

# SUMMARY OF OECD TEST 1950-NEBRASKA SUMMARY 360

## MASSEY FERGUSON 4233 DIESEL

### 12 SPEED

#### POWER TAKE-OFF PERFORMANCE (540 RPM Shaft)

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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—625 rpm)</b>					
68.5 (51.0)	2201	4.27 (16.18)	0.436 (0.265)	16.02 (3.16)	
<b>Standard Power Take-off Speed (540 rpm)</b>					
64.8 (48.3)	1903	3.83 (14.50)	0.413 (0.251)	16.90 (3.33)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
68.5 (51.0)	2201	4.27 (16.18)	0.436 (0.265)	16.02 (3.16)	Air temperature
59.5 (44.4)	2251	3.78 (14.31)	0.444 (0.270)	15.74 (3.10)	73°F (23°C)
45.2 (33.7)	2275	3.07 (11.61)	0.475 (0.289)	14.73 (2.90)	Relative humidity
30.4 (22.7)	2295	2.41 (9.13)	0.555 (0.337)	12.59 (2.48)	42%
15.3 (11.4)	2310	1.77 (6.70)	0.809 (0.492)	8.63 (1.70)	Barometer
--	2325	1.19 (4.50)	--	--	29.4" Hg (99.5 kPa)

Maximum Torque - 191.7 lb.-ft. (259.9 Nm) at 1103 rpm  
 Maximum Torque Rise - 17.3%  
 Torque rise at 1800 engine rpm - 13%

#### POWER TAKE-OFF PERFORMANCE (1000 RPM Shaft)

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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1100 rpm)</b>					
69.7 (52.0)	2200	4.26 (16.14)	0.427 (0.260)	16.34 (3.22)	
<b>Standard Power Take-off Speed (1000 rpm)</b>					
68.0 (50.7)	2000	3.99 (15.11)	0.409 (0.249)	17.06 (3.36)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
69.7 (52.0)	2200	4.26 (16.14)	0.427 (0.260)	16.34 (3.22)	Air temperature
60.6 (45.2)	2254	3.76 (14.24)	0.434 (0.264)	16.09 (3.17)	73°F (23°C)
46.0 (34.3)	2277	3.06 (11.57)	0.464 (0.282)	15.06 (2.97)	Relative humidity
30.8 (23.0)	2296	2.40 (9.08)	0.543 (0.330)	12.86 (2.53)	38%
15.6 (11.6)	2311	1.76 (6.67)	0.791 (0.481)	8.83 (1.74)	Barometer
--	2326	1.22 (4.63)	--	--	29.5" Hg (99.9 kPa)

Maximum Torque - 197.5 lb.-ft. (267.8 Nm) at 1401 rpm  
 Maximum Torque Rise - 19.7%  
 Torque rise at 1800 engine rpm - 9%

**Location of tests:** Silsoe Research Institute, Wrest Park, Silsoe, Bedford, England MK45 4HS

**Dates of tests:** October to December, 2000

**Manufacturer:** AGCO Limited, P.O. Box 62, Banner Lane, Coventry, West Midlands, England CV4 9GF

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.839 **Fuel weight** 6.98 lbs/gal (0.837 kg/l) **Oil** SAE 15W-30 **API service classification** CD **Transmission and hydraulic lubricant** SAE 15W-30 **Front axle lubricant** SAE 15W-30

**ENGINE:** Make Perkins Diesel **Type** four cylinder vertical **Serial No.** U060437F **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.055" x 5.00" (103.0 mm x 127.0 mm) **Compression ratio** 17.3 to 1 **Displacement** 258 cu in (4233 ml) **Starting system** 12 volt **Lubrication pressure** **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** front wheel assist **Serial No.** ABBD24JHXAJ01334 **Tread width** rear 60.4" (1535 mm) to 83.9" (2130 mm) front 63.4" (1610 mm) to 75.4" (1915 mm) **Wheelbase** 92.5" (2350 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio **Nominal travel speeds mph (km/h)** first 1.45 (2.33) second 1.89 (3.05) third 2.49 (4.00) fourth 3.26 (5.24) fifth 4.09 (6.58) sixth 5.34 (8.60) seventh 7.02 (11.29) eighth 9.18 (14.78) ninth 11.04 (17.77) tenth 14.43 (23.22) eleventh 18.94 (30.48) twelfth 24.80 (39.91) reverse 1.64 (2.64), 2.14 (3.45), 2.81 (4.52), 3.68 (5.93), 4.62 (7.44), 6.04 (9.72), 7.93 (12.76), 10.38 (16.71), 12.48 (20.09), 16.31 (26.25), 21.41 (34.45), 28.04 (45.12) **Clutch** single dry disc operated by foot pedal **Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together **Steering** hydrostatic **Power take-off** 540 rpm at 1903 engine rpm or 1000 rpm at 2000 engine rpm **Unladen tractor mass** 6935 lb (3145 kg)

**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)	Temp. °F (°C)	Barom. inch Hg (kPa)		
<b>Maximum Power—7th (3M) Gear</b>									
60.2 (44.9)	3400 (15.1)	6.64 (10.69)	2198	4.0	0.504 (0.306)	13.87 (2.73)	183 (84)	45 (7)	29.2 (98.8)
<b>75% of Pull at Maximum Power—7th (3M) Gear</b>									
46.8 (34.9)	2550 (11.3)	6.88 (11.06)	2252	3.2	0.533 (0.324)	13.09 (2.58)	183 (84)	43 (6)	29.2 (98.8)
<b>50% of Pull at Maximum Power—7th (3M) Gear</b>									
31.5 (23.5)	1685 (7.5)	7.01 (11.28)	2278	2.3	0.620 (0.377)	11.27 (2.22)	183 (84)	43 (6)	29.2 (98.8)
<b>75% of Pull at Reduced Engine Speed—8th (4M) Gear</b>									
46.5 (34.7)	2540 (11.3)	6.87 (11.06)	1719	3.1	0.468 (0.285)	14.92 (2.94)	179 (82)	43 (6)	29.2 (98.8)
<b>50% of Pull at Reduced Engine Speed—8th (4M) Gear</b>									
31.4 (23.4)	1675 (7.5)	7.03 (11.31)	1743	2.2	0.508 (0.309)	13.76 (2.71)	181 (83)	43 (6)	29.2 (98.8)

**MAXIMUM POWER IN SELECTED GEARS**

2nd (2L) Gear									
30.4 (22.7)	6970 (31.0)	1.64 (2.64)	2275	15.0	0.649 (0.395)	10.76 (2.12)	184 (84)	45 (7)	29.2 (98.8)
3rd (3L) Gear									
39.4 (29.4)	6870 (30.6)	2.15 (3.47)	2259	14.7	0.601 (0.366)	11.62 (2.29)	183 (84)	45 (7)	29.2 (98.8)
4th (4L) Gear									
50.8 (37.9)	6720 (29.9)	2.83 (4.56)	2235	13.4	0.557 (0.339)	12.54 (2.47)	183 (84)	45 (7)	29.2 (98.8)
5th (1M) Gear									
58.1 (43.3)	5890 (26.2)	3.70 (5.96)	2206	8.6	0.526 (0.320)	13.29 (2.62)	183 (84)	43 (6)	29.2 (98.8)
6th (2M) Gear									
59.7 (44.5)	4485 (20.0)	4.99 (8.03)	2199	5.6	0.508 (0.309)	13.76 (2.71)	183 (84)	45 (7)	29.2 (98.8)
7th (3M) Gear									
60.2 (44.9)	3400 (15.1)	6.64 (10.69)	2198	4.0	0.503 (0.306)	13.87 (2.73)	183 (84)	45 (7)	29.2 (98.8)
8th (4M) Gear									
58.8 (43.8)	2510 (11.2)	8.79 (14.15)	2200	3.1	0.519 (0.316)	13.45 (2.65)	183 (84)	45 (7)	29.2 (98.8)
9th (1H) Gear									
59.3 (44.2)	2100 (9.4)	10.58 (17.03)	2192	2.8	0.508 (0.309)	13.76 (2.71)	183 (84)	43 (6)	29.2 (98.8)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. This tractor did not meet the manufacturer's 3 point lift capacity claim of 5732 lbs (2600 kg) at the lower link ends. The performance results on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **1950**, Nebraska Summary 360, November 13, 2001.

Brent T. Sampson  
 Test Engineer

L.L. Bashford  
 M.F. Kocher  
 V.I. Adamchuk  
 Board of Tractor Test Engineers

**TIRES AND WEIGHT**

**Rear Tires**—No., size, ply & psi (kPa)  
**Front Tires**—No., size, ply & psi (kPa)

**Tested Without Ballast**

Two 13.6R38; \*\*, 12(83)  
 Two 12.4R24; \*\*, 13(90)

**Height of Drawbar**

**Static Weight with operator** —Rear  
 —Front  
 —Total

18.3 in (466 mm)  
 4210 lb (1910 kg)  
 2890 lb (1310 kg)  
 7100 lb (3220 kg)

**DRAWBAR PERFORMANCE**  
**(Unballasted - Front Drive Disengaged)**  
**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)
<b>Maximum Power—7th (3M) Gear</b>									
57.5 (42.9)	3290 (14.6)	6.56 (10.55)	2199	4.3	0.526 (0.320)	13.29 (2.62)	185 (85)	57 (14)	29.7 (100.5)
<b>75% of Pull at Maximum Power—7th (3M) Gear</b>									
45.1 (33.6)	2485 (11.0)	6.80 (10.94)	2253	3.3	0.544 (0.331)	12.84 (2.53)	183 (84)	57 (14)	29.7 (100.5)
<b>50% of Pull at Maximum Power—7th (3M) Gear</b>									
30.2 (22.5)	1635 (7.3)	6.93 (11.15)	2275	2.3	0.637 (0.388)	10.96 (2.16)	183 (84)	57 (14)	29.7 (100.5)
<b>75% of Pull at Reduced Engine Speed—8th (4M) Gear</b>									
45.1 (33.6)	2485 (11.0)	6.80 (10.94)	1722	3.4	0.468 (0.285)	14.92 (2.94)	181 (83)	57 (14)	29.7 (100.5)
<b>50% of Pull at Reduced Engine Speed—8th (4M) Gear</b>									
30.1 (22.4)	1630 (7.3)	6.92 (11.13)	1736	2.4	0.521 (0.317)	13.40 (2.64)	181 (83)	57 (14)	29.7 (100.5)

