

NEBRASKA TRACTOR TEST 1851 MASSEY FERGUSON 491 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1158 rpm)					
78.81 (58.77)	2200	4.95 (18.73)	0.441 (0.268)	15.92 (3.14)	
Maximum Power (1 hour)					
85.87 (64.03)	2100	5.18 (19.62)	0.424 (0.258)	16.56 (3.26)	
Standard Power Take-off Speed - (1000 rpm)					
84.16 (62.76)	1900	4.86 (18.40)	0.406 (0.247)	17.31 (3.41)	

VARYING POWER AND FUEL CONSUMPTION

78.81 (58.77)	2200	4.95 (18.73)	0.441 (0.268)	15.92 (3.14)	Air temperature
67.83 (50.58)	2219	4.46 (16.87)	0.461 (0.281)	15.22 (3.00)	75°F (24°C)
50.85 (37.92)	2231	3.70 (14.01)	0.511 (0.311)	13.74 (2.71)	Relative humidity
34.23 (25.53)	2239	2.88 (10.88)	0.590 (0.359)	11.91 (2.35)	58%
16.92 (12.62)	2251	2.09 (7.92)	0.869 (0.528)	8.09 (1.59)	Barometer
1.70 (1.27)	2259	1.48 (5.60)	6.125 (3.726)	1.15 (0.23)	28.87"Hg (97.77 kPa)

Maximum Torque 282 lb.-ft. (383 Nm) at 1199 rpm
Maximum Torque Rise - 50.0%
Torque rise at 1800 rpm - 28%

TRACTOR SOUND LEVEL WITHOUT CAB	Front wheel drive Engaged	Disengaged
dB(A)	dB(A)	dB(A)
At no load in 6th(3LH) gear	94.7	94.7
Bystander in 12th(3HH) gear		87.6

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 18.4-30; 8; 16 (110)
Two 12.4-24; 6; 20 (135)
18.0 in (455 mm)
4505 lb (2044 kg)
3105 lb (1408 kg)
7610 lb (3452 kg)

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

Dates of tests: May 25-26, 2005

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) 0.8437 Fuel weight 7.025 lbs/gal (0.842 kg/l) Oil SAE 15W40 API service classification CE/CF-4 Transmission and hydraulic lubricant AGCO Power Fluid 821 XL fluid Total time engine was operated 10.0 hours

ENGINE: Make Perkins Diesel **Type** four cylinder vertical with turbocharger **Serial No.** RG37828*B503638M* **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: 34.0 - 35.7 lb/h (15.4 - 16.2 kg/h) **High idle:** 2250 - 2350 rpm **Turbo boost:** nominal 9.7-11.7 psi (67 - 81 kPa) as measured 10.8 psi (74 kPa)

CHASSIS: Type front wheel assist **Serial No.** 8027BP11089 **Tread width** rear 64.0" (1626 mm) to 88.1" (2238 mm) front 66.1" (1680 mm) to 83.5" (2120 mm) **Wheelbase** 90.2" (2290 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.34 (2.16) second 1.65 (2.65) third 1.98 (3.18) fourth 2.43 (3.91) fifth 3.73 (6.00) sixth 4.57 (7.37) seventh 5.49 (8.83) eighth 6.75 (10.86) ninth 8.08 (13.01) tenth 9.94 (16.00) eleventh 15.25 (24.54) twelfth 18.75 (30.17) reverse 1.92 (3.09), 2.36 (3.80), 7.85 (12.63), 9.65 (15.53), **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** 7435 lb (3372 kg)

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 3682 lbs (16.4 kN)

i) Opening pressure of relief valve:	NA	<u>Auxiliary and linkage pumps combined</u>
Sustained pressure of the open relief valve:	2445 psi (169 bar)	2580 psi (178 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.0 GPM (37.9 l/min)	17.9 GPM (67.8 l/min)
iii) Pump delivery rate at maximum hydraulic power:	8.9 GPM (33.7 l/min)	15.4 GPM (58.3 l/min)
Delivery pressure:	1676 psi (116 bar)	1971 psi (136 bar)
Power:	8.7 HP (6.5 kW)	17.7 HP (13.2 kW)

THREE POINT HITCH PERFORMANCE

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

SAE Static Test—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)

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. This tractor did not meet the manufacturer's remote flow claims of 11.2 GPM (42.4 lpm) with auxiliary pump nor 18.5 GPM (70.4 lpm) with both pumps combined. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 135°F (57°C).

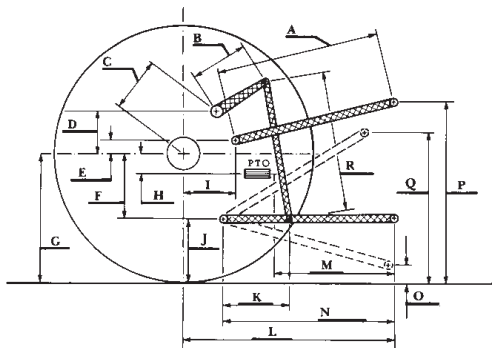
We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1851, August 19, 2005.

Leonard L. Bashford
Director

M.F. Kocher
J.A. Smith
W.P. Campbell
Board of Tractor Test Engineers

	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



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