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2016

## Test 2159: New Holland TS6.140

Nebraska Tractor Test Lab

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# NEBRASKA OECD TRACTOR TEST 2159—SUMMARY 1040

## NEW HOLLAND TS6.140 DIESEL

### 16 SPEED

Chassis serial numbers NT00001M and higher

#### POWER TAKE-OFF PERFORMANCE

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)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—629 rpm)						
118.06 (88.04)	2201	7.22 (27.32)	0.429 (0.261)	16.36 (3.22)	0.49 (1.87)	
Standard Power Take-off Speed (540 rpm)						
122.93 (91.67)	1890	6.88 (26.04)	0.392 (0.239)	17.87 (3.52)	0.48 (1.83)	
Maximum Power (1 hour)						
122.93 (91.67)	1890	6.88 (26.04)	0.392 (0.239)	17.87 (3.52)	0.48 (1.83)	

#### VARYING POWER AND FUEL CONSUMPTION

118.06 (88.04)	2201	7.22 (27.32)	0.429 (0.261)	16.36 (3.22)	0.49 (1.87)	Air temperature
102.11 (76.14)	2241	6.50 (24.61)	0.446 (0.272)	15.70 (3.09)	0.43 (1.64)	75°F (24°C)
77.50 (57.79)	2268	5.39 (20.39)	0.487 (0.296)	14.39 (2.83)	0.36 (1.36)	Relative humidity
52.41 (39.08)	2297	4.34 (16.41)	0.580 (0.353)	12.09 (2.38)	0.24 (0.89)	59%
26.51 (19.76)	2325	3.27 (12.37)	0.864 (0.526)	8.11 (1.60)	0.15 (0.59)	Barometer
0.96 (0.71)	2349	2.30 (8.71)	16.862 (10.257)	0.42 (0.08)	0.00 (0.01)	28.97" Hg (98.11 kPa)

Maximum torque - 419 lb.-ft. (567 Nm) at 1502 rpm

Maximum torque rise - 48.6%

Torque rise at 1760 engine rpm - 30%

Power increase at 1890 engine rpm - 4.1%

#### 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)	D.E.F. Consumption lb/hp.hr (kg/kW.h)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—8th (L4R) Gear										
100.47 (74.92)	6421 (28.56)	5.87 (9.45)	2200	7.5	0.503 (0.306)	13.94 (2.75)	0.031 (0.019)	182 (83)	69 (20)	28.96 (98.07)
75% of Pull at Rated Engine Speed—8th (L4R) Gear										
79.35 (59.17)	4813 (21.41)	6.18 (9.95)	2252	4.9	0.535 (0.325)	13.11 (2.58)	0.041 (0.025)	182 (83)	76 (25)	28.92 (97.93)
50% of Pull at Rated Engine Speed—8th (L4R) Gear										
54.72 (40.80)	3212 (14.29)	6.39 (10.28)	2285	3.0	0.617 (0.375)	11.36 (2.24)	0.046 (0.028)	182 (83)	77 (25)	28.92 (97.93)
75% of Pull at Reduced Engine Speed—10th (H1R) Gear										
79.44 (59.24)	4810 (21.40)	6.19 (9.96)	1648	4.4	0.439 (0.267)	15.95 (3.14)	0.040 (0.024)	180 (82)	78 (25)	28.93 (97.97)
50% of Pull at Reduced Engine Speed—10th (H1R) Gear										
54.65 (40.75)	3191 (14.19)	6.42 (10.33)	1680	2.6	0.479 (0.291)	14.65 (2.89)	0.043 (0.026)	180 (82)	77 (25)	28.91 (97.90)

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

**Dates of tests:** August 31 to September 7, 2016

**Manufacturer:** CNH De Mexico, Queretaro Mexico

**CONSUMABLE Fluids, OIL and TIME: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.8418 **Fuel weight** 7.009 lbs/gal (0.840 kg/l) **Diesel Exhaust Fluid (DEF)** 32% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 10W30 **API service classification** CJ-4 **Transmission, hydraulic and front axle lubricant** New Holland Ambra Multi G134 fluid **Total time engine was operated** 20.0 hours

**ENGINE: Make** F.P.T. NEF **Diesel Type** Four cylinder vertical with turbocharger, air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment. **Serial No.** 001388055 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" (104.0 mm x 132.0 mm) **Compression ratio** 17.0 to 1 **Displacement** 274 cu in (4485 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 **Exhaust** DOC (diesel oxidation catalyst) and SCR (selective catalyst reduction) integrated within a vertical muffler **Cooling medium temperature control** one thermostat

**ENGINE OPERATING PARAMETERS: Fuel rate:** 48.7 - 52.5 lb/h (22.1 - 23.8 kg/h) **High idle:** 2325 - 2375 rpm **Turbo boost:** nominal 18.1 - 19.6 psi (125 - 135 kPa) as measured 19.1 psi (132 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** NT01006M **Tread width** rear 64.0" (1625 mm) to 93.0" (2360 mm) front 64.0" (1625 mm) to 86.0" (2184 mm) **Wheelbase** 103.5" (2630 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (2) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.75 (2.81) second 2.14 (3.45) third 2.56 (4.12) fourth 3.14 (5.05) fifth 3.66 (5.89) sixth 4.48 (7.21) seventh 5.03 (8.10) eighth 6.17 (9.93) ninth 6.88 (11.07) tenth 8.43 (13.57) eleventh 10.08 (16.22) twelfth 12.35 (19.88) thirteenth 14.39 (23.16) fourteenth 17.64 (28.38) fifteenth 19.80 (31.87) sixteenth 24.27 (39.06) reverse 2.22 (3.57), 3.24 (5.22), 4.64 (7.46), 6.38 (10.27), 8.72 (14.03), 12.77 (20.55), 18.24 (29.35), 25.10 (40.39) **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 1890 engine rpm or 1000 rpm at 2049 engine rpm **Unladen tractor mass** 11100 lb (5035 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)	D.E.F Consumption lb/hp.hr (kg/kW.h)	Temp.°F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
5th (L3T) Gear										
79.30 (59.13)	9118 (40.56)	3.27 (5.25)	2241	15.0	0.581 (0.353)	12.07 (2.38)	0.043 (0.026)	182 (83)	71 (22)	28.93 (97.97)
6th (L3R) Gear										
93.73 (69.89)	8837 (39.31)	3.98 (6.41)	2202	13.7	0.539 (0.328)	13.00 (2.56)	NA (NA)	182 (83)	70 (21)	28.94 (98.00)
7th (L4T) Gear										
96.12 (71.68)	7793 (34.66)	4.63 (7.44)	2200	10.6	0.526 (0.320)	13.32 (2.62)	0.037 (0.022)	182 (83)	70 (21)	28.95 (98.04)
8th (L4R) Gear										
100.47 (74.92)	6421 (28.56)	5.87 (9.45)	2200	7.5	0.503 (0.306)	13.94 (2.75)	0.031 (0.019)	182 (83)	69 (20)	28.96 (98.07)
9th (H1T) Gear										
101.21 (75.47)	5740 (25.53)	6.61 (10.64)	2200	6.5	0.500 (0.304)	14.03 (2.76)	0.041 (0.025)	182 (83)	72 (22)	28.94 (98.00)
10th(H1R) Gear										
102.64 (76.53)	4668 (20.76)	8.25 (13.27)	2200	4.8	0.492 (0.299)	14.25 (2.81)	0.030 (0.018)	183 (84)	74 (23)	28.93 (97.97)

## **UNBALLASTED - FRONT DRIVE ENGAGED-1890 ENGINE RPM**

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)
5th (L3T) Gear										
79.39 (59.20)	9141 (40.66)	3.26 (5.25)	2240	15.0	0.580 (0.353)	12.09 (2.38)	0.042 (0.025)	182 (83)	71 (21)	28.94 (98.00)
6th (L3R) Gear										
93.79 (69.94)	8853 (39.38)	3.98 (6.40)	2200	13.7	0.539 (0.328)	13.01 (2.56)	NA (NA)	182 (83)	70 (21)	28.95 (98.04)
7th (L4T) Gear										
97.24 (72.51)	8091 (35.99)	4.51 (7.26)	2160	11.2	0.521 (0.317)	13.45 (2.65)	0.043 (0.026)	182 (83)	69 (21)	28.93 (97.97)
8th (L4R) Gear										
102.66 (76.55)	7925 (35.25)	4.86 (7.82)	1890	10.6	0.471 (0.287)	14.88 (2.93)	0.040 (0.024)	180 (82)	70 (21)	28.95 (98.04)
9th (H1T) Gear										
104.01 (77.56)	7021 (31.23)	5.56 (8.94)	1890	8.4	0.465 (0.283)	15.06 (2.97)	0.039 (0.024)	181 (83)	73 (23)	28.94 (98.00)
10th(H1R) Gear										
107.30 (80.01)	5764 (25.64)	6.98 (11.23)	1890	6.2	0.449 (0.273)	15.59 (3.07)	0.038 (0.023)	182 (83)	74 (23)	28.94 (98.00)
11th(H2T) Gear										
105.00 (78.29)	4643 (20.65)	8.48 (13.65)	1889	4.3	0.459 (0.279)	15.27 (3.01)	0.040 (0.025)	182 (83)	75 (24)	28.93 (97.97)

TRACTOR SOUND LEVEL WITH CAB			Front Wheel Drive Engaged dB(A)	Disengaged dB(A)
At no load in 7th (L4T) gear			80.0	80.1
Bystander in 15th (H4T) gear				87.0

## **TIRES AND WEIGHT**

**Rear Tires** - No., size, ply & psi(kPa)  
**Front Tires** - No., size, ply & psi(kPa)  
**Height of Drawbar**  
**Static Weight with operator** - Rear  
- Front  
- Total

## **Tested Without Ballast**

Two 18.4-38;8;16(110)  
Two 14.9-28;8;16(110)  
23.0 in (585 mm)  
6915 lb (3136 kg)  
4360 lb (1978 kg)  
11275 lb (5114 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE:** The performance figures on this report apply to tractors with chassis serial numbers NT00001M and higher.

