

# SUMMARY OF OECD TEST 2721-NEBRASKA SUMMARY 870

## MASSEY FERGUSON 8680 DIESEL

### DYNA VT TRANSMISSION

#### chassis S/N V187001 and higher

#### 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.l/l) | Gal/hr<br>(l/h) |                                |
| <b>MAXIMUM POWER AND FUEL CONSUMPTION</b>       |                                |                       |                       |                       |                 |                                |
| <b>Rated Engine Speed—(PTO speed—1067 rpm)</b>  |                                |                       |                       |                       |                 |                                |
| 290.2<br>(216.4)                                | 2100                           | 15.87<br>(60.06)      | 0.385<br>(0.234)      | 18.29<br>(3.60)       | 1.02<br>(3.86)  |                                |
| <b>Standard Power Take-off Speed (1000 rpm)</b> |                                |                       |                       |                       |                 |                                |
| 325.6<br>(242.8)                                | 1968                           | 17.24<br>(65.26)      | 0.372<br>(0.226)      | 18.89<br>(3.72)       | 1.17<br>(4.42)  |                                |
| <b>Maximum Power (1 hour)</b>                   |                                |                       |                       |                       |                 |                                |
| 328.3<br>(244.8)                                | 1950                           | 17.28<br>(65.42)      | 0.370<br>(0.225)      | 18.99<br>(3.74)       | 1.19<br>(4.52)  |                                |
| <b>VARYING POWER AND FUEL CONSUMPTION</b>       |                                |                       |                       |                       |                 |                                |
| 290.2<br>(216.4)                                | 2100                           | 15.87<br>(60.06)      | 0.385<br>(0.234)      | 18.29<br>(3.60)       | 1.02<br>(3.86)  | Air temperature                |
| 248.9<br>(185.6)                                | 2119                           | 13.94<br>(52.78)      | 0.393<br>(0.239)      | 17.84<br>(3.51)       | 0.78<br>(2.97)  | 70°F (21°C)                    |
| 187.3<br>(139.7)                                | 2127                           | 10.87<br>(41.13)      | 0.407<br>(0.248)      | 17.24<br>(3.40)       | 0.59<br>(2.23)  | Relative humidity              |
| 125.4<br>(93.5)                                 | 2136                           | 7.99<br>(30.24)       | 0.448<br>(0.272)      | 15.68<br>(3.09)       | 0.39<br>(1.48)  | 31%                            |
| 63.0<br>(47.0)                                  | 2145                           | 5.17<br>(19.57)       | 0.577<br>(0.351)      | 12.18<br>(2.40)       | 0.22<br>(0.85)  | Barometer                      |
| ----  | 2152                           | 2.67<br>(10.11)       | ----                  | ----                  | 0.06<br>(0.24)  | 30.2" Hg (102.3 kPa)           |

Maximum torque - 1034 lb.-ft. (1402 Nm) at 1500 rpm  
 Maximum torque rise - 42.4%  
 Torque rise at 1700 engine rpm - 33%  
 Power increase at 1950 engine rpm - 13.2%

#### 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.l/l) | Temp.°F (°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|--|--------------------------------|------------------------|---------------------------------|-----------|---|-----------------------|-------------------------------------|--------------------|-------------------------------|
| <b>Maximum Power—Turtle 9</b>                        |                                |                        |                                 |           |   |                       |                                     |                    |                               |
| 236.2<br>(176.1)                                     | 15810<br>(70.32)               | 5.60<br>(9.01)         | 2102                            | 3.5       | 0.459<br>(0.280)                          | 15.08<br>(2.97)       | 158<br>(70)                         | 68<br>(20)         | 29.1<br>(98.6)                |
| <b>75% of Pull at Maximum Power—Turtle 9</b>         |                                |                        |                                 |           |   |                       |                                     |                    |                               |
| 181.3<br>(135.2)                                     | 11810<br>(52.53)               | 5.76<br>(9.27)         | 2123                            | 2.6       | 0.482<br>(0.293)                          | 14.37<br>(2.83)       | 163<br>(73)                         | 66<br>(19)         | 29.2<br>(98.9)                |
| <b>50% of Pull at Maximum Power—Turtle 9</b>         |                                |                        |                                 |           |   |                       |                                     |                    |                               |
| 123.2<br>(91.9)                                      | 7855<br>(34.93)                | 5.88<br>(9.47)         | 2134                            | 1.7       | 0.524<br>(0.319)                          | 13.20<br>(2.60)       | 156<br>(69)                         | 66<br>(19)         | 29.3<br>(99.2)                |
| <b>75% of Pull at Reduced Engine Speed—Turtle 11</b> |                                |                        |                                 |           |   |                       |                                     |                    |                               |
| 181.2<br>(135.1)                                     | 11795<br>(52.47)               | 5.76<br>(9.27)         | 1794                            | 2.5       | 0.443<br>(0.270)                          | 15.63<br>(3.08)       | 158<br>(70)                         | 68<br>(20)         | 29.2<br>(99.0)                |
| <b>50% of Pull at Reduced Engine Speed—Turtle 11</b> |                                |                        |                                 |           |   |                       |                                     |                    |                               |
| 123.4<br>(92.0)                                      | 7855<br>(34.93)                | 5.89<br>(9.48)         | 1801                            | 1.7       | 0.469<br>(0.285)                          | 14.77<br>(2.91)       | 156<br>(69)                         | 68<br>(20)         | 29.3<br>(99.2)                |

**Location of tests:** DLG - Test Centre, Technology and Farm inputs, Max-Eyth-Weg 1, D-64823 Gross-Umstadt, Germany

**Dates of tests:** January - July, 2012.

**Manufacturer:** AGCO S.A. ZA, n2, BP 60307, Avenue Blaise Pascal, 60026 Beauvais, Cedex, France

**CONSUMABLE FLUIDS:** Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.843 Fuel weight 7.04 lbs/gal (0.842 kg/l) Diesel Exhaust Fluid (DEF) 32% aqueous urea solution DEF weight 9.10 lbs/gal (1.093 kg/l) Oil SAE 10W40 API service classification CI4 Transmission and hydraulic lubricant BP STOU 10W/40 Front axle lubricant SAE 85W90 API GL5

**ENGINE:** Make Sisu Diesel Type six cylinder vertical with turbocharger, air to air intercooler and D.E.F (diesel exhaust fluid) technology Serial No. W423 Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.370" x 5.709" (111.0 mm x 145.0 mm) Compression ratio 16.7 to 1 Displacement 513 cu in (8419 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 Muffler vertical Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist Serial No. V319022 Tread width rear 72.8" (1850 mm) to 74.8" (1900 mm) front 70.9" (1800 mm) to 76.8" (1950 mm) Wheelbase 122.2" (3105 mm) Hydraulic control system direct engine drive Transmission CVT. A combination of mechanical and hydrostatic sections allow an infinite speed adjustment within the ranges noted. The transmission has two mechanical ranges. Nominal travel speeds mph (km/h) forward: Low range 0-18 (0-30), high range 0-25 (0-40) reverse: Low range 0-12 (0-19), high range 0-12 (0-39) Clutch a foot pedal controls the hydrostatic oil flow Brakes multiple wet disc hydraulically operated by two foot pedals that can be locked together Steering hydrostatic Power take-off 1000 rpm at 1970 engine rpm Unladen tractor mass 25200 lb (11430 kg)

**DRAWBAR PERFORMANCE**  
**(Unballasted - Front Drive Engaged)**  
**MAXIMUM POWER AT SELECTED SPEEDS**

| 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<br>lb/hp.hr<br>(kg/kW.h) | Consumption<br>Hp.hr/gal<br>(kW.h/l) | Temp. <sup>o</sup> F(°C)<br>cool-<br>ing<br>med | Air<br>dry<br>bulb | Barom.<br>inch<br>Hg<br>(kPa) |
|---------------------|--------------------------------|------------------------|---------------------------------|-----------|-------------------------------|--------------------------------------|---|--------------------|-------------------------------|
| Turtle 6            |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 221.1<br>(164.9)    | 25465<br>(113.23)              | 3.26<br>(5.24)         | 2049                            | 14.8      | 0.514<br>(0.312)              | 13.48<br>(2.65)                      | 156<br>(69)                                     | 72<br>(22)         | 29.7<br>(100.6)               |
| Turtle 7.5          |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 259.2<br>(193.3)    | 23335<br>(103.75)              | 4.17<br>(6.71)         | 1949                            | 7.5       | 0.458<br>(0.278)              | 15.13<br>(2.98)                      | 147<br>(64)                                     | 72<br>(22)         | 29.7<br>(100.6)               |
| Turtle 9            |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 265.8<br>(198.2)    | 19615<br>(87.23)               | 5.08<br>(8.18)         | 1948                            | 4.9       | 0.447<br>(0.271)              | 15.51<br>(3.05)                      | 151<br>(66)                                     | 73<br>(23)         | 29.7<br>(100.6)               |
| Turtle 11           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 264.9<br>(197.5)    | 15895<br>(70.69)               | 6.25<br>(10.06)        | 1950                            | 3.5       | 0.448<br>(0.273)              | 15.48<br>(3.05)                      | 133<br>(56)                                     | 68<br>(20)         | 29.7<br>(100.6)               |
| Turtle 13           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 261.0<br>(194.6)    | 13335<br>(59.33)               | 7.34<br>(11.81)        | 1955                            | 2.9       | 0.453<br>(0.276)              | 15.28<br>(3.01)                      | 153<br>(67)                                     | 68<br>(20)         | 29.7<br>(100.6)               |
| Turtle 15           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 258.5<br>(192.8)    | 11685<br>(51.95)               | 8.30<br>(13.36)        | 1951                            | 2.4       | 0.457<br>(0.278)              | 15.14<br>(2.98)                      | 163<br>(73)                                     | 68<br>(20)         | 29.7<br>(100.6)               |
| Turtle 17           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 254.0<br>(189.4)    | 9850<br>(43.80)                | 9.67<br>(15.57)        | 1955                            | 2.0       | 0.466<br>(0.283)              | 14.87<br>(2.93)                      | 160<br>(71)                                     | 70<br>(21)         | 29.7<br>(100.6)               |
| Rabbit 9            |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 245.7<br>(183.2)    | 18055<br>(80.29)               | 5.10<br>(8.21)         | 1951                            | 3.9       | 0.485<br>(0.295)              | 14.29<br>(2.81)                      | 153<br>(67)                                     | 75<br>(24)         | 29.7<br>(100.6)               |
| Rabbit 11           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 259.4<br>(193.4)    | 15575<br>(69.26)               | 6.25<br>(10.05)        | 1950                            | 3.5       | 0.456<br>(0.277)              | 15.15<br>(2.98)                      | 151<br>(66)                                     | 73<br>(23)         | 29.7<br>(100.6)               |
| Rabbit 13           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 257.7<br>(192.2)    | 13260<br>(58.97)               | 7.30<br>(11.74)        | 1954                            | 3.0       | 0.458<br>(0.278)              | 15.10<br>(2.97)                      | 165<br>(74)                                     | 73<br>(23)         | 29.7<br>(100.6)               |
| Rabbit 15           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 261.6<br>(195.1)    | 11820<br>(52.56)               | 8.30<br>(13.36)        | 1950                            | 2.6       | 0.450<br>(0.273)              | 15.36<br>(3.02)                      | 163<br>(73)                                     | 73<br>(23)         | 29.7<br>(100.6)               |
| Rabbit 17           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 262.6<br>(195.8)    | 10175<br>(45.27)               | 9.68<br>(15.57)        | 1955                            | 2.2       | 0.450<br>(0.273)              | 15.35<br>(3.02)                      | 162<br>(72)                                     | 73<br>(23)         | 29.7<br>(100.6)               |
| Rabbit 19           |                                |                        |                                 |           |                               |                                      |   |                    |                               |
| 257.5<br>(192.0)    | 8900<br>(39.58)                | 10.85<br>(17.47)       | 1958                            | 1.7       | 0.458<br>(0.278)              | 15.10<br>(2.97)                      | 165<br>(74)                                     | 73<br>(23)         | 29.7<br>(100.5)               |

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

**NOTE 1:** The performance figures on this report apply to tractors with chassis serial numbers V187001 and higher.

**NOTE 2:** The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 8650 with the Massey Ferguson 8680 module.

**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 claims of 54% torque rise, 15% power bulge, nor 3 point lift capacity of 22760 lbs (10323 kg). 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. **2721**, Nebraska Summary 870, January 30, 2013.

Roger M. Hoy  
Director

M.R. Riley  
P.J. Jasa  
J.D. Luck  
Board of Tractor Test Engineers

| TRACTOR SOUND LEVEL WITH CAB                        | dB(A) |
|---|-------|
| At no load in Turtle - 4.6 mph (7.5 km/h) - no load | 70.0  |
| Bystander   | ---   |

**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 710/75R42;\*\*\*;12(80)  
Two 600/65R34;\*\*\*;12(80)  
22.2 in (565 mm)  
14100 lb (6395 kg)  
11265 lb (5110 kg)  
25365 lb (11505 kg)

## HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: No, Yes

OECD Static test

Maximum force exerted through whole range: 17850 lbs (79.4 kN) (claw type lower links)

20345 lbs (90.5 kN) (Quick hitch)

i) Sustained pressure at compensator cutoff: 2755 psi (190 bar)

**two outlet sets combined**

ii) Pump delivery rate at minimum pressure: 46.2 GPM (174.9 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 37.9 GPM (143.6 l/min)

Delivery pressure: 2380 psi (164 bar)

Power: 52.6 HP (39.3 kW)

**single outlet set**

ii) Pump delivery rate at minimum pressure: 28.9 GPM (109.3 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 26.1 GPM (103.2 l/min)

Delivery pressure: 2290 psi (158 bar)

Power: 34.9 HP (27.2 kW)

**HITCH DIMENSIONS AS TESTED—NO LOAD**

|     | Claw lower links |      | Quick Hitch |      |
|-----|------------------|------|-------------|------|
|     | inch             | mm   | inch        | mm   |
| A   | 31.9             | 810  | 31.9        | 810  |
| B   | 14.6             | 370  | 14.6        | 370  |
| C   | 19.1             | 484  | 19.1        | 484  |
| D   | 15.9             | 405  | 15.9        | 405  |
| E   | 12.4             | 315  | 12.4        | 315  |
| F   | 13.0             | 330  | 13.0        | 330  |
| G   | 40.4             | 1025 | 40.4        | 1025 |
| H   | 2.0              | 50   | 2.0         | 50   |
| I   | 17.7             | 450  | 17.7        | 450  |
| J   | 27.4             | 695  | 27.4        | 695  |
| K   | 24.8             | 630  | 24.8        | 630  |
| L   | 52.4             | 1330 | 52.4        | 1330 |
| *L' | --               | --   | 56.3        | 1430 |
| M   | 29.8             | 757  | 33.7        | 857  |
| N   | 42.9             | 1090 | 42.9        | 1090 |
| O   | 9.1              | 230  | 9.8         | 250  |
| P   | 54.3             | 1380 | 50.4        | 1280 |
| Q   | 41.5             | 1055 | 41.2        | 1046 |
| R   | 37.0             | 940  | 37.0        | 940  |

\*L' to Quick Attach ends

