

# NEBRASKA TRACTOR TEST 1978

## MASSEY FERGUSON 2680HD DIESEL

### 12 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
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#### MAXIMUM POWER AND FUEL CONSUMPTION

Rated Engine Speed—(PTO speed—1158 rpm)					
86.06 (64.17)	2200	5.52 (20.88)	0.450 (0.274)	15.60 (3.07)	
Maximum Power (1 hour)					
88.15 (65.73)	2001	5.27 (19.97)	0.420 (0.256)	16.71 (3.29)	
Standard Power Take-off Speed - (1000 rpm)					
87.82 (65.49)	1900	5.10 (19.32)	0.408 (0.248)	17.21 (3.39)	

#### VARYING POWER AND FUEL CONSUMPTION

86.06 (64.17)	2200	5.52 (20.88)	0.450 (0.274)	15.60 (3.07)	Air temperature
74.76 (55.75)	2246	4.98 (18.87)	0.468 (0.285)	15.00 (2.95)	74°F (23°C)
57.06 (42.55)	2286	4.26 (16.11)	0.524 (0.319)	13.41 (2.64)	Relative humidity
38.50 (28.71)	2313	3.29 (12.45)	0.600 (0.365)	11.70 (2.31)	61%
19.31 (14.40)	2327	2.42 (9.15)	0.879 (0.535)	7.99 (1.57)	Barometer
2.64 (1.96)	2337	1.55 (5.87)	4.134 (2.514)	1.70 (0.33)	29.03" Hg (98.31 kPa)

Maximum torque 288 lb.-ft. (397 Nm) at 1300 rpm  
 Maximum torque rise - 40.0%  
 Torque rise at 1801 rpm - 24%  
 Power increase at 2001 engine rpm - 2.4%

#### TRACTOR SOUND LEVEL WITH CAB

	Front wheel drive Engaged	Disengaged
	dB(A)	dB(A)
At no load in 6th (3LH) gear	81.6	81.1
Bystander in 12th (3HH) gear		84.9

#### 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 18.4-34; 10; 16 (110)  
 Two 14.9-24; 6; 16 (110)  
 20.0 in (510 mm)  
 5070 lb (2300 kg)  
 3610 lb (1637 kg)  
 8680 lb (3937 kg)

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

**Dates of tests:** June 24-25, 2010

**Manufacturer:** AGCO Corporation, 4205 River Green Parkway, Duluth, Georgia 30096

**FUEL, OIL and TIME:** Fuel No. 2 Diesel Specific gravity converted to 60°/60° F (15°/15°C) 0.8433 Fuel weight 7.022 lbs/gal (0.842 kg/l) Oil SAE 15W40 API service classification CF-4 Transmission and hydraulic lubricant MF Permatran III fluid Front axle lubricant SAE 90 API GL-5 Total time engine was operated 9.5 hours

**ENGINE: Make** Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** NL38785\*B5002871\* **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.134" x 5.00" (105.0 mm x 127.0 mm) **Compression ratio** 18.2 to 1 **Displacement** 268 cu in (4400 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Fuel filter** one paper element and water separator **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** one thermostat

**ENGINE OPERATING PARAMETERS: Fuel rate:** 36.4 - 40.1 lb/h (16.5 - 18.2 kg/h) **High idle:** 2260 - 2360 rpm **Turbo boost:** nominal 17.4-20.3 psi (120 - 140 kPa) as measured 18.9 psi (130 kPa)

**CHASSIS: Type** front wheel assist **Serial No.** 31024BU44020 **Tread width** rear 61.2" (1555 mm) to 97.0" (2464 mm) front 62.5" (1588 mm) to 95.5" (2425 mm) **Wheelbase** 92.9" (2360 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.47 (2.37) second 1.81 (2.91) third 2.17 (3.49) fourth 2.67 (4.29) fifth 4.09 (6.58) sixth 5.02 (8.08) seventh 6.02 (9.68) eighth 7.39 (11.89) ninth 8.85 (14.25) tenth 10.90 (17.54) eleventh 16.75 (26.95) twelfth 20.56 (33.09) reverse 2.10 (3.38), 2.58 (4.16), 8.61 (13.85), 10.58 (17.03) **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals which can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1908 engine rpm or 1000 rpm at 1900 engine rpm **Unladen tractor mass** 8505 lb (3858 kg)

## HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range: 3682 lbs (16.4 kN)

	<u>Auxiliary pump</u>	<u>Auxiliary and linkage pumps combined</u>
i) Sustained pressure of the open relief valve:	2734 psi (188 bar)	2822 psi (194 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.2 GPM (38.8 l/min)	18.4 GPM (69.7 l/min)
iii) Pump delivery rate at maximum hydraulic power:	9.4 GPM (35.4 l/min)	16.5 GPM (62.3 l/min)
Delivery pressure:	2041 psi (141 bar)	2152 psi (148 bar)
Power:	11.1 HP (8.3 kW)	20.7 HP (15.4 kW)

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

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 131°F (55°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1978**, July 29, 2010.

## THREE POINT HITCH PERFORMANCE (SAE Static test)

Observed maximum pressure psi. (bar)	2950 (203)
Location:	lift cylinder
Hydraulic oil temperature: °F (°C)	149 (65)
Location:	hydraulic valve
Category:	II
Quick attach:	none

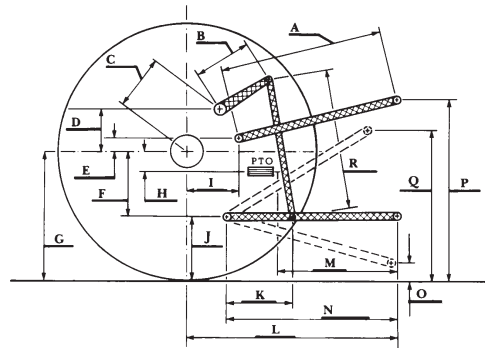
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Board of Tractor Test Engineers

System pressure 2655 psi (183 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	4199	4519	4604	4465	4390
" " " " " (kN)	(18.7)	(20.1)	(20.5)	(19.9)	(19.5)

	SAE test		OECD test	
	inch	mm	inch	mm
A	32.8	833	33.2	843
B	10.5	267	10.5	267
C	12.0	304	12.0	304
D	9.1	232	9.1	232
E	8.0	204	8.0	204
F	8.3	212	8.3	212
G	30.3	770	30.3	770
H	5.0	127	5.0	127
I	6.9	175	6.9	175
J	22.0	558	22.0	558
K	31.4	797	31.4	797
L	41.8	1062	41.8	1062
M	30.0	762	30.0	762
N	43.2	1098	43.2	1098
O	8.0	203	8.0	203
P	41.0	1041	46.0	1168
Q	36.6	930	36.6	930
R	29.2	742	29.2	742



**HITCH DIMENSIONS AS TESTED - NO LOAD**



**MASSEY FERGUSON 2680HD Diesel**

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln