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January 2002

## Test 2100: McCormick MTX 155 Diesel

Nebraska Tractor Test Lab

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# SUMMARY OF OECD TEST 2100—NEBRASKA SUMMARY 424

## McCORMICK MTX 155 DIESEL

### 16 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—1000 rpm)</b>					
141.2 (105.3)	2201	9.03 (34.38)	0.452 (0.275)	15.55 (3.06)	
<b>Maximum Power (2 hours)</b>					
144.0 (107.4)	2072	8.87 (33.59)	0.432 (0.263)	16.24 (3.20)	
<b>VARYING POWER AND FUEL CONSUMPTION</b>					
141.2 (105.3)	2201	9.03 (34.38)	0.452 (0.275)	15.55 (3.06)	Air temperature
125.3 (93.4)	2301	8.51 (32.19)	0.477 (0.290)	14.73 (2.90)	75°F (24°C)
94.8 (70.7)	2324	7.24 (27.40)	0.536 (0.326)	13.10 (2.58)	Relative humidity
63.7 (47.5)	2340	5.83 (22.05)	0.643 (0.391)	10.93 (2.15)	33%
32.1 (23.9)	2351	4.26 (16.13)	0.932 (0.567)	7.53 (1.48)	Barometer
--	2361	2.59 (9.79)	--	--	29.0" Hg (98.3 kPa)
Maximum Torque - 458.9 lb.-ft. (622.2 Nm) at 1250 rpm					
Maximum Torque Rise - 36.1%					
Torque rise at 1800 engine rpm - 22%					

#### 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)
<b>Maximum Power—7th(II-3) Gear</b>									
125.4 (93.5)	9520 (42.3)	4.94 (7.95)	2201	2.7	0.499 (0.304)	14.06 (2.77)	194 (90)	68 (20)	29.8 (100.9)
<b>75% of Pull at Maximum Power—7th(II-3) Gear</b>									
99.5 (74.2)	7160 (31.8)	5.21 (8.39)	2308	2.0	0.560 (0.341)	12.54 (2.47)	191 (88)	68 (20)	29.8 (100.9)
<b>50% of Pull at Maximum Power—7th(II-3) Gear</b>									
67.3 (50.2)	4765 (21.2)	5.30 (8.52)	2330	1.5	0.690 (0.420)	10.16 (2.00)	189 (87)	68 (20)	29.8 (100.9)
<b>75% of Pull at Reduced Engine Speed—8th(II-4) Gear</b>									
99.5 (74.2)	7150 (31.8)	5.22 (8.40)	1865	2.1	0.472 (0.287)	14.87 (2.93)	189 (87)	70 (21)	29.8 (101.0)
<b>50% of Pull at Reduced Engine Speed—8th(II-4) Gear</b>									
67.3 (50.2)	4765 (21.2)	5.30 (8.53)	1882	1.4	0.542 (0.330)	12.94 (2.55)	187 (86)	70 (21)	29.8 (101.0)

**Location of tests:** Silsoe Research Institute, Wrest Park, Silsoe, MK45 4HS, United Kingdom

**Dates of tests:** June - August, 2002

**Manufacturer:** McCormick Tractors Intr. Ltd., Doncaster, South Yorkshire, DN2 4PG, England

**FUEL and OIL:** Fuel No. 2 Diesel **Specific gravity converted to 60°/60°F (15°/15°C)** 0.843 **Fuel weight** 7.02 lbs/gal (0.841 kg/l) **Oil SAE** 15W40 **API service classification** CG-4 **Transmission and hydraulic lubricant** McCormick HTX fluid **Front axle lubricant** API GL5 SAE 85W140

**ENGINE:** Make Perkins Diesel **Type** six cylinder vertical with turbocharger and intercooler **Serial No.** U773065H **Crankshaft** lengthwise **Rated engine speed** 2200 **Bore and stroke** 3.937" x 5.00" (100.0 mm x 127.0 mm) **Compression ratio** 17.2 to 1 **Displacement** 365 cu in (5985 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** vertical **Cooling medium temperature control** thermostat and variable speed fan

**CHASSIS:** **Type** front wheel assist **Serial No.** ZT55AC4JJE3360062 **Tread width** rear 60.2" (1530 mm) to 87.8" (2230 mm) front 60.2" (1530 mm) to 87.8" (2230 mm) **Wheelbase** 112.2" (2850 mm) **Hydraulic control system** direct engine drive **Transmission** selective gear fixed ratio with partial (4) range operator controlled powershift **Nominal travel speeds mph (km/h)** first 1.79 (2.88) second 2.16 (3.47) third 2.67 (4.29) fourth 3.31 (5.32) fifth 3.35 (5.39) sixth 4.03 (6.49) seventh 4.98 (8.02) eighth 6.17 (9.93) ninth 6.70 (10.78) tenth 8.07 (12.98) eleventh 9.97 (16.04) twelfth 12.35 (19.87) thirteenth 13.21 (21.26) fourteenth 15.91 (25.60) fifteenth 19.66 (31.64) sixteenth 24.36 (39.20) reverse 2.08 (3.35), 2.50 (4.03), 3.09 (4.98), 3.83 (6.17), 3.88 (6.25), 4.67 (7.52), 5.78 (9.30), 7.16 (11.52), 7.77 (12.50), 9.35 (15.05), 11.56 (18.61), 14.32 (23.05) **Clutch** multiple wet disc electro-hydraulically 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 1877 engine rpm or 1000 rpm at 2200 engine rpm **Unladen tractor mass** 16120 lb (7311 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)	Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
1st(I-1) Gear									
74.6 (55.6)	16660 (74.1)	1.68 (2.70)	2322	13.0	0.662 (0.403)	10.60 (2.09)	190 (88)	72 (22)	29.8 (101.0)
2nd(I-2) Gear									
90.4 (67.4)	16365 (72.8)	2.07 (3.33)	2309	10.3	0.591 (0.360)	11.89 (2.34)	190 (88)	70 (21)	29.8 (101.0)
3rd(I-3) Gear									
111.7 (83.3)	16120 (71.7)	2.60 (4.18)	2283	7.9	0.547 (0.333)	12.83 (2.53)	190 (88)	68 (20)	29.8 (101.0)
4th(I-4) Gear									
124.2 (92.6)	14950 (66.5)	3.11 (5.01)	2160	5.7	0.506 (0.308)	13.86 (2.73)	190 (88)	68 (20)	29.8 (100.8)
5th(II-1) Gear									
124.3 (92.7)	14840 (66.0)	3.14 (5.05)	2154	5.9	0.503 (0.306)	13.96 (2.75)	190 (88)	66 (19)	29.8 (100.8)
6th(II-2) Gear									
127.3 (94.9)	12885 (57.3)	3.70 (5.96)	2066	4.0	0.482 (0.293)	14.57 (2.87)	192 (89)	68 (20)	29.8 (101.0)
7th(II-3) Gear									
127.7 (95.2)	10330 (46.0)	4.64 (7.46)	2070	2.9	0.483 (0.294)	14.52 (2.86)	190 (88)	68 (20)	29.8 (100.9)
8th(II-4) Gear									
126.3 (94.2)	8195 (36.4)	5.78 (9.30)	2071	2.3	0.490 (0.298)	14.37 (2.83)	189 (87)	70 (21)	29.8 (101.0)
9th(III-1) Gear									
127.0 (94.7)	7600 (33.8)	6.27 (10.10)	2068	2.1	0.483 (0.294)	14.52 (2.86)	192 (89)	68 (20)	29.8 (101.0)
10th(III-2) Gear									
124.8 (93.1)	6170 (27.4)	7.59 (12.21)	2070	1.8	0.494 (0.301)	14.20 (2.80)	192 (89)	66 (19)	29.8 (100.8)
11th(III-3) Gear									
120.0 (89.5)	4785 (21.3)	9.40 (15.13)	2067	1.4	0.509 (0.310)	13.79 (2.72)	192 (89)	66 (19)	29.8 (100.8)

