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UNL Larsen Tractor Museum Archives

University of Nebraska - Lincoln

Year 2006

Test 1882: McCormick XTX 215 Diesel

NEBRASKA OECD TRACTOR TEST 1882 - SUMMARY 539

McCORMICK XTX 215 DIESEL

32 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—1087 rpm)					
189.53 (141.33)	2201	11.03 (41.76)	0.407 (0.247)	17.18 (3.38)	
Standard Power Take-off Speed—(1000 rpm)					
203.85 (152.01)	2025	11.29 (42.76)	0.387 (0.236)	18.05 (3.56)	
Maximum Power (1 hour)					
205.58 (153.30)	2000	11.33 (42.89)	0.385 (0.234)	18.14 (3.57)	

VARYING POWER AND FUEL CONSUMPTION

189.53 (141.33)	2201	11.03 (41.76)	0.407 (0.247)	17.18 (3.38)	Air temperature
168.22 (125.44)	2299	10.46 (39.59)	0.435 (0.264)	16.09 (3.17)	77°F (25°C)
125.99 (93.95)	2299	8.30 (31.41)	0.460 (0.280)	15.18 (2.99)	Relative humidity
84.19 (62.78)	2299	6.09 (23.07)	0.506 (0.308)	13.81 (2.72)	52%
42.61 (31.77)	2299	3.98 (15.05)	0.652 (0.397)	10.71 (2.11)	Barometer
1.62 (1.21)	2299	2.07 (7.85)	8.938 (5.437)	0.78 (0.15)	28.98" Hg (98.14 kPa)

Maximum Torque - 651 lb.-ft. (883 Nm) at 1400 rpm
 Maximum Torque Rise - 43.9%
 Torque rise at 1751 engine rpm - 34%

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—16th(3-2) Gear									
155.27 (115.78)	10673 (47.48)	5.46 (8.78)	2199	4.00	0.460 (0.280)	15.18 (2.99)	180 (82)	63 (17)	28.97 (98.10)
75% of Pull at Maximum Power—16th(3-2) Gear									
123.06 (91.77)	7991 (35.55)	5.77 (9.29)	2299	2.75	0.518 (0.315)	13.49 (2.66)	178 (81)	64 (18)	28.97 (98.10)
50% of Pull at Maximum Power—16th(3-2) Gear									
82.92 (61.84)	5328 (23.70)	5.84 (9.39)	2298	1.74	0.569 (0.346)	12.29 (2.42)	171 (77)	65 (18)	28.98 (98.14)
75% of Pull at Reduced Engine Speed—20th(3-4) Gear									
123.11 (91.80)	7954 (35.38)	5.80 (9.34)	1679	2.66	0.433 (0.264)	16.13 (3.18)	167 (75)	66 (19)	29.00 (98.21)
50% of Pull at Reduced Engine Speed—20th(3-4) Gear									
83.01 (61.90)	5311 (23.62)	5.86 (9.43)	1679	1.72	0.478 (0.291)	14.62 (2.88)	161 (72)	65 (18)	28.99 (98.17)

Location of tests: Nebraska Tractor Test Laboratory, University of Nebraska, Lincoln Nebraska, USA 68583-0832

Dates of tests: June 8 - 15, 2006

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) 0.8395 Fuel weight 6.990 lbs/gal (0.838 kg/l) Oil SAE 15W40 API service classification CG-4 Transmission and hydraulic lubricant McCormick HTX fluid Front axle lubricant API GL5 SAE 85W140 Total time engine was operated 23.0 hours

ENGINE: Make Iveco Diesel Type six cylinder vertical with turbocharger and air to air intercooler Serial No. *J100*001913* Crankshaft lengthwise Rated engine speed 2200 Bore and stroke 4.094" x 5.197" (104.0 mm x 132.0 mm) Compression ratio 17.5 to 1 Displacement 410 cu in (6728 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements and aspirator Oil filter two full flow cartridges 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

ENGINE OPERATING PARAMETERS: Fuel rate: 74.9 - 79.4 lb/h (34.0 - 36.0 kg/h) High idle: 2275 - 2325 rpm Turbo boost: nominal 21.6 - 23.6 psi (149 - 163 kPa) as measured 22.7 psi (157 kPa)

