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January 1995

Test 1696: Massey-Ferguson 9240 Diesel 18-Speed

Nebraska Tractor Test Lab

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NEBRASKA OECD TRACTOR TEST 1696—SUMMARY 182

MASSEY FERGUSON 9240 DIESEL

18 SPEED

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

Dates of Test: June 8-16, 1995

Manufacturer: AGCO Corporation, Duluth,
Georgia 30136

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—1056 rpm)					
209.55 (156.26)	2200	12.15 (46.00)	0.404 (0.246)	17.24 (3.40)	
Standard Power Take-off Speed (1000 rpm)					
219.14 (163.42)	2083	12.34 (46.71)	0.393 (0.239)	17.76 (3.50)	
Maximum Power (2 hours)					
226.31 (168.76)	2000	12.46 (47.18)	0.384 (0.234)	18.16 (3.58)	
VARYING POWER AND FUEL CONSUMPTION					
209.55 (156.26)	2200	12.15 (46.00)	0.404 (0.246)	17.24 (3.40)	Air temperature
187.04 (139.47)	2312	11.45 (43.33)	0.427 (0.260)	16.34 (3.22)	75°F (25°C)
142.19 (106.03)	2339	9.47 (35.83)	0.464 (0.282)	15.02 (2.96)	Relative humidity
95.65 (71.33)	2365	7.36 (27.85)	0.536 (0.326)	13.00 (2.56)	56%
48.58 (36.23)	2389	5.46 (20.69)	0.784 (0.477)	8.89 (1.75)	Barometer
1.10 (0.82)	2417	3.57 (13.52)	22.544 (13.713)	0.31 (0.06)	28.92" (97.92 kPa)

Maximum Torque 660 lb.-ft. (895 Nm) at 1601 rpm
Maximum Torque Rise 31.9%
Torque rise at 1800 rpm 26%

DRAWBAR PERFORMANCE (Unballasted—Front Drive Engaged) FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp·hr (kg/kW·h)	Hp·hr/gal (kW·h/l)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Maximum Power—8th Gear									
175.52 (130.89)	13822 (61.48)	4.76 (7.66)	2199	5.50	0.480 (0.292)	14.53 (2.86)	187 (86)	70 (21)	28.82 (97.60)
75% of Pull at Maximum Power—8th Gear									
141.56 (105.56)	10322 (45.91)	5.14 (8.28)	2323	3.30	0.518 (0.315)	13.46 (2.65)	187 (86)	79 (26)	28.85 (97.70)
50% of Pull at Maximum Power—8th Gear									
96.80 (72.18)	6881 (30.61)	5.28 (8.49)	2353	2.12	0.599 (0.364)	11.65 (2.29)	185 (85)	79 (26)	28.85 (97.70)
75% of Pull at Reduced Engine Speed—10th Gear									
141.48 (105.50)	10321 (45.91)	5.14 (8.27)	1712	3.48	0.453 (0.275)	15.40 (3.03)	186 (86)	79 (26)	28.85 (97.70)
50% of Pull at Reduced Engine Speed—10th Gear									
96.90 (72.26)	6875 (30.58)	5.29 (8.51)	1735	2.12	0.490 (0.298)	14.24 (2.81)	184 (84)	79 (26)	28.85 (97.70)

FUEL OIL and TIME: Fuel No. 2 Diesel **Cetane**
No. 50.6 **Specific gravity converted to 60°/60°**
F (15°/15°C) 0.8374 **Fuel weight** 6.972 lbs/gal
(0.836 kg/l) **Oil SAE** 15W-40 **API service**
classification CDII/SG **To motor** 4.990 gal
(18.889 l) **Drained from motor** 4.676 gal (17.702
l) **Transmission and hydraulic lubricant** AGCO
Power Fluid 821XL **Front axle lubricant** AGCO
Gear Lube 715 SAE 80W-90 **Total time engine**
was operated 23.5 hours.

ENGINE: Make Consolidated Diesel Corporation
Diesel **Type** six cylinder vertical with turbocharger
and intercooler **Serial No.** 45121811 **Crankshaft**
lengthwise **Rated engine speed** 2200 **Bore and**
stroke (as specified) 4.488" × 5.315" (114.0 mm ×
135 mm) **Compression ratio** 16.5 to 1
Displacement 505 cu in (8268 ml) **Starting system**
12 volt **Lubrication** pressure **Air cleaner** two paper
elements and aspirator **Oil filter** two full flow
cartridges **Oil cooler** engine coolant heat exchanger
for crankcase oil, radiator for hydraulic and final drive
oil, radiator for transmission oil **Fuel filter** two paper
elements **Muffler** underhood **Exhaust** vertical
Cooling medium temperature control two
thermostats.

