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2007

# Nebraska Summary: S688 New Holland T6020 Plus

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# SUMMARY OF OECD TEST 2488–NEBRASKA SUMMARY 688
# NEW HOLLAND T6020 PLUS DIESEL
# 24 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—1038 rpm)** | | | | | |
| 94.8 *(70.7)* | 2200 | 5.94 *(22.50)* | 0.439 *(0.267)* | 15.95 *(3.14)* | |
| **Standard Power Take-off Speed (1001 rpm)** | | | | | |
| 94.0 *(70.1)* | 2121 | 5.85 *(22.15)* | 0.436 *(0.265)* | 16.07 *(3.17)* | |
| **Maximum Power - (1 hour)** | | | | | |
| 95.9 *(71.5)* | 1996 | 5.72 *(21.67)* | 0.418 *(0.254)* | 16.76 *(3.30)* | |
| **VARYING POWER AND FUEL CONSUMPTION** | | | | | |
| 94.8 *(70.7)* | 2200 | 5.94 *(22.50)* | 0.439 *(0.267)* | 15.95 *(3.14)* | Air temperature |
| 83.8 *(62.5)* | 2293 | 5.43 *(20.55)* | 0.454 *(0.276)* | 15.43 *(3.04)* | 72°F *(22°C)* |
| 63.6 *(47.5)* | 2331 | 4.47 *(16.93)* | 0.493 *(0.300)* | 14.22 *(2.80)* | Relative humidity |
| 43.0 *(32.1)* | 2367 | 3.41 *(12.92)* | 0.557 *(0.339)* | 12.61 *(2.48)* | 35% |
| 21.9 *(16.4)* | 2416 | 2.36 *(8.95)* | 0.755 *(0.460)* | 9.28 *(1.83)* | Barometer |
| -- -- | 2450 | 1.55 *(5.85)* | -- -- | -- -- | 29.0" Hg *(98.2 kPa)* |

Maximum Torque - 351.7 lb.-ft. *(476.2 Nm)* at 1000 rpm
Maximum Torque Rise - 55.3%
Torque rise at 1800 engine rpm - 22%

## 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—12th (2 Med Hi) Gear** | | | | | | | | | |
| 82.7 *(61.7)* | 6840 *(30.42)* | 4.54 *(7.30)* | 2204 | 2.3 | 0.504 *(0.307)* | 13.91 *(2.74)* | 187 *(86)* | 52 *(11)* | 28.8 *(97.4)* |
| **75% of Pull at Maximum Power—12th (2 Med Hi) Gear** | | | | | | | | | |
| 65.3 *(48.7)* | 5115 *(22.75)* | 4.79 *(7.71)* | 2311 | 1.5 | 0.570 *(0.347)* | 12.28 *(2.42)* | 189 *(87)* | 52 *(11)* | 28.8 *(97.4)* |
| **50% of Pull at Maximum Power—12th (2 Med Hi) Gear** | | | | | | | | | |
| 45.0 *(33.6)* | 3440 *(15.30)* | 4.91 *(7.90)* | 2351 | 0.8 | 0.636 *(0.387)* | 11.00 *(2.17)* | 189 *(87)* | 52 *(11)* | 28.8 *(97.4)* |
| **75% of Pull at Reduced Engine Speed—13th (3 Med Lo) Gear** | | | | | | | | | |
| 66.0 *(49.2)* | 5105 *(22.72)* | 4.84 *(7.79)* | 1999 | 1.5 | 0.519 *(0.316)* | 13.50 *(2.66)* | 187 *(86)* | 53 *(12)* | 28.8 *(97.4)* |
| **50% of Pull at Reduced Engine Speed—13th (3 Med Lo) Gear** | | | | | | | | | |
| 45.5 *(33.9)* | 3440 *(15.31)* | 4.96 *(7.98)* | 2037 | 0.9 | 0.573 *(0.348)* | 12.24 *(2.41)* | 185 *(85)* | 52 *(11)* | 28.8 *(97.4)* |

**Location of tests:** Istituto per le Macchine Agricole e Movimento Terra 73, Strada delle Cacce 10135 Torino Italy

**Dates of tests:** September 2007to May 2008.

**Manufacturer:** CNH Europe Holding S.A. 13, Rue Aldringen L-1118 Luxembourg

**FUEL and OIL: Fuel** No. 2 Diesel **Specific gravity converted to 60°/60°F *(15°/15°C)*** 0.842 **Fuel weight** 7.01 lbs/gal *(0.840 kg/l)* **Oil SAE** 15W40 **API service classification** CH-4 **Transmission and hydraulic lubricant** Akcela Nexplore fluid **Front axle lubricant** Akcela Nexplore fluid

**ENGINE: Make** CNH Diesel **Type** four cylinder vertical with turbocharger and air to air intercooler **Serial No.** 431043 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.094" x 5.197" *(104.0 mm x 132.0 mm)* **Compression ratio** 17.5 to 1 **Displacement** 274 cu in *(4485 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** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS: Type** front wheel assist **Serial No.** Z7BD51062 **Tread width** rear 60.0" *(1524 mm)* to 96.0" *(2438 mm)* front 52.2" *(1325 mm)* to 90.0" *(2285 mm)* **Wheelbase** 95.0" (*2412 mm)* **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial(2) range operator controlled powershifting **Nominal travel speeds mph *(km/h)*** first 1.02 *(1.64)* second 1.25 *(2.01)* third 1.52 *(1.49)* fourth 1.83 *(2.94)* fifth 2.13 *(3.43)* sixth 2.56 (*4.12)* seventh 2.61 *(4.20)* eighth 3.11 *(5.00)* ninth 3.13 *(5.04)* tenth 3.75 *(6.04)* eleventh 3.80 *(6.11)* twelfth 4.59 *(7.39)* thirteenth 5.36 (*8.62)* fourteenth 6.20 *(9.98)* fifteenth 6.56 *(10.55)* sixteenth 7.59 *(12.21)* seventeenth 7.80 *(12.55)* eighteenth 9.08 *(14.62)* nineteenth 9.54 *(15.35)* twentieth 11.11 *(17.88)* twenty-first 12.97 *(20.88)* twenty-second 15.87 *(25.54)* twenty-third 18.87 *(30.38)* twenty-fourth 23.09 *(37.16)* reverse 1.06 *(1.70)*, 1.29 *(2.08)*, 1.55 *(2.49)*, 1.89 *(3.04)*, 2.21 *(3.55)*, 2.65 *(4.26)*, 2.70 *(4.34)*, 3.22 *(5.17)*, 3.24 *(5.21)*, 3.88 *(6.24)*, 3.93 *(6.32)*, 4.75 *(7.64)*, 5.54 *(8.92)*, 6.41 *(10.32)*, 6.78 *(10.91)*, 7.84 *(12.62)*, 8.07 *(12.98)*, 9.40 *(15.12)*, 9.86 *(15.87)*, 11.49 *(18.49)*, 13.42 *(21.59)*, 16.41 *(26.41)*, 19.52 *(31.41)*, 23.87 *(38.42)*

## 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)* | Temp.°F*(°C)* cool-ing med | Air dry bulb | Barom. inch Hg *(kPa)* |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 2nd(1 Low Hi) Gear | | | | | |
| 33.9 *(25.3)* | 10840 *(48.22)* | 1.17 *(1.89)* | 2362 | 12.8 | 0.705 *(0.429)* | 9.95 *(1.96)* | 189 *(87)* | 54 *(12)* | 28.6 *(97.0)* |
| | | | | 3rd(2 Low Lo) Gear | | | | | |
| 40.1 *(29.9)* | 10395 *(46.25)* | 1.45 *(2.33)* | 2350 | 10.1 | 0.684 *(0.416)* | 10.25 *(2.02)* | 189 *(87)* | 54 *(12)* | 28.7 *(97.1)* |
| | | | | 4th(2 Low Hi) Gear | | | | | |
| 49.3 *(36.8)* | 10520 *(46.80)* | 1.76 *(2.83)* | 2326 | 9.8 | 0.652 *(0.397)* | 10.75 *(2.12)* | 187 *(86)* | 55 *(13)* | 28.7 *(97.1)* |
| | | | | 5th(3 Low Lo) Gear | | | | | |
| 56.5 *(42.1)* | 10265 *(45.65)* | 2.06 *(3.32)* | 2309 | 8.6 | 0.625 *(0.380)* | 11.22 *(2.21)* | 189 *(87)* | 54 *(12)* | 28.7 *(97.1)* |
| | | | | 6th(1 Med Lo) Gear | | | | | |
| 64.2 *(47.9)* | 9905 *(44.07)* | 2.43 *(3.91)* | 2281 | 9.3 | 0.603 *(0.367)* | 11.62 *(2.29)* | 189 *(87)* | 41 *(5)* | 29.3 *(99.2)* |
| | | | | 7th(3 Low Hi) Gear | | | | | |
| 67.2 *(50.1)* | 10120 *(45.01)* | 2.49 *(4.01)* | 2282 | 8.8 | 0.575 *(0.350)* | 12.18 *(2.40)* | 189 *(87)* | 52 *(11)* | 29.3 *(99.2)* |
| | | | | 8th(4 Low Lo) Gear | | | | | |
| 74.7 *(55.7)* | 9520 *(42.34)* | 2.94 *(4.74)* | 2208 | 6.2 | 0.555 *(0.337)* | 12.64 *(2.49)* | 187 *(86)* | 46 *(8)* | 28.7 *(97.2)* |
| | | | | 9th(1 Med Hi) Gear | | | | | |
| 74.3 *(55.4)* | 9310 *(41.41)* | 2.99 *(4.82)* | 2224 | 6.2 | 0.560 *(0.341)* | 12.52 *(2.47)* | 187 *(86)* | 45 *(7)* | 29.3 *(99.2)* |
| | | | | 10th(2 Med Lo) Gear | | | | | |
| 82.1 *(61.2)* | 9385 *(41.74)* | 3.28 *(5.28)* | 2000 | 4.7 | 0.489 *(0.297)* | 14.33 *(2.82)* | 185 *(85)* | 50 *(10)* | 29.3 *(99.2)* |
| | | | | 11th(4 Low Hi) Gear | | | | | |
| 84.4 *(62.9)* | 9550 *(42.48)* | 3.31 *(5.33)* | 1999 | 4.8 | 0.476 *(0.290)* | 14.72 *(2.90)* | 185 *(85)* | 45 *(7)* | 29.3 *(99.2)* |
| | | | | 12th(2 Med Hi) Gear | | | | | |
| 83.1 *(62.0)* | 7675 *(34.15)* | 4.06 *(6.54)* | 2001 | 3.5 | 0.483 *(0.294)* | 14.52 *(2.86)* | 185 *(85)* | 46 *(8)* | 29.3 *(99.2)* |
| | | | | 13th(3 Med Lo) Gear | | | | | |
| 81.4 *(60.7)* | 6395 *(28.44)* | 4.77 *(7.68)* | 1993 | 2.6 | 0.493 *(0.300)* | 14.21 *(2.80)* | 185 *(85)* | 45 *(7)* | 29.3 *(99.1)* |
| | | | | 14th(1 High Lo) Gear | | | | | |
| 83.0 *(61.9)* | 5595 *(24.88)* | 5.56 *(8.95)* | 1999 | 2.2 | 0.484 *(0.294)* | 14.48 *(2.85)* | 185 *(85)* | 50 *(10)* | 29.3 *(99.1)* |
| | | | | 15th(3 Med Hi) Gear | | | | | |
| 82.2 *(61.3)* | 5240 *(23.31)* | 5.88 *(9.46)* | 1997 | 2.1 | 0.488 *(0.297)* | 14.37 *(2.83)* | 185 *(85)* | 48 *(9)* | 29.3 *(99.1)* |
| | | | | 16th(1 High Hi) Gear | | | | | |
| 82.1 *(61.2)* | 4495 *(20.00)* | 6.85 *(11.02)* | 2002 | 1.7 | 0.489 *(0.297)* | 14.33 *(2.82)* | 187 *(86)* | 48 *(9)* | 29.3 *(99.1)* |
| | | | | 17th(4 Med Lo) Gear | | | | | |
| 80.3 *(59.9)* | 4270 *(19.00)* | 7.05 *(11.34)* | 2002 | 1.6 | 0.500 *(0.304)* | 14.01 *(2.76)* | 185 *(85)* | 50 *(10)* | 29.3 *(99.1)* |
| | | | | 18th(2 High Lo) Gear | | | | | |
| 78.3 *(58.4)* | 3575 *(15.90)* | 8.21 *(13.22)* | 1997 | 1.4 | 0.513 *(0.312)* | 13.65 *(2.69)* | 185 *(85)* | 46 *(8)* | 29.3 *(99.1)* |
| | | | | 19th(4 Med Hi) Gear | | | | | |
| 78.2 *(58.3)* | 3405 *(15.15)* | 8.61 *(13.86)* | 1994 | 1.3 | 0.513 *(0.312)* | 13.65 *(2.69)* | 185 *(85)* | 48 *(9)* | 29.3 *(99.1)* |

| **TIRES AND WEIGHT** | **Tested Without Ballast** |
|---|---|
| **Rear tires -** No.,size, ply & psi*(kPa)* | Two 600/65R38; **;12 *(80)* |
| **Front tires** - No.,size, ply & psi*(kPa)* | Two 480/65R28; **;12 *(80)* |
| **Height of Drawbar** | 18.9 in *(480 mm)* |
| **Static Weight with operator-** Rear | 6900 lb *(3130 kg)* |
| - Front | 4365 lb *(1980 kg)* |
| - Total | 11265 lb *(5110 kg)* |