CHASSIS: Type front wheel assist Serial No. *XT85AC4JJE3500599* Tread width rear 64.2" (1630 mm) to 125.0" (3175 mm) front 60.2" (1530 mm) to 87.8" (2230 mm) Wheelbase 113.1" (2873 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (8) range operator controlled powershift Nominal travel speeds mph (km/h) first 1.12 (1.80) second 1.32 (2.12) third 1.54 (2.48) fourth 1.81 (2.91) fifth 2.14 (3.44) sixth 2.40 (3.87) seventh 2.51 (4.04) eighth 2.82 (4.54) ninth 2.95 (4.74) tenth 3.31 (5.32) eleventh 3.45 (5.55) twelfth 3.87 (6.23) thirteenth 4.59 (7.38) fourteenth 4.81 (7.74) fifteenth 5.38 (8.66) sixteenth 5.64 (9.08) seventeenth 6.31 (10.16) eighteenth 6.61 (10.64) nineteenth 7.39 (11.90) twentieth 7.75 (12.47) twenty-first 9.18 (14.77) twenty-second 10.07 (16.20) twenty-third 10.77 (17.33) twenty-fourth 11.81 (19.01) twenty-fifth 12.63 (20.32) twenty-sixth 13.85 (22.29) twenty-seventh 14.80 (23.81)

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)
11th(1-8) Gear									
132.83 (99.05)	15648 (69.60)	3.18 (5.12)	2296	12.52	0.533 (0.324)	13.12 (2.58)	171 (77)	61 (16)	28.97 (98.10)
12th(2-4) Gear									
145.18 (108.26)	14688 (65.34)	3.71 (5.96)	2266	8.07	0.491 (0.299)	14.24 (2.81)	174 (79)	61 (16)	28.97 (98.10)
13th(2-5) Gear									
150.52 (112.25)	13894 (61.80)	4.06 (6.54)	2090	7.67	0.479 (0.291)	14.60 (2.88)	180 (82)	77 (25)	28.78 (97.46)
14th(3-1) Gear									
153.14 (114.20)	13642 (60.68)	4.21 (6.77)	2065	7.43	0.475 (0.289)	14.72 (2.90)	179 (82)	79 (26)	28.77 (97.43)
15th(2-6) Gear									
160.22 (119.48)	13523 (60.16)	4.44 (7.15)	1940	7.08	0.463 (0.282)	15.10 (2.98)	182 (83)	78 (26)	28.77 (97.43)
16th(3-2) Gear									
163.91 (122.23)	13391 (59.56)	4.59 (7.39)	1912	7.04	0.456 (0.277)	15.33 (3.02)	183 (84)	80 (27)	28.76 (97.39)
17th(2-7) Gear									
165.62 (123.50)	11928 (53.06)	5.21 (8.38)	1900	5.24	0.452 (0.275)	15.46 (3.05)	184 (85)	79 (26)	28.77 (97.43)
18th(3-3) Gear									
166.72 (124.32)	11420 (50.80)	5.47 (8.81)	1902	5.01	0.449 (0.273)	15.56 (3.07)	185 (85)	80 (27)	28.76 (97.39)
19th(2-8) Gear									
167.89 (125.19)	10217 (45.45)	6.16 (9.92)	1897	4.13	0.446 (0.271)	15.66 (3.09)	186 (85)	82 (28)	28.75 (97.36)
20th(3-4) Gear									
168.18 (125.41)	9720 (43.24)	6.49 (10.44)	1901	3.85	0.448 (0.273)	15.59 (3.07)	187 (86)	81 (27)	28.75 (97.36)
21st(3-5) Gear									
169.13 (126.12)	8190 (36.43)	7.74 (12.46)	1898	2.94	0.445 (0.271)	15.71 (3.09)	187 (86)	81 (27)	28.75 (97.36)
22nd(4-1) Gear									
165.94 (123.74)	7305 (32.49)	8.52 (13.71)	1901	2.57	0.450 (0.274)	15.53 (3.06)	188 (87)	83 (28)	28.74 (97.33)

twenty-eighth 16.23 (26.12) twenty-ninth 19.22 (30.93) thirtieth 22.55 (36.29) thirty-first 25.84 (41.58) thirty-second 25.91 (41.70)(1900 RPM) reverse 1.35 (2.17), 1.58 (2.55), 1.86 (2.99), 2.17 (3.50), 2.58 (4.15), 2.90 (4.66), 3.03 (4.87), 3.39 (5.46), 3.55 (5.71), 3.98 (6.41), 4.16 (6.69), 4.67 (7.51) 5.52 (8.89), 5.79 (9.32), 6.48 (10.43), 6.79 (10.93), 7.60 (12.23), 7.97 (12.82), 8.90 (14.33), 9.33 (15.02), 11.05 (17.78), 12.96 (20.86), 15.21 (24.47), 17.82 (28.67) **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** 540rpm at 1860 engine rpm or 1000 rpm at 2025 engine rpm **Unladen tractor mass** 16010 lb (7262 kg)

NOTE 1: The engine of the McCormick XTX 215 is electronically controlled to provide two power levels. A "boosted" power level is available when the PTO is engaged, under load.

NOTE 2: The performance figures on this report are the result of replacing the electronic engine control module of the McCormick XTX185 with the XTX215 module.

REPAIRS AND ADJUSTMENTS: No repairs or adjustments

REMARKS: All test results were determined from observed data obtained in accordance with official OECD, SAE and Nebraska test procedures. The manufacturer's claim of 43 GPM (163 lpm) remote flow with optional pump was not verified. For the maximum power tests, the fuel temperature at the injection pump was maintained at 170°F (77°C). 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 and correct report of official tractor Test No. **1882**, Nebraska Summary 539, September 30, 2006.

David L. Morgan
Assistant 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 13th (2-5) gear	71.8	71.9
Bystander	---	---

TIRES, BALLAST AND WEIGHT

	With Ballast	Without Ballast
Rear tires - No., size, ply & psi (kPa)	Four 18.4R46; ***, 10 (70)	Two 18.4R46; ***, 17 (115)
Ballast - Duals (total)	1985 lb (900 kg)	None
- Test equip (total)	175 lb (79 kg)	None
Front tires - No., size, ply & psi (kPa)	Two 16.9R30; ***, 18 (125)	Two 16.9R30; ***, 17 (115)
Ballast - Liquid (total)	None	None
- Cast Iron (total)	1900 lb (862 kg)	None
Height of Drawbar	19.5 in (495 mm)	19.0 in (485 mm)
Static Weight with operator - Rear	12040 lb (5460 kg)	10460 lb (4745 kg)
- Front	8205 lb (3722 kg)	5725 lb (2597 kg)
- Total	20245 lb (9182 kg)	16185 lb (7342 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)	Fuel Consumption Hp.hr/gal (kW.h/l)	Temp. °F(°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
8th(2-2) Gear									
145.15 (108.24)	20124 (89.52)	2.70 (4.35)	2277	7.88	0.494 (0.301)	14.15 (2.79)	171 (77)	61 (16)	29.00 (98.21)
9th(1-7) Gear									
144.24 (107.56)	19095 (84.94)	2.83 (4.56)	2271	7.37	0.501 (0.305)	13.95 (2.75)	178 (81)	66 (19)	29.00 (98.21)
10th(2-3) Gear									
153.71 (114.62)	19025 (84.63)	3.03 (4.88)	2154	6.95	0.470 (0.286)	14.88 (2.93)	178 (81)	63 (17)	29.00 (98.21)
11th(1-8) Gear									
153.46 (114.43)	18334 (81.56)	3.14 (5.05)	2134	6.80	0.470 (0.286)	14.88 (2.93)	179 (82)	67 (19)	29.00 (98.21)
12th(2-4) Gear									
163.29 (121.77)	18107 (80.54)	3.38 (5.44)	2027	5.81	0.451 (0.274)	15.51 (3.05)	177 (81)	65 (18)	29.00 (98.21)
13th(2-5) Gear									
172.62 (128.72)	17075 (75.95)	3.79 (6.10)	1901	4.93	0.434 (0.264)	16.10 (3.17)	181 (83)	66 (19)	29.00 (98.21)
14th(3-1) Gear									
171.58 (127.95)	16185 (72.00)	3.98 (6.40)	1900	4.75	0.438 (0.267)	15.95 (3.14)	179 (82)	68 (20)	29.00 (98.21)
15th(2-6) Gear									
171.57 (127.94)	14311 (63.66)	4.50 (7.24)	1901	3.96	0.437 (0.266)	15.98 (3.15)	180 (82)	69 (21)	29.00 (98.21)
16th(3-2) Gear									
173.03 (129.03)	13749 (61.16)	4.72 (7.59)	1898	3.58	0.434 (0.264)	16.11 (3.17)	181 (83)	68 (20)	29.00 (98.21)
17th(2-7) Gear									
170.72 (127.31)	12056 (53.63)	5.31 (8.55)	1898	3.15	0.442 (0.269)	15.81 (3.11)	183 (84)	69 (21)	29.00 (98.21)
18th(3-3) Gear									
172.74 (128.81)	11602 (51.61)	5.58 (8.99)	1900	2.83	0.437 (0.266)	15.98 (3.15)	181 (83)	68 (20)	29.00 (98.21)
19th(2-8) Gear									
171.47 (127.86)	10224 (45.48)	6.29 (10.12)	1905	2.54	0.440 (0.267)	15.90 (3.13)	181 (83)	70 (21)	29.00 (98.21)
20th(3-4) Gear									
172.05 (128.30)	9790 (43.55)	6.59 (10.61)	1902	2.30	0.435 (0.265)	16.07 (3.16)	183 (84)	70 (21)	29.00 (98.21)
21st(3-5) Gear									
170.42 (127.08)	8155 (36.28)	7.84 (12.61)	1901	1.83	0.442 (0.269)	15.82 (3.12)	183 (84)	71 (22)	29.01 (98.24)
22nd(4-1) Gear									
168.21 (125.43)	7336 (32.63)	8.60 (13.84)	1902	1.59	0.449 (0.273)	15.58 (3.07)	184 (85)	76 (24)	29.01 (98.24)

CATEGORY: III			
Quick Attach: None	<u>100 mm lift cylinders</u>		
Maximum force exerted through whole range:	16317 lbs (72.6 kN)		
i) Opening pressure of relief valve:	NA		
	<u>one outlet set</u>	<u>two outlet sets combined</u>	
Sustained pressure of the open relief valve:	2874 psi (198 bar)	2878 psi (198 bar)	
ii) Pump delivery rate at minimum pressure and rated engine speed:	28.9 GPM (109.4 l/min) 32.4 GPM (122.6 l/min)		
iii) Pump delivery rate at maximum hydraulic power:	27.3 GPM (103.3 l/min) 30.5 GPM (115.5 l/min)		
Delivery pressure:	2243 psi (155 bar) 2487 psi (171 bar)		
Power:	35.7 hp (26.6 kW) 44.3 hp (33.0 kW)		

**HITCH DIMENSIONS AS TESTED—NO LOAD
100 mm lift cylinders**

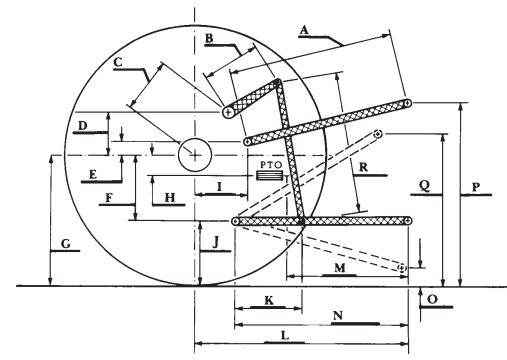
	OECD	test	SAE test	
	inch	mm	inch	mm
A	30.8	781	30.8	781
B	16.1	410	16.1	410
C	18.1	461	18.1	461
D	17.7	450	17.7	450
E	12.2	310	12.2	310
F	13.8	350	13.8	350
G	36.2	920	36.2	920
H	8.1	205	8.1	205
I	17.7	450	17.7	450
J	22.4	570	22.4	570
K	26.6	675	26.6	675
L	49.3	1253	49.3	1253
M	25.7	653	25.7	653
N	39.5	1003	39.5	1003
O	9.0	228	8.0	203
P	49.4	1255	44.4	1128
Q	39.1	994	38.1	968
R	41.4	1053	42.2	1071

THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi. (bar)	2880 (198)		
Location:	lift cylinder		
Hydraulic oil temperature: °F (°C)	145 (63)		
Location:	hydraulic sump		
Category:	III		
Quick attach:	none		

SAE Static Test (100 mm cylinders) - System pressure 2586 psi (178 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	21494	20242	20202	19804	19906
" " " " " " (kN)	(95.6)	(90.0)	(89.9)	(88.1)	(88.5)



McCormick XTX 215 Diesel

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