January 1980

Nebraska Summary 001: Massey Ferguson 240 Diesel 8 Speed

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SUMMARY OF OECD TEST 688—NEBRASKA SUMMARY 001
MASSEY FERGUSON 240 DIESEL
8 SPEED

POWER TAKE-OFF PERFORMANCE

<table>
<thead>
<tr>
<th>Power HP</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>lbf/hp.hr (kg/kW/h)</th>
<th>Hp/hr/gal (kW/hl)</th>
<th>Mean Atmospheric Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.9 (32.0)</td>
<td>2250</td>
<td>2.62</td>
<td>0.432</td>
<td>16.34</td>
<td></td>
</tr>
<tr>
<td>37.7 (28.1)</td>
<td>1789</td>
<td>2.16</td>
<td>0.406</td>
<td>17.46</td>
<td></td>
</tr>
</tbody>
</table>

MAXIMUM POWER AND FUEL CONSUMPTION

<table>
<thead>
<tr>
<th>Rated Engine Speed—(PTO speed—679 rpm)</th>
<th>Power HP</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>lbf/hp.hr (kg/kW/h)</th>
<th>Hp/hr/gal (kW/hl)</th>
<th>Air temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.9 (32.0)</td>
<td>2250</td>
<td>2.62</td>
<td>0.432</td>
<td>16.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37.7 (28.1)</td>
<td>1789</td>
<td>2.16</td>
<td>0.406</td>
<td>17.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

VARING POWER AND FUEL CONSUMPTION

<table>
<thead>
<tr>
<th>Air temperature</th>
<th>Power HP</th>
<th>Crankshaft speed rpm</th>
<th>Gal/hr</th>
<th>lbf/hp.hr (kg/kW/h)</th>
<th>Hp/hr/gal (kW/hl)</th>
<th>Relative humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>68°F (21°C)</td>
<td>42.9 (32.0)</td>
<td>2250</td>
<td>2.62</td>
<td>0.432</td>
<td>16.34</td>
<td></td>
</tr>
<tr>
<td>37.7 (28.1)</td>
<td>1789</td>
<td>2.16</td>
<td>0.406</td>
<td>17.46</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DRAWBAR PERFORMANCE

<table>
<thead>
<tr>
<th>Power HP</th>
<th>Drawbar pull (lbf)</th>
<th>Speed mph (km/h)</th>
<th>Crankshaft speed rpm</th>
<th>Slip %</th>
<th>Fuel Consumption lbf/hp.hr (kg/kW/h)</th>
<th>Hp/hr/gal (kW/hl)</th>
<th>Temp.-°F (°C)</th>
<th>Cooling med</th>
<th>Air dry bulb</th>
<th>Barom. inch Hg (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.4 (22.7)</td>
<td>2770</td>
<td>4.13</td>
<td>2404</td>
<td>6.0</td>
<td>(0.504)</td>
<td>(2.79)</td>
<td>(81)</td>
<td>(9)</td>
<td>(101.1)</td>
<td></td>
</tr>
</tbody>
</table>

MAXIMUM POWER IN SELECTED GEARS

<table>
<thead>
<tr>
<th>Power HP</th>
<th>Drawbar pull (lbf)</th>
<th>Speed mph (km/h)</th>
<th>Crankshaft speed rpm</th>
<th>Slip %</th>
<th>Fuel Consumption lbf/hp.hr (kg/kW/h)</th>
<th>Hp/hr/gal (kW/hl)</th>
<th>Temp.-°F (°C)</th>
<th>Cooling med</th>
<th>Air dry bulb</th>
<th>Barom. inch Hg (kPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.0 (22.4)</td>
<td>5620</td>
<td>2.01</td>
<td>2372</td>
<td>15.0</td>
<td>(0.569)</td>
<td>(12.44)</td>
<td>(160)</td>
<td>(46)</td>
<td>(29.77)</td>
<td></td>
</tr>
<tr>
<td>38.0 (28.3)</td>
<td>4990</td>
<td>2.85</td>
<td>2360</td>
<td>11.8</td>
<td>(0.511)</td>
<td>(13.81)</td>
<td>(171)</td>
<td>(43)</td>
<td>(29.77)</td>
<td></td>
</tr>
</tbody>
</table>

MAXIMUM TORQUE

117.6 lbf ft (159.5 Nm) @ 1400 RPM

Location of Test: National Institute of Agricultural Engineering, Silsoe, England

Dates of Test: September, 1979 to March, 1980

Manufacturer: Massey-Ferguson Manufacturing Company, Banner Lane, Coventry, Warwickshire, England

FUEL AND OIL: Fuel No. 2 Diesel Cetane No. 56.0 Specific gravity converted to 60°/60°F (15°/15°C) 0.848 Fuel weight 7.06 lbs/gal (0.846 kg/l)

Oil SAE 20W/50 Oil Consumption for 10 hours 0.56 lb (252 gm) Transmission and final drive lubricant Agricastrol MP SAE 20W/30

ENGINE: Make Perkins AD 3152 Diesel Type 3 cylinder vertical Serial No. CE 22488 U56114E Crankshaft lengthwise Rated engine speed 2250 Bore and stroke 3.6" × 5.0" (91.4 mm × 127 mm) Compression ratio 18.5 to 1 Displacement 155 cu in (2500 ml) Starting system 12 volt Air cleaner A.C. oil bath with centrifugal prefilter Oil filter full flow canister Fuel filter C.A.V. dual element with sediment bowl Muffler vertical Cooling medium temperature control one thermostat

CHASSIS: Type Standard-two wheel drive Serial No. 500087 Tread width rear 52.4" (1330 mm) to 76.5" (1942 mm) front 49" (1245 mm) to 73.1" (1857 mm) Wheel base 74.5" (1892 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio Nominal travel speeds mph (km/h) first 1.55 (2.49) second 2.27 (3.65) third 3.10 (4.99) fourth 4.16 (6.70) fifth 6.19 (9.96) sixth 9.08 (14.61) seventh 12.40 (19.95) eighth 16.64 (26.78) reverse 2.11 (3.39) 8.45 (13.56) Clutch dual-dry operated by foot pedal Brakes drum-inward, expanding Steering mechanical Power take-off 540 rpm at 1789 engine rpm Unladen tractor mass 3521 lbs (1597 kg)

REPAIRS AND ADJUSTMENTS: No repairs or adjustments.
TRACTOR SOUND LEVEL

Maximum sound level—in 5th (H1) Gear: 101 dB(A)
Bystander in 8th (H4) gear: 87 dB(A)

CENTER OF GRAVITY

Horizontal distance forward from centerline of rear wheels: 29.7" (755 mm)
Vertical distance above roadway: 24.5" (623 mm)
Horizontal distance from center of rear wheel tread 0° (0 mm) to the right/left

TURNING ON A CONCRETE SURFACE

Turning radius—with brake applied right 117" (2.97 m) left 118" (3.00 m)
—without brake right 131" (3.32 m) left 128" (3.25 m)
Turning space radius—with brake applied right 120" (3.06 m) left 122" (3.09 m)
—without brake right 134" (3.34 m) left 131" (3.32 m)

TIRES, BALLAST AND WEIGHT

<table>
<thead>
<tr>
<th></th>
<th>With Ballast</th>
<th>Without Ballast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rear Tires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>—No., size, ply &amp; psi (kPa)</td>
<td>Two 12.4/11-28; 6; na</td>
<td>Two 12.4/11-28; 6; na</td>
</tr>
<tr>
<td>—Liquid (total)</td>
<td>697 lb (316 kg)</td>
<td>None</td>
</tr>
<tr>
<td>—Cast Iron (total)</td>
<td>2623 lb (1190 kg)</td>
<td>None</td>
</tr>
<tr>
<td>Front Tires</td>
<td></td>
<td></td>
</tr>
<tr>
<td>—No., size, ply &amp; psi (kPa)</td>
<td>Two 6.00-16; 6; na</td>
<td>Two 6.00-16; 6; na</td>
</tr>
<tr>
<td>—Liquid (total)</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>—Cast Iron (total)</td>
<td>419 lb (190 kg)</td>
<td>None</td>
</tr>
<tr>
<td>Height of Drawbar</td>
<td>13.8 in (350 mm)</td>
<td>13.0 in (330 mm)</td>
</tr>
<tr>
<td>Static Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>—Rear</td>
<td>5500 lb (2494 kg)</td>
<td>2096 lb (937 kg)</td>
</tr>
<tr>
<td>—Front</td>
<td>1960 lb (899 kg)</td>
<td>1455 lb (660 kg)</td>
</tr>
<tr>
<td>—Total</td>
<td>7260 lb (3299 kg)</td>
<td>3321 lb (1597 kg)</td>
</tr>
</tbody>
</table>

THREE POINT HITCH PERFORMANCE

(CATEGORY: I OR II)

Quick Attach: None

Maximum Force Exerted Through Whole Range: 2590 lbs (11.5 kN)

i) Opening pressure of relief valve: 2540 psi (17.5 MPa)
   Sustained pressure of the open relief valve: 2750 psi (19.8 MPa)

ii) Pump delivery rate at minimum pressure and rated engine speed:
    5.2 GPM (19.8 l/min)

iii) Pump delivery rate at maximum hydraulic pressure:
    5.2 GPM (19.8 l/min)

Delivery pressure: 2540 psi (17.5 MPa)
Power: 7.8 Hp (5.8 kW)

Hitch Dimensions as Tested — No Load

inch | mm
--- | ---
A | 27.5 | 698
B | 10.5 | 267
*C | 12.0 | 305
D | 9.2 | 233
E | 10.7 | 273
F | 4.5 | 114
G | 23.2 | 590
H | 5.3 | 136
I | 5.3 | 134
J | 18.7 | 476
K | 17.6 | 448
L | 32.7 | 829
M | 21.0 | 533
N | 34.4 | 873
O | 7.1 | 180
P | 36.7 | 932
Q | 34.5 | 878
R | 22.5 | 571

*Rockshaft is ahead of rear axle.

REMARKS: All test results were determined from observed data obtained in accordance with official OECD test procedures. ROPS certification weight limit — 5000 lb (2268 kg).

We, the undersigned, certify that this is a true summary of data from OECD Report No. 688, Nebraska Summary 001, February 9, 1987.

LOUIS I. LEVITICUS
Engineer-in-Charge

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W. E. SPLINTER
L. L. BASHFORD
Board of Tractor Test Engineers

Agricultural Research Division
Institute of Agriculture and Natural Resources
University of Nebraska—Lincoln
Irvin T. Omtvedt, Dean and Director