**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 implement flow claims of 13 GPM (49 l/min) nor 22 GPM (83 l/min) with dual pump system. The manufacturer's 3 point lift claims of 3735 lb (1693 kg), 5499 lbs (2499 kg) (with 1 external lift cylinder) and 7326 lb (3323 kg) (with 2 external lift cylinders) were not met when tested by OECD Code 2 standards. 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. **2159**, Nebraska Summary 1040, March 3, 2017.

Roger M. Hoy  
Director

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

The 3 point lift performance figures listed below are  
from tests conducted on the New Holland TS6030 Diesel

### HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

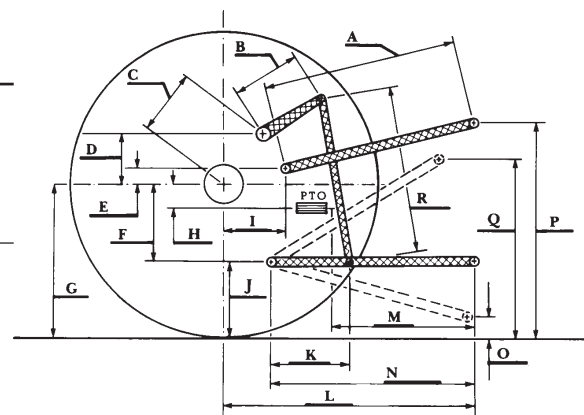
OECD Static test

Maximum force exerted through whole range: 3096 lbs (13.77 kN)  
4608 lbs (20.50 kN)(1 external lift cylinder)  
6174 lbs (27.46 kN)(2 external lift cylinders)

	Single pump system <u>two outlet sets combined</u>	Two pump system
i) Sustained pressure of the open relief valve:	2620 psi (181 bar)	2772 psi (191 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	12.4 GPM (47.1 l/min)	19.1 GPM (72.1 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	10.2 GPM (38.6 l/min)	14.6 GPM (55.4 l/min)
Delivery pressure:	2268 psi (156 bar)	2190 psi (151 bar)
Power:	13.5 HP (10.1 kW)	18.7 HP (13.9 kW)
	<u>single outlet set</u>	
i) Sustained pressure of the open relief valve:	2646 psi (182 bar)	2760 psi (190 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	12.3 GPM (46.7 l/min)	18.1 GPM (68.4 l/min)
iii) Pump delivery rate at maximum		
hydraulic power:	10.0 GPM (37.9 l/min)	13.9 GPM (52.7 l/min)
Delivery pressure:	2223 psi (153 bar)	2070 psi (143 bar)
Power:	13.0 HP (9.7 kW)	16.8 HP (12.5 kW)

### THREE POINT HITCH PERFORMANCE(SAE Static test)

Observed maximum pressure psi. (bar)	2480 (171)				
Location:	lift cylinder				
Hydraulic oil temperature: °F (°C)	145 (63)				
Location:	pump inlet				
Category:	II				
Quick attach:	none				
System pressure 2210 psi (152 Bar)					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb	4374	4244	4127	4257	3735
" " " " " " (kN)	(19.5)	(18.9)	(18.4)	(18.9)	(16.6)
<b>One external lift cylinder</b>					
System pressure 2210 psi (152 Bar)					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb	6764	6444	6174	6300	5499
" " " " " " (kN)	(30.1)	(28.7)	(27.5)	(28.0)	(24.5)
<b>Two external lift cylinders</b>					
System pressure 2210 psi (152 Bar)					
Hitch point distance to ground level in. (mm)	8.0 (203)	15.0 (381)	22.0 (559)	29.0 (737)	36.0 (914)
Lift force on frame lb	9270	8622	8199	8361	7326
" " " " " " (kN)	(41.2)	(38.4)	(36.5)	(37.2)	(32.6)



### HITCH DIMENSIONS AS TESTED—NO LOAD

	SAE Test		OECD Test	
	inch	mm	inch	mm
A	27.7	705	28.5	724
B	9.8	250	9.8	250
C	14.1	357	14.1	357
D	13.5	342	13.5	342
E	8.1	205	8.1	205
F	9.0	229	9.0	229
G	30.3	770	30.3	770
H	0.4	10	0.4	10
I	12.7	323	12.7	323
J	21.3	541	21.3	541
K	18.1	460	18.1	460
L	40.8	1037	40.8	1037
M	22.9	581	22.9	581
N	36.6	930	36.6	930
O	8.0	203	8.0	203
P	40.3	1024	45.3	1151
Q	34.0	864	34.0	864
R	32.5	826	32.5	826



### NEW HOLLAND TS6.140 DIESEL

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln