

# SUMMARY OF OECD TEST 2650—NEBRASKA SUMMARY 812

## NEW HOLLAND T7.170 DIESEL

### 18 SPEED

#### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW) | Crank<br>shaft<br>speed<br>rpm | Diesel<br>Consumption |                       | D.E.F.<br>Consumption |                 | Mean Atmospheric<br>Conditions |
|---------------------|--------------------------------|-----------------------|-----------------------|-----------------------|-----------------|--------------------------------|
|                     |                                | Gal/hr<br>(l/h)       | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Gal/hr<br>(l/h) |                                |

#### MAXIMUM POWER AND FUEL CONSUMPTION

| Rated Engine Speed—(PTO speed—1111 rpm)  |      |                 |                  |                 |                |  |
|--|------|-----------------|------------------|-----------------|----------------|--|
| 117.7<br>(87.8)                          | 2100 | 6.82<br>(25.82) | 0.404<br>(0.246) | 17.26<br>(3.40) | 0.39<br>(1.49) |  |
| Standard Power Take-off Speed (1000 rpm) |      |                 |                  |                 |                |  |
| 124.0<br>(92.5)                          | 1890 | 6.82<br>(25.83) | 0.383<br>(0.233) | 18.63<br>(3.58) | 0.39<br>(1.48) |  |
| Maximum Power (1 hour)                   |      |                 |                  |                 |                |  |
| 128.6<br>(95.9)                          | 1800 | 6.90<br>(26.11) | 0.373<br>(0.227) | 18.63<br>(3.67) | 0.41<br>(1.56) |  |

#### VARYING POWER AND FUEL CONSUMPTION

|                 |      |                 |                  |                 |                |                     |
|-----------------|------|-----------------|------------------|-----------------|----------------|---------------------|
| 117.7<br>(87.8) | 2100 | 6.82<br>(25.82) | 0.404<br>(0.246) | 17.26<br>(3.40) | 0.39<br>(1.49) | Air temperature     |
| 101.1<br>(75.4) | 2119 | 6.19<br>(23.45) | 0.427<br>(0.260) | 16.32<br>(3.21) | 0.35<br>(1.31) | 68°F (20°C)         |
| 76.3<br>(56.9)  | 2132 | 5.10<br>(19.32) | 0.465<br>(0.283) | 14.97<br>(2.95) | 0.25<br>(0.95) | Relative humidity   |
| 51.2<br>(38.2)  | 2145 | 4.06<br>(15.37) | 0.552<br>(0.336) | 12.61<br>(2.48) | 0.23<br>(0.88) | 62%                 |
| 25.8<br>(19.3)  | 2158 | 3.09<br>(11.71) | 0.837<br>(0.509) | 8.35<br>(1.64)  | 0.10<br>(0.37) | Barometer           |
| --              | 2172 | 2.29<br>(8.65)  | --               | --              | --             | 29.4" Hg (99.5 kPa) |

Maximum torque - 432.8 lb.-ft. (586.8 Nm) at 1500 rpm

Maximum torque rise - 46.9%

Torque rise at 1700 engine rpm - 35%

Power increase at 1800 engine rpm - 9.2%

#### DRAWBAR PERFORMANCE

#### UNBALLASTED - FRONT DRIVE ENGAGED FUEL CONSUMPTION CHARACTERISTICS

| Power<br>Hp<br>(kW)                           | Drawbar<br>pull<br>lbs<br>(kN) | Speed<br>mph<br>(km/h) | Crank-<br>shaft<br>speed<br>rpm | Slip<br>% | Fuel Consumption<br>lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | Temp. °F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---|--------------------------------|------------------------|---------------------------------|-----------|---|-----------------------|--------------------------------------|--------------------|-------------------------------|
| Maximum Power—9th Gear                        |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 104.2<br>(77.7)                               | 7960<br>(35.4)                 | 4.91<br>(7.90)         | 2100                            | 3.3       | 0.457<br>(0.278)                          | 15.23<br>(3.00)       | 183<br>(84)                          | 85<br>(29)         | 29.7<br>(100.6)               |
| 75% of Pull at Maximum Power—9th Gear         |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 81.3<br>(60.6)                                | 5980<br>(26.6)                 | 5.10<br>(8.20)         | 2122                            | 1.0       | 0.516<br>(0.314)                          | 13.50<br>(2.66)       | 178<br>(81)                          | 85<br>(29)         | 29.7<br>(100.6)               |
| 50% of Pull at Maximum Power—9th Gear         |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 54.7<br>(40.8)                                | 3980<br>(17.7)                 | 5.16<br>(8.30)         | 2136                            | 0.4       | 0.608<br>(0.370)                          | 11.47<br>(2.26)       | 174<br>(79)                          | 85<br>(29)         | 29.7<br>(100.6)               |
| 75% of Pull at Reduced Engine Speed—10th Gear |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 81.5<br>(60.8)                                | 6000<br>(26.7)                 | 5.09<br>(8.20)         | 1771                            | 1.0       | 0.475<br>(0.289)                          | 14.67<br>(2.89)       | 172<br>(78)                          | 85<br>(29)         | 29.7<br>(100.6)               |
| 50% of Pull at Reduced Engine Speed—10th Gear |                                |                        |                                 |           |   |                       |                                      |                    |                               |
| 54.7<br>(40.8)                                | 3980<br>(17.7)                 | 5.16<br>(8.30)         | 1790                            | 0.4       | 0.572<br>(0.348)                          | 12.18<br>(2.40)       | 176<br>(80)                          | 85<br>(29)         | 29.7<br>(100.6)               |

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

**Dates of tests:** April to July 2011.

**Manufacturer:** CNH UK Limited Basildon, Essex SS14 3AD United Kingdom

**CONSUMABLE Fluids and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.837 **Fuel weight** 6.97 lbs/gal (0.835 kg/l) **Diesel Exhaust Fluid (DEF)** 30% aqueous urea solution **DEF weight** 9.071 lbs/gal (1.087 kg/l) **Oil** SAE 15W40 **API service classification** CH-4 **Transmission and hydraulic lubricant** NH 410B fluid **Front axle lubricant** NH 410B fluid

**ENGINE:** Make F.P.T. Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler and D.E.F. (diesel exhaust fluid) exhaust treatment **Serial No.** 0708698 **Crankshaft** lengthwise **Rated engine speed** 2100 **Bore and stroke** 4.094" x 5.197" (104.0 mm x 132.0 mm) **Compression ratio** 17.5 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** one paper element **Muffler** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** ZABN41898 **Tread width** rear 56.3" (1430 mm) to 85.6" (2173 mm) front 52.2" (1325 mm) to 90.0" (2285 mm) **Wheelbase** 113.4" (2880 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.50 (2.41) second 1.80 (2.89) third 2.16 (3.48) fourth 2.60 (4.18) fifth 3.05 (4.91) sixth 3.47 (5.59) seventh 3.67 (5.91) eighth 4.18 (6.72) ninth 5.01 (8.07) tenth 6.03 (9.71) eleventh 7.09 (11.41) twelfth 8.53 (13.72) thirteenth 9.85 (15.85) fourteenth 11.84 (19.06) fifteenth 14.23 (22.90) sixteenth 17.11 (27.54) seventeenth 20.11 (32.37) eighteenth 24.18 (38.92) reverse 2.92 (4.70), 3.51 (5.65), 4.22 (6.79), 5.07 (8.16), 5.95 (9.59), 7.16 (11.53) **Clutch** wet 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 1893 engine rpm **Unladen tractor mass** 14265 lb (6470 kg)



This vehicle is equipped with an electronically controlled engine Power management system that monitors and boosts engine power output in certain circumstances. This is achieved by electronically changing the characteristics of the engine power-speed curve. The engine Power management function ("boosted" power level) becomes active in the higher transmission gears for road transport applications. The system is also activated when power transfer through the PTO and hydraulic pump exceeds a preset level (and forward speed exceeds 0.5 km/h), for mobile PTO driven implement applications. An override system is provided to enable PTO operations at the "boosted" power level while the vehicle is stationary for test purposes. The results of this PTO output test are presented below.

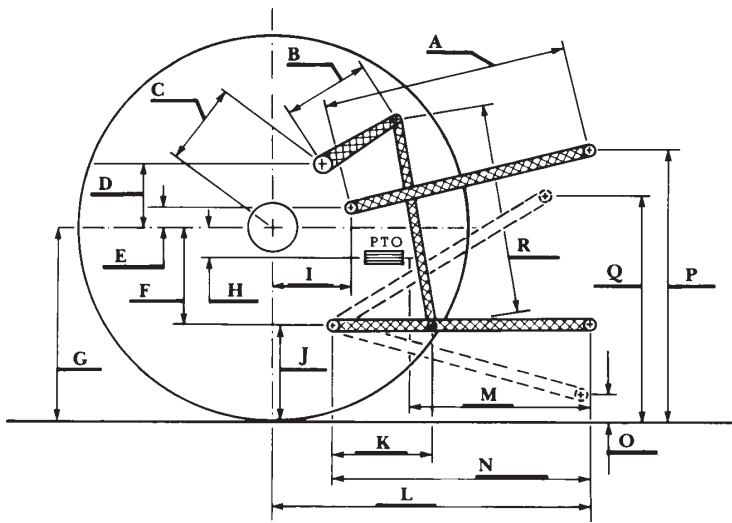
### POWER TAKE-OFF PERFORMANCE

| Power<br>HP<br>(kW)   | Crank<br>shaft<br>speed<br>rpm | Diesel<br>Consumption<br>Gal/hr<br>(l/h) | lb/hp.hr<br>(kg/kW.h) | Hp.hr/gal<br>(kW.h/l) | D.E.F.<br>Consumption<br>Gal/hr<br>(l/h) | Mean Atmospheric<br>Conditions |
|---|--------------------------------|--|-----------------------|-----------------------|--|--------------------------------|
| <b>MAXIMUM POWER AND FUEL CONSUMPTION</b>   |                                |  |                       |                       |  |                                |
| <b>Rated Engine Speed—(PTO speed—1164rpm)</b>   |                                |  |                       |                       |  |                                |
| 138.9<br>(103.6)  | 2200                           | 7.94<br>(30.06)                          | 0.398<br>(0.242)      | 17.49<br>(3.45)       | 0.46<br>(1.76)                           |                                |
| <b>Standard Power Take-off Speed (1000 rpm)</b>   |                                |  |                       |                       |  |                                |
| 153.1<br>(114.2)  | 1890                           | 8.17<br>(30.93)                          | 0.372<br>(0.226)      | 18.73<br>(3.69)       | 0.49<br>(1.87)                           |                                |
| <b>Maximum Power (1 hour)</b>   |                                |  |                       |                       |  |                                |
| 157.2<br>(117.2)  | 1800                           | 8.24<br>(31.19)                          | 0.365<br>(0.222)      | 19.07<br>(3.76)       | 0.55<br>(2.08)                           |                                |
| <b>VARYING POWER AND FUEL CONSUMPTION</b>   |                                |  |                       |                       |  |                                |
| 138.9<br>(103.6)  | 2200                           | 7.94<br>(30.06)                          | 0.398<br>(0.242)      | 17.49<br>(3.45)       | 0.46<br>(1.76)                           | Air temperature                |
| 119.5<br>(89.1)   | 2225                           | 7.13<br>(26.99)                          | 0.416<br>(0.253)      | 16.75<br>(3.30)       | 0.31<br>(1.48)                           | 68°F (20°C)                    |
| 90.3<br>(67.4)  | 2243                           | 5.94<br>(22.50)                          | 0.459<br>(0.279)      | 15.20<br>(2.99)       | 0.25<br>(0.93)                           | Relative humidity              |
| 60.7<br>(45.3)  | 2259                           | 4.69<br>(17.74)                          | 0.538<br>(0.327)      | 12.94<br>(2.55)       | 0.22<br>(0.83)                           | 56%                            |
| 30.6<br>(22.8)  | 2272                           | 3.46<br>(13.08)                          | 0.789<br>(0.480)      | 8.85<br>(1.74)        | 0.13<br>(0.49)                           | Barometer                      |
| --  | 2287                           | 2.50<br>(9.45)                           | --                    | --                    | --                                       | 29.0" Hg (98.4 kPa)            |
| Maximum torque - 522.1 lb.-ft. (707.9 Nm) at 1500 rpm<br>Maximum torque rise - 57.4%<br>Torque rise at 1800 engine rpm - 38%<br>Power increase at 1800 engine rpm - 13.1% |                                |  |                       |                       |  |                                |

## HYDRAULIC PERFORMANCE

CATEGORY: III  
 Quick Attach: None  
 OECD Static test

|   |                               |
|---|-------------------------------|
|   | lift cylinders                |
| Maximum force exerted through whole range:      | 9350 lbs (41.6 kN) (2x100 mm) |
| i) Sustained pressure of the open relief valve: | 2930 psi (202 bar)            |
| ii) Pump delivery rate at minimum pressure:     | 24.4 GPM (92.4 l/min)         |
| iii) Pump delivery rate at maximum              |                               |
| hydraulic power:                                | 23.8 GPM (90.2 l/min)         |
| Delivery pressure:                              | 2610 psi (180 bar)            |
| Power:  | 36.3 HP (27.1 kW)             |



**HITCH DIMENSIONS AS TESTED—NO LOAD**

|   | inch | mm   |
|---|------|------|
| A | 29.8 | 756  |
| B | 12.2 | 310  |
| C | 15.7 | 398  |
| D | 14.3 | 364  |
| E | 8.2  | 208  |
| F | 9.8  | 250  |
| G | 34.4 | 875  |
| H | 0.6  | 16   |
| I | 17.5 | 445  |
| J | 24.6 | 625  |
| K | 17.3 | 440  |
| L | 47.0 | 1194 |
| M | 24.6 | 624  |
| N | 38.3 | 974  |
| O | 7.9  | 200  |
| P | 51.6 | 1310 |
| Q | 38.0 | 965  |
| R | 32.7 | 830  |