

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

---

January 2005

## Test 1865: Massey Ferguson 481 and 583 Diesel 8-speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

Follow this and additional works at: <https://digitalcommons.unl.edu/tractormuseumlit>



Part of the [Energy Systems Commons](#), [History of Science, Technology, and Medicine Commons](#), [Other Mechanical Engineering Commons](#), [Physical Sciences and Mathematics Commons](#), [Science and Mathematics Education Commons](#), and the [United States History Commons](#)

---

Nebraska Tractor Test Lab, "Test 1865: Massey Ferguson 481 and 583 Diesel 8-speed" (2005). *Nebraska Tractor Tests*. 2115.

<https://digitalcommons.unl.edu/tractormuseumlit/2115>

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

# NEBRASKA TRACTOR TEST 1865

## MASSEY FERGUSON 481 DIESEL

## ALSO MASSEY FERGUSON 583 DIESEL

## 8 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—664 rpm)					
73.61 (54.89)	2200	4.89 (18.50)	0.468 (0.285)	15.06 (2.97)	
Standard Power Take-off Speed - (540 rpm)					
67.07 (50.02)	1790	4.31 (16.32)	0.453 (0.276)	15.56 (3.06)	

### VARYING POWER AND FUEL CONSUMPTION

73.61 (54.89)	2200	4.89 (18.50)	0.468 (0.285)	15.06 (2.97)	Air temperature
64.28 (47.93)	2259	4.14 (15.68)	0.454 (0.276)	15.52 (3.06)	83°F (28°C)
49.29 (36.76)	2302	3.46 (13.10)	0.495 (0.301)	14.24 (2.81)	Relative humidity
33.03 (24.63)	2323	2.71 (10.25)	0.578 (0.352)	12.19 (2.40)	56%
16.56 (12.35)	2353	1.94 (7.36)	0.827 (0.503)	8.52 (1.68)	Barometer
1.02 (0.76)	2367	1.33 (5.05)	9.219 (5.608)	0.76 (0.15)	28.89"Hg (97.83 kPa)

Maximum torque 213 lb.-ft. (289 Nm) at 1101 rpm

Maximum torque rise - 21.4%

Torque rise at 1788 rpm - 11%

### TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
At no load in 4th(4L) gear	94.4
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 16.9-30; 8; 16 (110)

Two 9.5L-15; 6; 32 (220)

18.0 in (455 mm)

3835 lb (1740 kg)

2340 lb (1061 kg)

6175 lb (2801 kg)

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

**Dates of tests:** November 1-3, 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) 0.8468 Fuel weight 7.051 lbs/gal (0.845 kg/l) Oil SAE 15W40 API service classification CF-4 Transmission and hydraulic lubricant AGCO Power Fluid 821 XL fluid Total time engine was operated 6.0 hours

**ENGINE:** Make Perkins Diesel Type four cylinder vertical Serial No. RG37830\*B505086M\* 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 vertical Cooling medium temperature control one thermostat

**ENGINE OPERATING PARAMETERS:** Fuel rate: 33.0 - 35.7 lb/h (15.0 - 16.2 kg/h) High idle: 2300 - 2400 rpm

**CHASSIS:** Type Standard Serial No. 9365BP07037 Tread width rear 61.8" (1570 mm) to 85.2" (2165 mm) front 59.1" (1500 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 1.59 (2.56) second 2.29 (3.68) third 3.38 (5.44) fourth 4.77 (7.68) fifth 6.16 (9.92) sixth 9.32 (15.00) seventh 13.55 (21.80) eighth 19.21 (30.91) reverse 1.80 (2.90), 2.80 (4.50), 3.97 (6.40), 5.67 (9.12) 7.33 (11.80), 10.94 (17.60), 15.91 (25.60), 22.56 (36.30) 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 1789 engine rpm Unladen tractor mass 6000 lb (2722 kg)

### THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II

Quick Attach: None

Maximum force exerted through whole range: 3391 lbs (15.1 kN)

i) Opening pressure of relief valve: NA

Auxiliary pump

Sustained pressure of the open relief valve: 2584 psi (178 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed: 11.0 GPM (41.6 l/min)

iii) Pump delivery rate at maximum hydraulic power: 11.1 GPM (42.0 l/min)

Delivery pressure: 1832 psi (126 bar)

Power: 11.9 HP (8.8 kW)

### THREE POINT HITCH PERFORMANCE

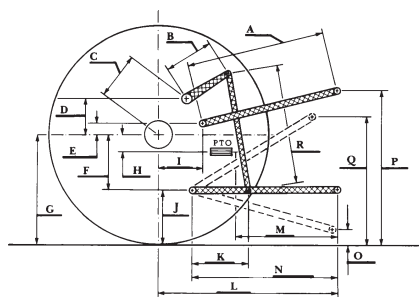
Observed maximum pressure psi. (bar) 2750 (190)  
Location: lift cylinder  
Hydraulic oil temperature: °F (°C) 144 (62)  
Location: hydraulic valve  
Category: II  
Quick attach: none

SAE Static Test—System pressure 2385 psi (164 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	4007	4147	4227	4102	3947
" " " " " (kN)	(17.8)	(18.4)	(18.8)	(18.2)	(17.6)

	SAE test		OECD test	
	inch	mm	inch	mm
A	28.5	724	29.7	754
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	8.4	212	8.4	212
G	27.4	695	27.4	695
H	3.7	95	3.7	95
I	6.9	175	6.9	175
J	19.0	483	19.0	483
K	19.1	484	19.1	484
L	36.3	922	36.3	922
M	24.5	622	24.5	622
N	37.7	958	37.7	958
O	8.0	203	8.0	203
P	38.0	965	43.0	1093
Q	35.8	909	35.8	909
R	26.0	660	26.0	660

### HITCH DIMENSIONS AS TESTED - NO LOAD



MASSEY FERGUSON 481 Diesel

Institute of Agriculture and Natural Resources  
University of Nebraska-Lincoln

**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 claim of 11.2 GPM (42.4 lpm) with auxiliary pump. The manufacturer's claim of 15.5 GPM (58.6 lpm) with auxiliary and lift pumps combined was not verified. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 157°F (69°C).

**Report reissued:** Supplemental sales permit for Massey Ferguson 583 Diesel, October, 2006.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1865, November 3, 2006.

Roger M. Hoy  
Director

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