**MAXIMUM POWER IN SELECTED GEARS**

1st (1L) Gear									
17.9 (13.4)	5315 (23.6)	1.26 (2.03)	2292	14.5	0.821 (0.500)	8.50 (1.68)	183 (84)	57 (14)	29.7 (100.5)
2nd (2L) Gear									
23.6 (17.6)	5240 (23.3)	1.69 (2.72)	2285	12.4	0.721 (0.439)	9.67 (1.91)	183 (84)	57 (14)	29.7 (100.5)
3rd (3L) Gear									
30.8 (23.0)	5170 (23.0)	2.23 (3.59)	2275	11.3	0.635 (0.386)	11.01 (2.17)	183 (84)	57 (14)	29.7 (100.5)
4th (4L) Gear									
39.4 (29.4)	5035 (22.4)	2.94 (4.73)	2262	10.2	0.580 (0.353)	12.03 (2.37)	183 (84)	57 (14)	29.7 (100.5)
5th (1M) Gear									
49.5 (36.9)	4970 (22.1)	3.73 (6.01)	2242	8.5	0.536 (0.326)	13.01 (2.56)	183 (84)	57 (14)	29.7 (100.5)
6th (2M) Gear									
57.3 (42.7)	4390 (19.5)	4.89 (7.87)	2201	6.5	0.525 (0.319)	13.30 (2.62)	185 (85)	57 (14)	29.7 (100.5)
7th (3M) Gear									
57.5 (42.9)	3290 (14.6)	6.56 (10.55)	2199	4.3	0.526 (0.320)	13.29 (2.62)	185 (85)	57 (14)	29.7 (100.5)
8th (4M) Gear									
55.9 (41.7)	2415 (10.8)	8.68 (13.97)	2198	3.3	0.538 (0.327)	12.99 (2.56)	185 (85)	57 (14)	29.7 (100.5)
9th (1H) Gear									
57.0 (42.5)	2045 (9.1)	10.45 (16.81)	2189	2.8	0.526 (0.320)	13.29 (2.62)	183 (84)	57 (14)	29.7 (100.5)

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
Maximum sound level in 6th(2M) gear	95.0	95.0
Bystander in 12th(4H) gear	--	--

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

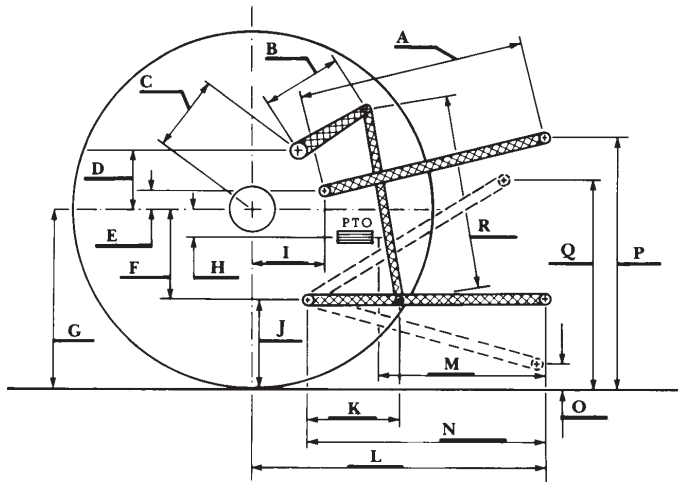
CATEGORY: II

Quick Attach: None

Maximum Force Exerted Through Whole Range: 2675 lbs (11.9 kN) (at the frame)  
 3505 lbs (15.6 kN) (at the lower link ends)

- i) Opening pressure of relief valve: NA
- Sustained pressure of the open relief valve: 3250 psi (224 bar)
- ii) Pump delivery rate at minimum pressure: 11.3 GPM (42.8 l/min)
- iii) Pump delivery rate at maximum
  - hydraulic power: 9.9 GPM (37.3 l/min)
  - Delivery pressure: 2830 psi (195 bar)
  - Power: 16.3 HP (12.1 kW)

HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	31.7	805
B	12.2	310
C	12.0	304
D	9.2	233
E	8.1	205
F	8.3	212
G	29.1	740
H	5.3	135
I	7.3	186
J	20.8	528
K	21.5	545
L	38.1	968
M	25.0	635
N	39.4	1000
O	7.7	195
P	44.8	1138
Q	36.1	918
R	27.0	685