

# SUMMARY OF OECD TEST 2390—NEBRASKA SUMMARY 598

## MASSEY FERGUSON 6499 DIESEL

### 24 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
<b>MAXIMUM POWER AND FUEL CONSUMPTION</b>					
<b>Rated Engine Speed—(PTO speed—1100 rpm)</b>					
189.9 (141.6)	2200	11.69 (44.26)	0.438 (0.267)	16.24 (3.20)	
<b>Standard Power Take-off Speed(1000 rpm)</b>					
216.2 (161.2)	2000	12.40 (46.95)	0.408 (0.248)	17.43 (3.43)	
<b>Maximum Power (1 hour)</b>					
216.2 (161.2)	2000	12.40 (46.95)	0.408 (0.248)	17.43 (3.43)	

#### VARYING POWER AND FUEL CONSUMPTION

189.9 (141.6)	2200	11.69 (44.26)	0.438 (0.267)	16.24 (3.20)	Air temperature
163.1 (121.6)	2219	10.20 (38.59)	0.445 (0.271)	15.99 (3.15)	70°F (21°C)
122.6 (91.4)	2228	8.18 (30.96)	0.475 (0.289)	14.98 (2.95)	Relative humidity
82.6 (61.6)	2239	5.98 (22.65)	0.516 (0.314)	13.81 (2.72)	20%
41.3 (30.8)	2246	3.86 (14.61)	0.665 (0.405)	10.70 (2.11)	Barometer
--	2257	2.07 (7.82)	--	--	30.3" Hg (102.6 kPa)

Maximum Torque - 651.8 lb.-ft. (883.8 Nm) at 1450 rpm  
 Maximum Torque rise - 43.8%  
 Torquerise at 1760 engine rpm - 35%

#### 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		Temp. °F (°C)		Barom. inch Hg (kPa)
					lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	cool- ing med	Air dry bulb	
<b>Maximum Power—15th(3C) Gear</b>									
167.0 (124.5)	9035 (40.2)	6.93 (11.16)	2199	4	0.501 (0.305)	14.16 (2.79)	189 (87)	64 (18)	29.8 (100.9)
<b>75% of Pull at Maximum Power—15th(3C) Gear</b>									
127.8 (95.3)	6790 (30.2)	7.06 (11.37)	2209	3	0.544 (0.331)	13.05 (2.57)	190 (88)	66 (19)	29.8 (100.9)
<b>50% of Pull at Maximum Power—15th(3C) Gear</b>									
86.4 (64.4)	4520 (20.1)	7.17 (11.53)	2221	2	0.610 (0.371)	11.62 (2.29)	179 (82)	66 (19)	29.8 (100.9)
<b>75% of Pull at Reduced Engine Speed—16th(3D) Gear</b>									
127.9 (95.4)	6785 (30.2)	7.07 (11.38)	1834	3	0.477 (0.290)	14.87 (2.93)	183 (84)	66 (19)	29.8 (100.9)
<b>50% of Pull at Reduced Engine Speed—16th(3D) Gear</b>									
86.2 (64.3)	4520 (20.1)	7.15 (11.50)	1845	2	0.531 (0.323)	13.35 (2.63)	180 (82)	66 (19)	29.8 (100.9)

**Location of tests:** Groupement d'Antony, Parc de Touvoie, BP 44 Antony, France 92163

**Dates of tests:** April - May, 2007

**Manufacturer:** AGCOS.A. BP 307, Avenue Blaise Pascal, 60026 Beauvais, France

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.855 **Fuel weight** 7.12 lbs/gal (0.853 kg/l) **Oil SAE** 15W40 **API service classification** CH4 **Transmission and hydraulic lubricant** BP Terrac Tractan 9 10W/40 **Front axle lubricant** Terrac Tractan 9 10W/40

**ENGINE:** Make Sisu Diesel **Type** six cylinder vertical with turbocharger and air to air intercooler **Serial No.** T04242 **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 4.252" x 5.276" (108.0 mm x 134.0 mm) **Compression ratio** 17.5 to 1 **Displacement** 449 cu in (7365 ml) **Starting system** 12 volt **Lubrication** pressure **Air cleaner** two paper elements **Oil filter** one full flow cartridge **Oil cooler** engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil **Fuel filter** one paper element **Muffler** underhood **Exhaust** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** S066022 **Tread width** rear 61.7" (1567 mm) to 95.2" (2417 mm) front 68.8" (1747 mm) to 75.4" (1915 mm) **Wheelbase** 118.0" (2996 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (6) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 0.99 (1.59) second 1.19 (1.91) third 1.39 (2.24) fourth 1.68 (2.70) fifth 1.97 (3.17) sixth 2.37 (3.82) seventh 2.67 (4.29) eighth 3.21 (5.16) ninth 3.77 (6.06) tenth 4.53 (7.29) eleventh 5.11 (8.22) twelfth 5.33 (8.57) thirteenth 6.14 (9.88) fourteenth 6.41 (10.31) fifteenth 7.21 (11.60) sixteenth 8.67 (13.96) seventeenth 10.20 (16.41) eighteenth 11.60 (18.66) nineteenth 12.27 (19.75) twentieth 13.94 (22.44) twenty-first 16.36 (26.33) twenty-second 19.69 (31.69) twenty-third 23.16 (37.27) twenty-fourth 27.86 (44.84) reverse 0.99 (1.59), 1.19 (1.91), 1.39 (2.24), 1.68 (2.70), 1.97 (3.17), 2.37 (3.82), 2.67 (4.29), 3.21 (5.16), 3.77 (6.06), 4.53 (7.29), 5.11 (8.22), 5.33 (8.57), 6.14 (9.88), 6.41 (10.31), 7.21 (11.60), 8.67 (13.96), 10.20 (16.41), 11.60 (18.66), 12.27 (19.75), 13.94 (22.44), 16.36 (26.33), 19.69 (31.69), 23.16 (37.27), 27.86 (44.84)

## 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)	Temp.°F(°C) cool- ing med	Barom. inch Hg (kPa)		
6th(1F) Gear									
80.7 (60.2)	14905 (66.3)	2.03 (3.27)	2220	15	0.681 (0.414)	10.41 (2.05)	181 (83)	57 (14)	29.8 (100.9)
7th(2A) Gear									
94.4 (70.4)	14365 (63.9)	2.46 (3.97)	2226	9	0.591 (0.359)	12.00 (2.36)	180 (82)	59 (15)	29.8 (100.9)
8th(2B) Gear									
111.3 (83.0)	14185 (63.1)	2.94 (4.73)	2213	9	0.582 (0.354)	12.18 (2.40)	183 (84)	59 (15)	29.8 (100.9)
9th(2C) Gear									
130.9 (97.6)	14410 (64.1)	3.41 (5.49)	2205	10	0.535 (0.326)	13.26 (2.61)	185 (85)	59 (15)	29.8 (100.9)
10th(2D) Gear									
154.4 (115.1)	13940 (62.0)	4.15 (6.68)	2199	9	0.506 (0.308)	14.01 (2.76)	181 (83)	59 (15)	29.8 (100.9)
11th(3A) Gear									
168.6 (125.7)	13610 (60.5)	4.64 (7.47)	2159	8	0.511 (0.311)	13.89 (2.74)	189 (87)	59 (15)	29.8 (100.9)
12th(2E) Gear									
173.4 (129.3)	13825 (61.5)	4.70 (7.57)	2107	8	0.490 (0.298)	14.47 (2.85)	191 (88)	59 (15)	29.8 (100.9)
13th(3B) Gear									
184.1 (137.3)	12835 (57.1)	5.38 (8.65)	2057	7	0.487 (0.296)	14.57 (2.87)	189 (87)	61 (16)	29.8 (100.9)
14th(2F) Gear									
176.3 (131.5)	12075 (53.7)	5.48 (8.82)	2000	6	0.483 (0.294)	14.67 (2.89)	190 (88)	61 (16)	29.8 (100.9)
15th(3C) Gear									
192.3 (143.4)	11625 (51.7)	6.21 (9.99)	2001	6	0.469 (0.285)	15.13 (2.98)	189 (87)	61 (16)	29.8 (100.9)
16th(3D) Gear									
190.0 (141.7)	9410 (41.9)	7.57 (12.19)	2001	5	0.477 (0.290)	14.87 (2.93)	192 (89)	63 (17)	29.8 (100.9)
*17th(3E) Gear									
185.5 (138.3)	8005 (35.6)	8.69 (13.98)	2002	6	0.488 (0.297)	14.52 (2.86)	196 (91)	63 (17)	29.8 (100.9)

\*Front Drive disengaged

**Clutch** multiple wet 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 1998 engine rpm or 1000 rpm at 2000 engine rpm  
**Unladen tractor mass** 17460 lb (7920 kg)

**NOTE 1:** The performance figures on this report are the result of replacing the electronic engine control module of the Massey Ferguson 6497 with the Massey Ferguson 6499 module.

**NOTE 2:** The engine on this tractor is electronically controlled to give 2 power levels. A "boosted" level is available when the PTO is engaged, tractor stationary, and when the tractor is operated in ranges 3 and 4.

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

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. The manufacturer's claim remote flow claim of 39 GPM (150 lpm), was not verified. The performance figures on this summary were taken from a test conducted under the OECD Code II test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. **2390**, Nebraska Summary 598, March 9, 2009.

Roger M. Hoy  
Director

M.F. Kocher  
V.I. Adamchuk  
J.A. Smith  
Board of Tractor Test Engineers

### TIRES, BALLAST AND WEIGHT

**Rear tires** - No., size, ply & psi(kPa)  
 Ballast - Duals(total)  
     - Cast iron(total)  
**Front tires** - No., size, ply & psi(kPa)  
 Ballast - Liquid(total)  
     - Cast Iron(total)  
**Height of Drawbar**  
**Static Weight with operator**- Rear  
     - Front  
     - Total

With Ballast	Without Ballast
Four 480/80R46; ***; 16(110)	Two 520/85R42; **; 15(100)
2190 lb (993 kg)	None
1875 lb (850 kg)	None
Two 16.9R30; **; 16(110)	Two 16.9R30; **; 15(100)
None	None
1795 lb (815 kg)	None
22.5 in (570 mm)	22.5 in (570 mm)
15070 lb (6835 kg)	10670 lb (4840 kg)
8850 lb (4015 kg)	6965 lb (3160 kg)
23920 lb (10850 kg)	17635 lb (8000 kg)

**DRAWBAR PERFORMANCE**  
**(Ballasted - 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)	Temp.°F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)	
110.0 (82.0)	23695 (105.4)	1.74 (2.80)	2201	14.5	5th(1E) Gear 0.618 (0.376)	11.47 (2.26)	181 (83)	55 (13)	29.7 (100.5)
131.8 (98.3)	23065 (102.6)	2.14 (3.45)	2207	12.9	6th(1F) Gear 0.580 (0.353)	12.23 (2.41)	185 (85)	55 (13)	29.7 (100.5)
147.5 (110.0)	22595 (100.5)	2.45 (3.94)	2200	11.4	7th(2A) Gear 0.535 (0.326)	13.25 (2.61)	189 (87)	55 (13)	29.7 (100.5)
166.0 (123.8)	20750 (92.3)	3.00 (4.83)	2175	8.6	8th(2B) Gear 0.516 (0.314)	13.76 (2.71)	187 (86)	55 (13)	29.7 (100.5)
172.3 (128.5)	18145 (80.7)	3.56 (5.73)	2150	6.6	9th(2C) Gear 0.497 (0.303)	14.25 (2.81)	191 (88)	57 (14)	29.7 (100.5)
184.0 (137.2)	16905 (75.2)	4.08 (6.57)	2049	6.4	10th(2D) Gear 0.469 (0.285)	15.13 (2.98)	187 (86)	57 (14)	29.7 (100.5)
194.7 (145.2)	16200 (72.1)	4.51 (7.25)	2003	6.5	11th(3A) Gear 0.469 (0.285)	15.13 (2.98)	189 (87)	57 (14)	29.7 (100.6)
185.5 (138.3)	14690 (65.3)	4.73 (7.62)	2001	5.8	12th(2E) Gear 0.468 (0.285)	15.16 (2.99)	189 (87)	57 (14)	29.7 (100.5)
194.4 (145.0)	13310 (59.2)	5.48 (8.82)	1999	5.1	13th(3B) Gear 0.469 (0.286)	15.11 (2.98)	191 (88)	57 (14)	29.7 (100.6)
184.5 (137.6)	12050 (53.6)	5.74 (9.24)	1999	4.8	14th(2F) Gear 0.472 (0.287)	15.02 (2.96)	189 (87)	57 (14)	29.7 (100.5)
196.2 (146.3)	11420 (50.8)	6.44 (10.37)	1999	4.9	15th(3C) Gear 0.464 (0.282)	15.28 (3.01)	192 (89)	57 (14)	29.7 (100.6)
196.5 (146.5)	9485 (42.2)	7.77 (12.51)	1999	5.1	16th(3D) Gear 0.464 (0.282)	15.28 (3.01)	192 (89)	57 (14)	29.7 (100.6)
193.4 (144.2)	7945 (35.3)	9.13 (14.69)	2004	5.0	*17th(3E) Gear 0.469 (0.285)	15.13 (2.98)	190 (88)	57 (14)	29.7 (100.6)

\*Front Drive disengaged

**TRACTOR SOUND LEVEL WITH CAB**

**dB(A)**

At no load in 10th (2D) gear	71.0
Bystander	--

**HITCH DIMENSIONS AS TESTED - NO LOAD**

	OECD test		SAE test	
	inch	mm	inch	mm
A	30.1	765	31.3	795
B	15.7	400	15.7	400
C	20.7	525	20.7	525
D	19.1	485	19.1	485
E	8.3	210	11.6	295
F	12.2	310	12.2	310
G	36.4	925	36.4	925
H	2.0	50	2.0	50
I	17.7	450	16.9	430
J	24.2	615	24.2	615
K	22.9	581	22.9	581
L	48.2	1225	48.2	1225
M	24.6	625	24.6	625
N	38.1	967	38.1	967
O	10.7	272	13.7	349
P	48.2	1225	43.2	1098
Q	40.6	1030	41.2	1046
R	36.1	918	34.5	877

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

CATEGORY: II

Quick Attach: None

Maximum force exerted through whole range: 14545 lbs (64.7 kN)

i) Opening pressure of relief valve: NA

Sustained pressure of the open relief valve: 2815 psi (194 bar)

ii) Pump delivery rate at minimum pressure: 30.8 GPM (116.6 l/min)

iii) Pump delivery rate at maximum

hydraulic power: 26.4 GPM (99.9 l/min)

Delivery pressure: 2265 psi (156 bar)

Power: 34.9 HP (26.0 kW)

**THREE POINT HITCH PERFORMANCE (SAE Test)**

Observed maximum pressure psi.(bar) 2815(194)

Location: lift cylinder

Hydraulic oil temperature: °F(°C) 150(66)

Location: hydraulic sump

Category: II

Quick attach: None

**SAE Static Test—System pressure 2520 psi (175 bar)**

Hitch point distance to ground level in. (mm)	13.7 (349)	18.9 (480)	23.6 (600)	30.3 (770)	36.1 (918)	41.2 (1046)
Lift force on frame lb	15700	15870	16275	16750	17110	17085
" " " " " " (kN)	(69.8)	(70.6)	(72.4)	(74.5)	(76.1)	(76.0)

