

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

2010

Test 1976: Massey Ferguson 2660HD

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, 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 1976: Massey Ferguson 2660HD" (2010). *Nebraska Tractor Tests*. 2374. <https://digitalcommons.unl.edu/tractormuseumlit/2374>

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 1976

MASSEY FERGUSON 2660HD 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)					
70.96 (52.91)	2199	4.66 (17.63)	0.461 (0.280)	15.23 (3.00)	
Standard Power Take-off Speed - (543 rpm)					
74.17 (55.31)	1799	4.22 (15.97)	0.399 (0.243)	17.58 (3.46)	

VARYING POWER AND FUEL CONSUMPTION

70.96 (52.91)	2199	4.66 (17.63)	0.461 (0.280)	15.23 (3.00)	Air temperature
62.25 (46.42)	2270	4.38 (16.58)	0.494 (0.301)	14.21 (2.80)	76°F (25°C)
47.43 (35.37)	2304	3.69 (13.97)	0.546 (0.332)	12.85 (2.53)	Relative humidity
31.88 (23.78)	2318	3.05 (11.53)	0.671 (0.408)	10.47 (2.06)	54%
15.95 (11.90)	2331	2.28 (8.63)	1.003 (0.610)	7.00 (1.38)	Barometer
1.39 (1.04)	2344	1.45 (5.48)	7.319 (4.452)	0.96 (0.19)	28.82"Hg (97.60 kPa)

Maximum torque 239 lb.-ft. (324 Nm) at 1451 rpm
Maximum torque rise - 41.0%
Torque rise at 1749 rpm - 31%
Power increase at 1799 engine rpm - 4.5%

TRACTOR SOUND LEVEL WITH CAB	Front wheel drive	
	Engaged dB(A)	Disengaged dB(A)
At no load in 4th (4L) gear	81.5	81.0
Bystander in 8th (4H) gear		82.7

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; 6; 16 (110)
Two 12.4-24; 8; 16 (110)
18.0 in (455 mm)
4605 lb (2089 kg)
3320 lb (1506 kg)
7925 lb (3395 kg)

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

Dates of tests: June 15 - 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. NL38778*B500292T* 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: 32.5 - 35.9 lb/h (14.8 - 16.3 kg/h) High idle: 2260 - 2360 rpm Turbo boost: nominal 13.1-16.0 psi (90 - 110 kPa) as measured 14.7 psi (101 kPa)

CHASSIS: Type front wheel assist Serial No. BU40004 Tread width rear 61.2" (1555 mm) to 96.5" (2451 mm) front 52.2" (1327 mm) to 99.7" (2120 mm) Wheelbase 93.3" (2370 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.65 (2.65) second 2.37 (3.81) third 3.50 (5.64) fourth 4.95 (7.96) fifth 6.39 (10.28) sixth 9.66 (15.54) seventh 14.04 (22.59) eighth 19.90 (32.02) reverse 1.86 (3.00), 2.90 (4.66), 4.12 (6.63), 5.87 (9.45) 7.59 (12.22), 11.33 (18.23), 16.48 (26.52), 23.36 (37.60) 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 1787 engine rpm Unladen tractor mass 7750 lb (3515 kg)

HYDRAULIC PERFORMANCE

CATEGORY: II

Quick Attach: None

OECD Static test

Maximum force exerted through whole range:	3391 lbs (15.1 kN)	
	<u>Auxiliary pump</u>	<u>Auxiliary and linkage pumps combined</u>
i) Sustained pressure of the open relief valve:	2591 psi (179 bar)	2646 psi (182 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.3 GPM (39.0 l/min)	15.4 GPM (58.2 l/min)
iii) Pump delivery rate at maximum hydraulic power:	9.8 GPM (37.0 l/min)	13.9 GPM (52.7 l/min)
Delivery pressure:	1871 psi (129 bar)	1951 psi (134 bar)
Power:	10.7 HP (8.0 kW)	15.8 HP (11.8 kW)

THREE POINT HITCH PERFORMANCE (SAE Static test)

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

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)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

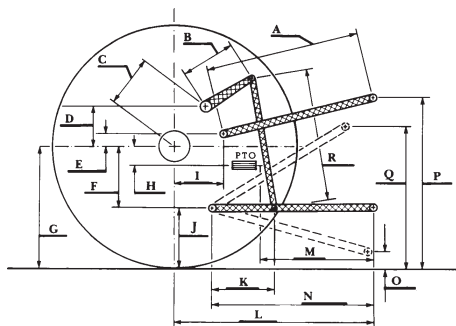
REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. For the maximum power tests, the fuel temperature at the injection pump inlet was maintained at 123°F (51°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. 1976, July 29, 2010.

Roger M. Hoy
Director

M.F. Kocher
D.R. Keshwani
J.A. Smith
Board of Tractor Test Engineers

	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 2660HD Diesel

Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln