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SUMMARY OF OECD TEST 2097–NEBRASKA SUMMARY 421
McCORMICK MTX 110 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
MAXIMUM POWER AND FUEL CONSUMPTION					
Rated Engine Speed—(PTO speed—1000 rpm)					
101.8 *(75.9)*	2201	6.77 *(25.61)*	0.467 *(0.284)*	15.02 *(2.96)*	
Maximum Power (2 hours)					
102.6 *(76.5)*	2100	6.57 *(24.87)*	0.450 *(0.274)*	15.58 *(3.07)*	
VARYING POWER AND FUEL CONSUMPTION					
101.8 *(75.9)*	2201	6.77 *(25.61)*	0.467 *(0.284)*	15.02 *(2.96)*	Air temperature
89.0 *(66.4)*	2265	6.35 *(24.05)*	0.501 *(0.305)*	14.01 *(2.76)*	77°F *(25°C)*
67.6 *(50.4)*	2291	5.53 *(20.93)*	0.574 *(0.349)*	12.23 *(2.41)*	Relative humidity
45.7 *(34.1)*	2317	4.41 *(16.70)*	0.678 *(0.412)*	10.36 *(2.04)*	41%
22.7 *(16.9)*	2335	3.24 *(12.25)*	1.002 *(0.609)*	7.00 *(1.38)*	Barometer
-- --	2353	2.11 *(8.00)*	-- --	-- --	29.0" Hg *(98.3 kPa)*

Maximum Torque - 313.1 lb.-ft. *(424.5 Nm)* at 1397 rpm
Maximum Torque Rise - 28.9%
Torque rise at 1800 engine rpm - 19%

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—9th(III-1) Gear									
88.0 *(65.6)*	4935 *(21.9)*	6.69 *(10.76)*	2198	2.3	0.538 *(0.327)*	13.05 *(2.57)*	190 *(88)*	64 *(18)*	29.6 *(100.4)*
75% of Pull at Maximum Power—9th(III-1) Gear									
68.9 *(51.4)*	3720 *(16.5)*	6.95 *(11.19)*	2274	1.7	0.613 *(0.373)*	11.46 *(2.26)*	190 *(88)*	64 *(18)*	29.6 *(100.4)*
50% of Pull at Maximum Power—9th(III-1) Gear									
46.7 *(34.8)*	2475 *(11.0)*	7.08 *(11.40)*	2304	1.3	0.763 *(0.464)*	9.20 *(1.81)*	189 *(87)*	64 *(18)*	29.6 *(100.4)*
75% of Pull at Reduced Engine Speed—10th(III-2) Gear									
68.7 *(51.2)*	3715 *(16.5)*	6.93 *(11.16)*	1883	1.8	0.516 *(0.314)*	13.60 *(2.68)*	187 *(86)*	64 *(18)*	29.6 *(100.4)*
50% of Pull at Reduced Engine Speed—10th(III-2) Gear									
46.7 *(34.8)*	2470 *(11.0)*	7.09 *(11.41)*	1914	1.3	0.618 *(0.376)*	11.36 *(2.24)*	187 *(86)*	64 *(18)*	29.6 *(100.4)*

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

Dates of tests: May, 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 **Serial No.** U763982C **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.** ZT10AC4JJE3330001 **Tread width** rear 60.2" *(1530 mm)* to 87.8" *(2230 mm)* front 60.2" *(1530 mm)* to 87.8" *(2230 mm)* **Wheelbase** 106.3" *(2700 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 1.78 *(2.87)* second 2.15 *(3.46)* third 2.66 *(4.28)* fourth 3.29 *(5.30)* fifth 3.34 *(5.38)* sixth 4.03 *(6.48)* seventh 4.98 *(8.01)* eighth 6.16 *(9.91)* ninth 6.69 *(10.77)* tenth 8.06 *(12.97)* eleventh 9.96 *(16.03)* twelfth 12.33 *(19.85)* thirteenth 13.01 *(20.93)* fourteenth 15.67 *(25.22)* fifteenth 19.37 *(31.17)* sixteenth 23.99 *(38.61)* reverse 2.06 *(3.32)*, 2.49 *(4.00)*, 3.08 *(4.95)*, 3.81 *(6.13)*, 3.87 *(6.23)*, 4.66 *(7.50)*, 5.76 *(9.27)*, 7.13 *(11.48)*, 7.74 *(12.45)*, 9.32 *(15.00)*, 11.52 *(18.54)*, 14.27 *(22.97)* **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** 13255 lb *(6013 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)*
					1st(I-1) Gear				
61.8 *(46.1)*	14455 *(64.3)*	1.60 *(2.58)*	2276	15.0	0.682 *(0.415)*	10.29 *(2.03)*	189 *(87)*	64 *(18)*	29.6 *(100.4)*
					2nd(I-2) Gear				
73.9 *(55.1)*	13985 *(62.2)*	1.98 *(3.19)*	2255	12.2	0.613 *(0.373)*	11.46 *(2.26)*	189 *(87)*	64 *(18)*	29.6 *(100.4)*
					3rd(I-3) Gear				
84.9 *(63.3)*	13060 *(58.1)*	2.44 *(3.92)*	2154	8.7	0.552 *(0.336)*	12.72 *(2.51)*	190 *(88)*	64 *(18)*	29.6 *(100.4)*
					4th(I-4) Gear				
86.9 *(64.8)*	10745 *(47.8)*	3.03 *(4.88)*	2101	5.8	0.528 *(0.321)*	13.30 *(2.62)*	189 *(87)*	64 *(18)*	29.6 *(100.4)*
					5th(II-1) Gear				
88.1 *(65.7)*	10680 *(47.5)*	3.09 *(4.98)*	2100	5.3	0.523 *(0.318)*	13.40 *(2.64)*	189 *(87)*	63 *(17)*	29.7 *(100.5)*
					6th(II-2) Gear				
88.5 *(66.0)*	8790 *(39.1)*	3.77 *(6.07)*	2101	4.2	0.519 *(0.316)*	13.50 *(2.66)*	189 *(87)*	63 *(17)*	29.7 *(100.5)*
					7th(II-3) Gear				
87.8 *(65.5)*	7015 *(31.2)*	4.70 *(7.56)*	2095	3.2	0.523 *(0.318)*	13.40 *(2.64)*	190 *(88)*	61 *(16)*	29.7 *(100.5)*
					8th(II-4) Gear				
87.8 *(65.5)*	5620 *(25.0)*	5.86 *(9.43)*	2097	2.6	0.522 *(0.318)*	13.48 *(2.65)*	189 *(87)*	63 *(17)*	29.7 *(100.5)*
					9th(III-1) Gear				
88.9 *(66.3)*	5230 *(23.3)*	6.38 *(10.27)*	2100	2.5	0.519 *(0.316)*	13.50 *(2.66)*	189 *(87)*	63 *(17)*	29.7 *(100.5)*
					10th(III-2) Gear				
88.1 *(65.7)*	4295 *(19.1)*	7.69 *(12.37)*	2093	2.1	0.522 *(0.317)*	13.45 *(2.65)*	190 *(88)*	63 *(17)*	29.7 *(100.5)*
					11th(III-3) Gear				
84.8 *(63.2)*	3335 *(14.8)*	9.53 *(15.33)*	2091	1.8	0.540 *(0.328)*	13.00 *(2.56)*	189 *(87)*	63 *(17)*	29.7 *(100.5)*

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 claims of 11234 lbs *(5096 kg)* (optionally 13137 lbs *(5959 kg))* at the hitch points with either the category II or category IIIN hitch. This tractor also did not meet the manufacturer's 3 point lift claims of 8201 lbs *(3720 kg)*(optionally 10183 lbs *(4619 kg)*) at the frame with the category IIIN hitch. 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. **2097** Nebraska Summary 421,October 26, 2005.

Leonard L. Bashford
Director

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

TRACTOR SOUND LEVEL WITH CAB	Front Wheel Drive Disengaged dB(A)	Engaged dB(A)
At no load in 6th (II-2) gear	70.0	70.0
Bystander	--	--

TIRES AND WEIGHT	Tested Without Ballast
Rear tires - No.,size, ply & psi(*kPa)*	Two 650/65R38; **;13 (*90)*
Front tires - No.,size, ply & psi(*kPa)*	Two 540/65R28; **;13 (*90)*
Height of Drawbar	14.8 in *(375 mm)*
Static Weight with operator- Rear	7820 lb *(3548 kg)*
- Front	5600 lb *(2540 kg)*
- Total	13420 lb *(6088 kg)*

THREE POINT HITCH PERFORMANCE (OECD Static Test)

CATEGORY: II, IIIN
Quick Attach: None

	Cat II	w/lift assist cylinder
Maximum force exerted through whole range:	7398 lbs *(32.9 kN)*	9000 lbs *(40.0 kN)* (at the frame)
	8919 lbs *(39.7 kN)*	10881 lbs *(48.4 kN)* (at the hitch points)

	Cat IIIN	w/lift assist cylinder
	7038 lbs *(31.3 kN)*	8586 lbs *(38.2 kN)* (at the frame)
	9000 lbs *(40.0 kN)*	11079 lbs *(49.3 kN)* (at the hitch points)

i) Opening pressure of relief valve:	NA
Sustained pressure of the open relief valve:	2875 psi *(198 bar)*
ii) Pump delivery rate at minimum pressure:	25.1 GPM *(95.0 l/min)*
iii) Pump delivery rate at maximum hydraulic power:	23.7 GPM *(89.8 l/min)*
Delivery pressure:	2320 psi *(160 bar)*
Power:	32.1 HP *(23.9 kW)*

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. *(bar)*	2980 *(205)*
Location:	lift cylinder
Hydraulic oil temperature: °F *(°C)*	158 *(70)*
Location:	hydraulic sump
Category:	II,IIIN
Quick attach:	none

Cat II
SAE Static Test—System pressure 2565 psi *(177 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.0 *(381)*	22.0 *(559)*	29.0 *(737)*	36.0 *(914)*
Lift force on frame lb	11250	11165	10530	9432	8901
" " " " " " *(kN)*	*(50.0)*	*(49.7)*	*(46.8)*	*(42.0)*	*(39.6)*

Cat II w/assist cylinder
SAE Static Test—System pressure 2565 psi *(177 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	15.0 *(381)*	22.0 *(559)*	29.0 *(737)*	36.0 *(914)*
Lift force on frame lb	13878	13464	12789	11529	10949
" " " " " " *(kN)*	*(61.7)*	*(59.9)*	*(56.9)*	*(51.3)*	*(48.7)*

Cat IIIN
SAE Static Test—System pressure 2565 psi *(177 Bar)*

Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	16.0 *(406)*	24.0 *(610)*	32.0 *(813)*	40.0 *(1016)*
Lift force on frame lb	9149	10076	9437	8159	8078
" " " " " " *(kN)*	*(40.7)*	*(44.8)*	*(42.0)*	*(36.3)*	*(35.9)*

Cat IIIN w/assist cylinder
SAE Static Test—System pressure 2565 psi *(177 Bar)*

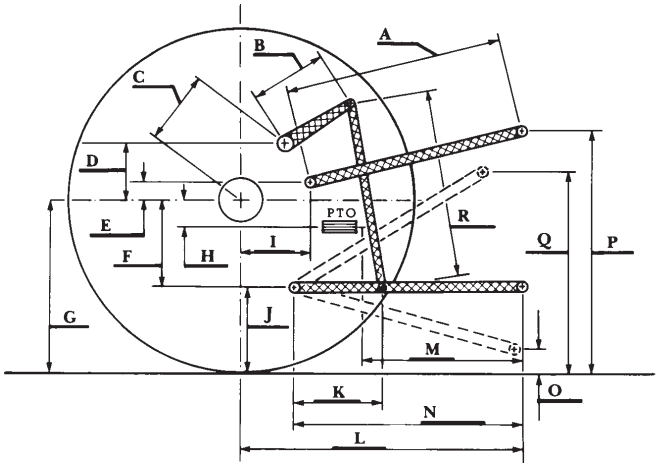
Hitch point distance to ground level in. *(mm)*	8.0 *(203)*	16.0 *(406)*	24.0 *(610)*	32.0 *(813)*	40.0 *(1016)*
Lift force on frame lb	10197	11556	10967	9630	9072
" " " " " " *(kN)*	*(45.4)*	*(51.4)*	*(48.8)*	*(42.8)*	*(40.4)*

HITCH DIMENSIONS AS TESTED—NO LOAD
Category II

	SAE Test		OECD Test	
	inch	*mm*	inch	*mm*
A	29.4	*746*	30.0	*762*
B	9.1	*230*	9.1	*230*
C	11.9	*303*	11.9	*303*
D	6.8	*173*	6.8	*173*
E	11.2	*284*	11.2	*284*
F	10.0	*253*	10.0	*253*
G	33.7	*855*	33.7	*855*
H	4.1	*105*	4.1	*105*
I	13.5	*342*	13.5	*342*
J	23.7	*602*	23.7	*602*
K	21.8	*554*	21.8	*554*
L	43.9	*1114*	43.9	*1114*
M	24.2	*614*	24.2	*614*
N	35.1	*891*	35.1	*891*
O	8.0	*203*	8.0	*203*
P	42.7	*1085*	47.7	*1212*
Q	36.7	*932*	36.7	*932*
R	25.7	*654*	25.7	*654*

HITCH DIMENSIONS AS TESTED—NO LOAD
Category IIIN

	SAE Test		OECD Test	
	inch	*mm*	inch	*mm*
A	28.8	*730*	29.8	*756*
B	9.1	*230*	9.1	*230*
C	11.9	*303*	11.9	*303*
D	6.8	*173*	6.8	*173*
E	11.2	*284*	11.2	*284*
F	10.0	*253*	10.0	*253*
G	33.7	*855*	33.7	*855*
H	4.1	*105*	4.1	*105*
I	13.5	*342*	13.5	*342*
J	23.7	*602*	23.7	*602*
K	21.8	*554*	21.8	*554*
L	43.9	*1114*	43.9	*1114*
M	24.2	*614*	24.2	*614*
N	35.1	*891*	35.1	*891*
O	8.0	*203*	9.0	*229*
P	45.7	*1160*	50.7	*1287*
Q	36.7	*932*	37.5	*951*
R	25.7	*654*	25.3	*641*



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