**Clutch** dry disc hydraulically actuated by foot pedal **Brakes** wet disc hydraulically actuated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1970 engine rpm or 1000 rpm at 2120 engine rpm **Unladen tractor mass** 11100 lb *(5035 kg)*

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

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's three point lift capacity claim of 9285 lbs *(4211 kg)* with MDC (manual draft control) nor hydraulic flow of 26.5 GPM *(100.3 L/min)*. The manufacturer's claim of 9620 lbs *(4363 kg)* with EDC (electronic draft control) was not verified. 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 summary of data from OECD Report No. **2488,** Nebraska Summary 688, January 14, 2010.

Roger M. Hoy
Director

M.F. Kocher
V.I. Adamchuk
J.A. Smith
Board of Tractor Test Engineers

| TRACTOR SOUND LEVEL WITH CAB | Front Wheel Drive Disengaged dB(A) | Front Wheel Drive Engaged dB(A) |
|---|---|---|
| At no load in 12th (2 Med Hi) gear | 70.7 | 71.8 |
| Bystander | -- | -- |

## HYDRAULIC PERFORMANCE

CATEGORY: II
Quick Attach: None
OECD Static test

| | lift assist cylinders |
|---|---|
| Maximum force exerted through whole range: | 6250 lbs *(27.8 kN)* (2 x 50 mm) |
| i) Sustained pressure of the open relief valve: | 3120 psi *(215 bar)* |
| ii) Pump delivery rate at minimum pressure: | 20.8 GPM *(78.7 l/min)* |
| iii) Pump delivery rate at maximum hydraulic power: | 17.3 GPM *(65.3 l/min)* |
| Delivery pressure: | 2685 psi *(185 bar)* |
| Power: | 27.0 HP *(20.1 kW)* |

## THREE POINT HITCH PERFORMANCE

| | |
|---|---|
| Observed Maximum Pressure psi. *(bar)* | 3120 *(215)* |
| Location: | lift cylinder |
| Hydraulic oil temperature: °F *(°C)* | 150 *(66)* |
| Location: | hydraulic sump |
| Category: | II |
| Quick attach: | None |

**SAE Static Test**—System pressure 2815 psi *(194 Bar)*
lift assist cylinders - 2 x 50 mm

| Hitch point distance to ground level in. *(mm)* | 7.9 *(200)* | 16.5 *(418)* | 23.0 *(585)* | 30.3 *(770)* | 38.2 *(970)* |
|---|---|---|---|---|---|
| Lift force on frame lb | 13805 | 12500 | 11735 | 10475 | 8790 |
| " " " " " " *(kN)* | *(61.4)* | *(55.6)* | *(52.2)* | *(46.6)* | *(39.1)* |

**HITCH DIMENSIONS AS TESTED—NO LOAD**

| | OECD test inch | OECD test *mm* | SAE test inch | SAE test *mm* |
|---|---|---|---|---|
| A | 29.3 | *743* | 31.0 | *787* |
| B | 10.0 | *255* | 10.0 | *255* |
| C | 15.9 | *403* | 15.9 | *403* |
| D | 14.1 | *357* | 14.1 | *357* |
| E | 7.9 | *200* | 9.8 | *250* |
| F | 9.3 | *235* | 9.3 | *235* |
| G | 32.3 | *820* | 32.3 | *820* |
| H | 1.2 | *30* | 1.2 | *30* |
| I | 16.9 | *430* | 15.6 | *395* |
| J | 23.0 | *585* | 23.0 | *585* |
| K | 19.9 | *505* | 23.0 | *585* |
| L | 46.4 | *1178* | 46.4 | *1178* |
| M | 24.5 | *623* | 24.5 | *623* |
| N | 39.8 | *1010* | 39.8 | *1010* |
| O | 7.9 | *200* | 7.9 | *200* |
| P | 47.0 | *1195* | 42.0 | *1068* |
| Q | 36.5 | *928* | 33.8 | *859* |
| R | 29.8 | *758* | 32.0 | *812* |