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive	
	Disengaged dB(A)	Engaged dB(A)
At no load in 6th (II-2) gear	71.0	71.0
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear tires - No.,size, ply & psi(kPa)	Two 650/65R42; **,13 (86)
Front tires - No.,size, ply & psi(kPa)	Two 540/65R30; **,13 (86)
Height of Drawbar	13.6 in (345 mm)
Static Weight with operator-	10200 lb (4627 kg)
- Rear	6085 lb (2759 kg)
- Front	
- Total	16285 lb (7386 kg)

**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 claims of 28 GPM (106 lpm) remote hydraulic flow nor 3 point lift of 15287 lbs (6934 kg) at 24" behind link ends and 16885 lbs (7659 kg) at the lower link ends. 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. **2100** Nebraska Summary 424, October 26, 2005.

Leonard L. Bashford  
Director

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

## THREE POINT HITCH PERFORMANCE (OECD Static Test)

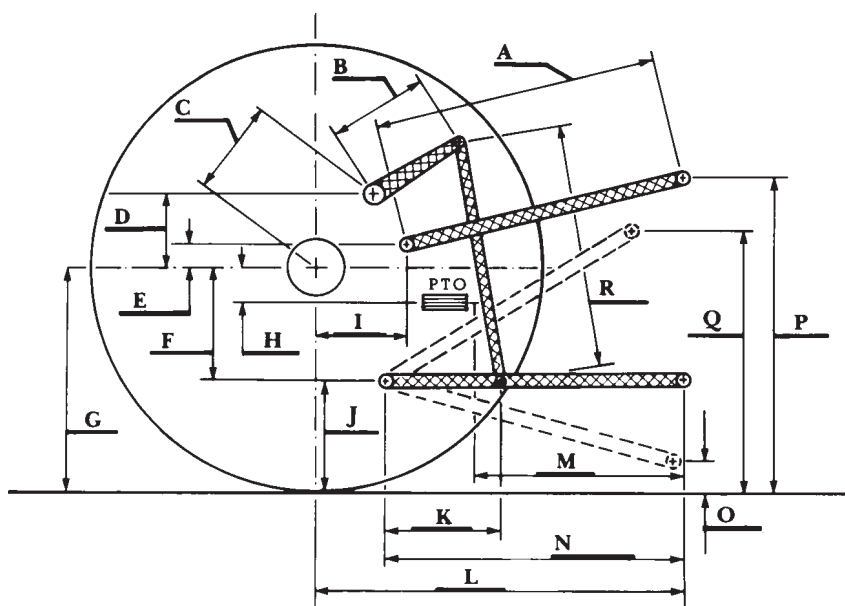
CATEGORY: II

Quick Attach: None

Maximum Force Exerted

Through Whole Range: 12385 lbs (55.1 kN) (at the frame)  
14365 lbs (63.9 kN) (at the hitch points)

- i) Opening pressure of relief valve: NA  
Sustained pressure of the open relief valve: 2845 psi (196 bar)
- ii) Pump delivery rate at minimum pressure: 25.4 GPM (96.0 l/min)
- iii) Pump delivery rate at maximum hydraulic power: 23.8 GPM (90.0 l/min)  
Delivery pressure: 2390 psi (165 bar)  
Power: 33.2 HP (24.8 kW)



HITCH DIMENSIONS AS TESTED—NO LOAD

	inch	mm
A	32.0	814
B	16.1	410
C	18.1	461
D	17.7	450
E	7.9	200
F	13.8	350
G	35.6	905
H	8.1	205
I	17.7	450
J	21.8	555
K	26.6	675
L	49.3	1253
M	25.7	653
N	39.5	1003
O	9.1	230
P	45.9	1165
Q	38.2	970
R	41.9	1063