ENGINE OPERATING PARAMETERS: **Fuel**
rate: 81.8-90.4 lb/h (37.1-41.0 kg/h) **High idle:**
2380-2480 rpm **Turbo boost** nominal 20.0 psi (138
kPa) as measured 18.1 psi (124 kPa)

CHASSIS: **Type** front wheel assist **Serial No.**
9240/0019 **Tread width** rear 64.1" (1560 mm) to
116.0" (2946 mm) front 60.6" (1539 mm) to 87.8"
(2230 mm) **Wheel base** 115.0" (2921 mm) **Hydraulic**
control system direct engine drive **Transmission**
selective gear fixed ratio with full range operator
controlled powershift **Nominal travel speeds mph**
(km/h) first 1.63 (2.62) second 1.92 (3.09) third
2.25 (3.62) fourth 2.57 (4.14) fifth 3.04 (4.89) sixth
3.56 (5.73) seventh 4.19 (6.74) eighth 4.95 (7.97)
ninth 5.80 (9.33) tenth 6.73 (10.83) eleventh 7.95
(12.80) twelfth 9.31 (14.98) thirteenth 10.66 (17.16)
fourteenth 12.60 (20.28) fifteenth 14.74 (23.73)
sixteenth 16.52 (26.58) seventeenth 20.51 (33.01)
eighteenth 24.00 (38.63) reverse 1.97 (3.17), 2.33
(3.75), 1.74 (4.39), 3.12 (5.02), 3.69 (5.94), 4.32
(6.95), 5.08 (8.18), 6.01 (9.67), 7.03 (11.32) **Clutch**
multiple wet disc electro hydraulically actuated by foot
pedal **Brakes** wet multiple disc hydraulically actuated
by two foot pedals which can be locked together
Steering hydrostatic **Power take-off** 1000 rpm at
2083 engine rpm **Unladen tractor mass** 19872 lb
(9014 kg)

DRAWBAR PERFORMANCE
(Unballasted—Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
6th Gear									
156.14 (116.43)	18539 (82.46)	3.16 (3.08)	2239	14.37	0.538 (0.327)	12.95 (2.55)	186 (86)	67 (19)	28.82 (97.60)
7th Gear									
175.71 (131.03)	17144 (76.26)	3.84 (6.19)	2164	8.25	0.483 (0.294)	14.44 (2.84)	186 (86)	68 (20)	28.82 (97.60)
8th Gear									
184.92 (137.89)	16295 (72.48)	4.26 (6.85)	2010	7.52	0.464 (0.282)	15.02 (2.96)	187 (86)	70 (21)	28.82 (97.60)
9th Gear									
187.32 (139.68)	13778 (61.29)	5.10 (8.21)	2007	5.24	0.457 (0.278)	15.26 (3.01)	188 (86)	71 (22)	28.82 (97.60)
10th Gear									
190.51 (142.06)	11980 (53.29)	5.96 (9.60)	2000	4.19	0.450 (0.273)	15.51 (3.06)	188 (87)	72 (22)	28.82 (97.60)
11th Gear									
191.29 (142.65)	10084 (44.85)	7.11 (11.45)	2001	3.39	0.446 (0.271)	15.64 (3.08)	189 (87)	73 (23)	28.82 (97.60)
12th Gear									
187.22 (139.61)	8358 (37.18)	8.40 (13.52)	2002	2.58	0.455 (0.277)	15.33 (3.02)	189 (87)	74 (23)	28.83 (97.63)

DRAWBAR PERFORMANCE
(Ballasted—Front Drive Engaged)
MAXIMUM POWER IN SELECTED GEARS

5th Gear									
165.66 (123.53)	21948 (97.63)	2.83 (4.56)	2233	10.28	0.508 (0.309)	13.73 (2.70)	185 (85)	60 (16)	28.96 (98.07)
6th Gear									
170.53 (127.16)	19900 (88.52)	3.21 (5.17)	2158	10.04	0.497 (0.303)	14.01 (2.76)	187 (86)	71 (22)	29.08 (98.48)
7th Gear									
185.03 (137.98)	19344 (86.04)	3.59 (5.77)	2004	8.12	0.465 (0.283)	15.00 (2.96)	187 (86)	70 (21)	29.08 (98.48)
8th Gear									
188.69 (140.71)	16321 (72.60)	4.34 (6.98)	2001	5.78	0.453 (0.275)	15.41 (3.04)	188 (87)	75 (24)	29.07 (98.44)
9th Gear									
189.99 (141.68)	13820 (61.47)	5.16 (8.30)	2001	4.65	0.451 (0.275)	15.45 (3.04)	188 (87)	73 (23)	29.08 (98.48)
10th Gear									
192.42 (143.49)	11969 (53.24)	6.03 (9.70)	1995	3.49	0.447 (0.272)	15.61 (3.07)	187 (86)	66 (19)	29.06 (98.41)
11th Gear									
192.06 (143.22)	10017 (44.56)	7.19 (11.57)	2001	2.86	0.449 (0.273)	15.54 (3.06)	187 (86)	68 (20)	29.07 (98.44)
12th Gear									
187.12 (139.53)	8313 (36.98)	8.44 (13.59)	1996	2.40	0.455 (0.277)	15.32 (3.02)	187 (86)	69 (21)	29.07 (98.44)

TRACTOR SOUND LEVEL WITH CAB	dB(A)
Maximum sound level in 8th gear	75.0
Transport sound level in 18th gear	76.0
Bystander in 18th gear	86.5

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear Tires —No., size, ply & psi (kPa)	Four 20.8R42; **, 20 (140)	Two 20.8R42; **, 20 (140)
Ballast —Duals (total)	2340 lb (1061 kg)	None
—Test Equip. (total)	112 lb (51 kg)	None
Front Tires —No., size, ply & psi (kPa)	Two 16.9R30; **, 24 (165)	Two 16.9R30; **, 24 (165)
Ballast —Liquid (total)	None	None
—Test Equip. (total)	90 lb (41 kg)	None
Height of Drawbar	23.0 in (585 mm)	22.0 in (560 mm)
Static Weight with Operator —Rear	15646 lb (7097 kg)	13194 lb (5985 kg)
—Front	6934 lb (3145 kg)	6844 lb (3104 kg)
—Total	22580 lb (10242 kg)	20038 lb (9089 kg)

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 return was maintained at 162° F (72°C). This tractor did not meet manufacturers claim of 22 GPM (83 l/m) hydraulic flow. The pull in 5th gear (ballasted) was limited to avoid excessive tractor bouncing. The performance results on this summary were taken from OECD tests conducted under the Code II Restricted Standard Test Code procedure.

We, the undersigned, certify that this is a true and correct report of official Tractor Test No. **1696**, Summary 182, July 12, 1995.

LOUIS I. LEVITICUS

Engineer-in-Charge

L.L. BASHFORD

R.D. GRISSE

M.F. KOCHER

Board of Tractor Test Engineers

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: III

Quick Attach: Walterscheid lower link arms

Maximum Force Exerted Through Whole Range:

14031 lbs (62.4 kN)

i) Opening pressure of relief valve:

NA

Sustained pressure with pump stalled:

2770 psi (191 bar)

ii) Pump delivery rate at minimum pressure and rated engine speed:

20.5 GPM (77.6 l/min)

iii) Pump delivery rate at maximum

hydraulic power:

17.3 GPM (65.5 l/min)

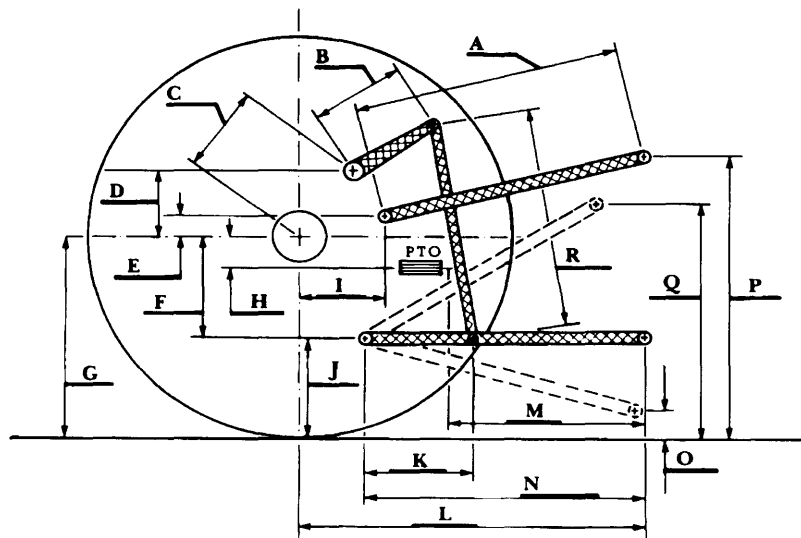
Delivery pressure:

2350 psi (162 bar)

Power:

23.7 HP (17.7 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	25.8	654
B	23.7	603
C	14.6	372
D	10.4	263
E	11.4	290
F	10.4	263
G	36.2	920
H	3.5	89
I	20.8	528
J	25.9	657
K	25.4	645
L	45.4	1154
M	23.9	608
N	35.1	891
O	9.0	229
P	52.9	1343
Q	41.7	1059
R	41.1	1045



MASSEY FERGUSON 9240 DIESEL

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