.30 *(5.31)*	2170	7.7	0.562 *(0.342)*	12.57 *(2.48)*	195 *(90)*	66 *(19)*	28.75 *(97.36)*
				4.2 mph *(6.8 km/h)*					
171.46 *(127.86)*	17555 *(78.09)*	3.66 *(5.89)*	2100	6.5	0.523 *(0.318)*	13.50 *(2.66)*	195 *(90)*	67 *(19)*	28.79 *(97.49)*
				4.7 mph *(7.5 km/h)*					
168.90 *(125.95)*	16638 *(74.01)*	3.81 *(6.13)*	1952	5.3	0.508 *(0.309)*	13.90 *(2.74)*	194 *(90)*	67 *(19)*	28.82 *(97.60)*
				5.0 mph *(8.0 km/h)*					
171.25 *(127.70)*	16078 *(71.52)*	4.00 *(6.43)*	1909	4.8	0.499 *(0.304)*	14.14 *(2.79)*	194 *(90)*	66 *(19)*	28.81 *(97.56)*
				5.6 mph *(9.0 km/h)*					
173.87 *(129.65)*	15295 *(68.03)*	4.26 *(6.86)*	1800	4.1	0.486 *(0.295)*	14.53 *(2.86)*	191 *(88)*	61 *(16)*	28.76 *(97.39)*
				6.2 mph *(10.0 km/h)*					
175.89 *(131.16)*	13828 *(61.51)*	4.77 *(7.68)*	1800	3.5	0.478 *(0.291)*	14.76 *(2.91)*	192 *(89)*	59 *(15)*	28.80 *(97.53)*
				6.8 mph *(11.0 km/h)*					
175.55 *(130.91)*	12538 *(55.77)*	5.25 *(8.45)*	1802	3.1	0.480 *(0.292)*	14.69 *(2.89)*	192 *(89)*	59 *(15)*	28.76 *(97.39)*
				7.5 mph *(12.0 km/h)*					
173.30 *(129.23)*	11268 *(50.12)*	5.77 *(9.29)*	1800	2.8	0.486 *(0.296)*	14.51 *(2.86)*	191 *(88)*	60 *(15)*	28.80 *(97.53)*
				8.1 mph *(13.0 km/h)*					
173.20 *(129.15)*	10368 *(46.12)*	6.27 *(10.08)*	1800	2.6	0.488 *(0.297)*	14.47 *(2.85)*	191 *(88)*	61 *(16)*	28.77 *(97.43)*
				8.7 mph *(14.0 km/h)*					
179.74 *(134.03)*	9968 *(44.34)*	6.76 *(10.88)*	1801	2.5	0.469 *(0.285)*	15.06 *(2.97)*	190 *(88)*	61 *(16)*	28.77 *(97.43)*
				9.3 mph *(15.0 km/h)*					
182.04 *(135.75)*	9411 *(41.86)*	7.26 *(11.68)*	1799	2.3	0.464 *(0.282)*	15.20 *(2.99)*	190 *(88)*	61 *(16)*	28.78 *(97.46)*
				9.9 mph *(16.0 km/h)*					
182.55 *(136.12)*	8827 *(39.26)*	7.76 *(12.48)*	1801	2.2	0.462 *(0.281)*	15.29 *(3.01)*	191 *(88)*	61 *(16)*	28.77 *(97.43)*
				10.6 mph *(17.0 km/h)*					
181.65 *(135.46)*	8288 *(36.86)*	8.22 *(13.23)*	1800	2.1	0.462 *(0.281)*	15.26 *(3.01)*	191 *(88)*	61 *(16)*	28.77 *(97.43)*

HYDRAULIC PERFORMANCE

CATEGORY: III
Quick Attach: None
OECD Static test

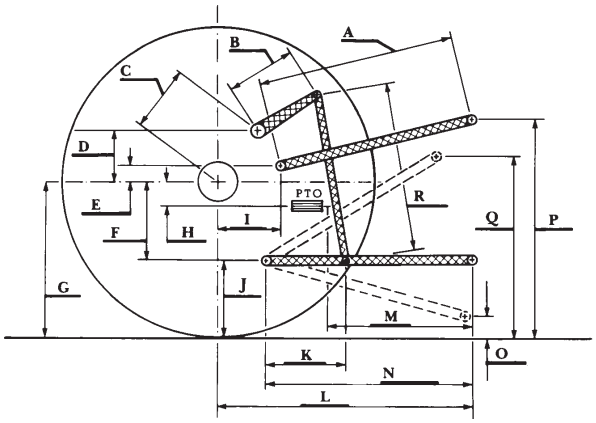
Maximum force exerted through whole range:	15625 lbs *(69.5 kN)* Lift cylinders 2x110 mm
i) Sustained pressure of the open relief valve:	3050 psi *(210 bar)*
	two outlet sets combined
ii) Pump delivery rate at minimum pressure:	43.4 GPM *(164.3 l/min)*
iii) Pump delivery rate at maximum	
hydraulic power:	40.2 GPM *(152.3 l/min)*
Delivery pressure:	2755 psi *(190 bar)*
Power:	64.6 HP *(48.2 kW)*
	single outlet set
ii) Pump delivery rate at minimum pressure:	41.4 GPM *(156.6 l/min)*
iii) Pump delivery rate at maximum	
hydraulic power:	39.1 GPM *(148.0 l/min)*
Delivery pressure:	2320 psi *(160 bar)*
Power:	52.9 HP *(39.5 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	3050 *(210)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	150 *(65)*
Location:	hydraulic sump
Category:	III
Quick attach:	None

SAE Static Test—System pressure 2755 psi *(190 Bar)*

Hitch point distance to ground level in. *(mm)*	19.7 *(500)*	25.8 *(655)*	33.7 *(855)*	41.5 *(1055)*	47.0 *(1195)*
Lift force on frame lb	20145	20145	19940	18975	18120
" " " " " " *(kN)*	*(89.6)*	*(89.6)*	*(88.7)*	*(84.4)*	*(80.6)*



HITCH DIMENSIONS AS TESTED—NO LOAD

	OECD test		SAE test	
	inch	*mm*	inch	*mm*
A	32.3	*820*	31.5	*800*
B	15.0	*380*	15.0	*380*
C	15.1	*383*	15.1	*383*
D	14.6	*372*	14.6	*372*
E	8.5	*217*	8.5	*217*
F	10.6	*270*	10.6	*270*
G	36.4	*925*	36.4	*925*
H	2.4	*60*	2.4	*60*
I	19.7	*500*	19.7	*500*
J	25.8	*655*	25.8	*655*
K	26.8	*682*	26.8	*682*
L	48.2	*1224*	48.2	*1224*
M	23.1	*587*	23.1	*587*
N	38.3	*974*	38.3	*974*
O	9.1	*230*	17.7	*450*
P	52.8	*1340*	55.6	*1214*
Q	39.2	*995*	45.1	*1145*
R	40.2	*1022*	34.4	*875*

NEW HOLLAND T7070 DIESEL

Institute of Agriculture and Natural Resources
University of Nebraska–Lincoln

Comparison of Standard Mode and Dyno Test Mode PTO power performance

Standard Mode			
Engine Speed (rpm)	PTO Speed (rpm)	Power (hp)	Power (kW)
2194	1159	4.6	3.5
2184	1155	22.0	16.4
2173	1148	43.7	32.6
2166	1145	65.4	48.8
2151	1136	86.5	64.5
2142	1132	107.8	80.4
2121	1120	149.3	111.3
2101	1110	190.2	141.8
1998	1056	213.1	158.9
1900	1004	214.7	160.1
1893	1000	214.2	159.7
1800	951	218.6	163.0
1700	899	214.0	159.6
1599	845	204.2	152.3
1499	791	191.3	142.6
1400	740	179.8	134.1
1300	687	164.0	122.3
1200	634	147.9	110.3
1100	581	131.0	97.7

Dyno Test Mode			
Engine Speed (rpm)	PTO Speed (rpm)	Power (hp)	Power (kW)
2354	1244	5.7	4.2
2334	1235	46.3	34.5
2310	1221	91.4	68.1
2286	1207	135.6	101.1
2254	1191	178.5	133.1
2199	1163	205.1	152.9
2150	1136	210.5	156.9
2099	1109	210.5	157.0
2001	1057	208.7	155.6
1900	1004	211.2	157.5
1893	1000	210.4	156.9
1800	951	215.1	160.4
1699	898	211.2	157.5
1600	845	202.2	150.8
1499	792	189.7	141.5
1401	740	177.5	132.4
1301	687	162.1	120.9
1200	634	146.3	109.1
1100	581	129.1	96.3