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2010

Test 1975: Massey Ferguson 2650HD

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, tractortestlab@unl.edu

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NEBRASKA TRACTOR TEST 1975

MASSEY FERGUSON 2650HD 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)					
62.95 (46.95)	2200	4.25 (16.07)	0.474 (0.288)	14.83 (2.92)	
Maximum Power (1 hour)					
67.06 (50.01)	2000	4.08 (15.46)	0.428 (0.260)	16.42 (3.23)	
Standard Power Take-off Speed - (540 rpm)					
66.07 (49.27)	1789	3.75 (14.20)	0.399 (0.243)	17.61 (3.47)	

VARYING POWER AND FUEL CONSUMPTION

62.95 (46.95)	2200	4.25 (16.07)	0.474 (0.288)	14.83 (2.92)	Air temperature
54.61 (40.72)	2245	3.92 (14.84)	0.504 (0.307)	13.93 (2.74)	77°F (25°C)
41.71 (31.10)	2281	3.26 (12.33)	0.548 (0.334)	12.80 (2.52)	Relative humidity
27.96 (20.85)	2294	2.61 (9.86)	0.654 (0.398)	10.73 (2.11)	68%
14.04 (10.47)	2307	1.88 (7.13)	0.942 (0.573)	7.46 (1.47)	Barometer
1.28 (0.95)	2319	1.43 (5.42)	7.880 (4.793)	0.89 (0.18)	28.69"Hg (97.16 kPa)

Maximum torque 225 lb.-ft. (305 Nm) at 1150 rpm
Maximum torque rise - 49.9%
Torque rise at 1799 rpm - 28%
Power increase at 2000 engine rpm - 6.5%

TRACTOR SOUND LEVEL WITHOUT CAB

	dB(A)
At no load in 4th (4L) gear	90.3
Bystander in 8th (4H) gear	83.3

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 16.9-30; 6; 16 (110)
Two 9.5L-15; 8; 32 (220)
18.0 in (455 mm)
4110 lb (1864 kg)
2430 lb (1102 kg)
6540 lb (2966 kg)

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

Dates of tests: June 17 - 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 Permtran III fluid Total time engine was operated 9.5 hours

ENGINE: Make Perkins Diesel Type four cylinder vertical with turbocharger Serial No. NL38779*B500418T* 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: 28.2 - 31.3 lb/h (12.8 - 14.2 kg/h) High idle: 2260 - 2360 rpm Turbo boost: nominal 11.6-14.5 psi (80 - 100 kPa) as measured 12.9 psi (89 kPa)

CHASSIS: Type Standard Serial No. BU49012 Tread width rear 61.2" (1555 mm) to 96.5" (2451 mm) front 54.7" (1390 mm) to 78.3" (1990 mm) Wheelbase 90.0" (2285 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), 3.98 (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 1787 engine rpm Unladen tractor mass 6365 lb (2887 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:	2567 psi (177 bar)	2676 psi (184 bar)
ii) Pump delivery rate at minimum pressure and rated engine speed:	10.2 GPM (38.7 l/min)	15.3 GPM (58.0 l/min)
iii) Pump delivery rate at maximum hydraulic power:	9.5 GPM (35.9 l/min)	13.9 GPM (52.5 l/min)
Delivery pressure:	1921 psi (132 bar)	1981 psi (137 bar)
Power:	10.6 HP (7.9 kW)	16.0 HP (12.0 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 115°F (46°C).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1975**, July 29, 2010.

Roger M. Hoy
Director

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

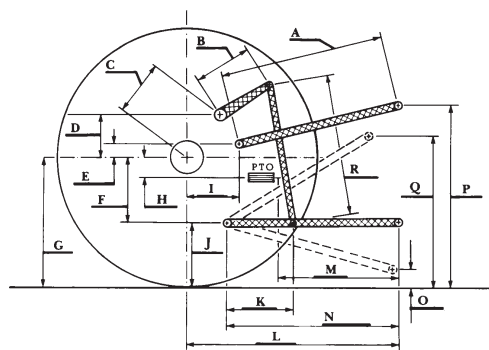
THREE POINT HITCH PERFORMANCE(SAE Static test)

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)

	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 2650HD Diesel

Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln