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## Test 1553: Massey- Ferguson 1030 Diesel 12-Speed

Nebraska Tractor Test Lab

University of Nebraska-Lincoln, [tractortestlab@unl.edu](mailto:tractortestlab@unl.edu)

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# NEBRASKA TRACTOR TEST 1553—MASSEY FERGUSON 1030 DIESEL 12 SPEED

## POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)	
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb		
MAXIMUM POWER AND FUEL CONSUMPTION									
Rated Engine Speed — Two hours (PTO Speed —580 rpm)									
23.35 (17.41)	2500	1.824 (6.904)	0.545 (0.331)	12.80 (2.522)	195 (90.3)	58 (14.5)	75 (23.8)	29.02 (97.98)	
Standard Power Take-off Speed (540 rpm) — One Hour									
22.80 (17.00)	2327	1.758 (6.655)	0.538 (0.327)	12.97 (2.555)	195 (90.7)	58 (14.4)	75 (23.9)	29.00 (97.91)	
VARYING POWER AND FUEL CONSUMPTION — Two Hours									
20.54 (15.32)	2587	1.626 (6.155)	0.552 (0.336)	12.63 (2.488)	184 (84.2)	58 (14.4)	75 (23.9)	..... .....	
0.00 (0.00)	2676	0.619 (2.345)	..... .....	..... .....	166 (74.2)	58 (14.4)	75 (23.6)	..... .....	
10.40 (7.75)	2622	1.063 (4.022)	0.713 (0.434)	9.79 (1.928)	167 (75.0)	58 (14.4)	75 (23.9)	..... .....	
23.49 (17.51)	2501	1.837 (6.953)	0.545 (0.332)	12.79 (2.519)	194 (89.7)	58 (14.4)	75 (23.9)	..... .....	
5.24 (3.91)	2645	0.839 (3.175)	1.116 (0.679)	6.25 (1.231)	166 (74.4)	58 (14.4)	75 (23.9)	..... .....	
15.44 (11.51)	2593	1.303 (4.934)	0.589 (0.358)	11.85 (2.334)	170 (76.4)	58 (14.4)	75 (23.9)	..... .....	
Av Av	12.52 (9.33)	2604	1.215 (4.597)	0.677 (0.412)	10.31 (2.030)	174 (79.0)	58 (14.4)	75 (23.8)	28.96 (97.79)

## DRAWBAR PERFORMANCE (Front Wheel Drive Disengaged)

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)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power — Two Hours 10th (H2) Gear											
18.29 (13.64)	1202 (5.35)	5.71 (9.18)	2501	7.33	1.821 (6.893)	0.694 (0.422)	10.04 (1.979)	191 (88.3)	60 (15.3)	71 (21.4)	28.61 (96.59)
75% of Pull at Maximum Power — Ten Hours 10th (H2) Gear											
14.68 (10.94)	920 (4.09)	5.98 (9.63)	2570	5.47	1.494 (5.656)	0.710 (0.432)	9.82 (1.935)	170 (76.5)	48 (9.1)	56 (13.2)	28.54 (96.38)
50% of Pull at Maximum Power — Two Hours 10th (H2) Gear											
10.06 (7.50)	614 (2.73)	6.14 (9.88)	2594	3.89	1.211 (4.584)	0.840 (0.511)	8.30 (1.636)	168 (75.3)	46 (7.8)	57 (13.9)	28.44 (96.04)
50% of Pull at Reduced Engine Speed — Two Hours 11th (H3) Gear											
10.03 (7.48)	613 (2.73)	6.14 (9.88)	1821	3.74	0.948 (3.588)	0.659 (0.401)	10.59 (2.085)	167 (75.0)	49 (9.4)	64 (17.8)	28.49 (96.19)

## MAXIMUM POWER IN SELECTED GEARS

17.44 (13.01)	2277 (10.13)	2.87 (4.62)	2497	14.63	8th (M4) Gear		169 (76.1)	45 (7.2)	47 (8.3)	28.40 (95.90)
18.30 (13.65)	1781 (7.92)	3.85 (6.20)	2501	11.74	9th (H1) Gear		190 (87.5)	58 (14.4)	69 (20.6)	28.64 (96.71)
18.66 (13.91)	1227 (5.46)	5.70 (9.18)	2502	7.45	10th (H2) Gear		189 (86.9)	58 (14.4)	69 (20.6)	28.64 (96.71)
17.51 (13.06)	788 (3.51)	8.33 (13.41)	2501	4.78	11th (H3) Gear		191 (88.1)	61 (16.1)	73 (22.8)	28.62 (96.65)

## LUGGING ABILITY IN 10th (H2) GEAR

Crankshaft Speed rpm		2502	2247	1994	1755	1498	1243
Pull—lbs (kN)		1227 (5.46)	1330 (5.92)	1384 (6.16)	1449 (6.45)	1485 (6.61)	1470 (6.54)
Increase in Pull %		0	8	13	18	21	20
Power—Hp (kW)		18.66 (13.91)	18.01 (13.43)	16.53 (12.33)	15.14 (11.29)	13.24 (9.88)	10.88 (8.11)
Speed—Mph (km/h)		5.70 (9.18)	5.08 (8.17)	4.48 (7.21)	3.92 (6.31)	3.34 (5.38)	2.78 (4.47)
Slip %		7.45	8.14	8.86	9.40	9.40	9.31

Department of Agricultural Engineering

Dates of Test: March 18 - 28, 1985

Manufacturer: TOYOSHA COMPANY, LTD. 55  
Joshiji-16, Kadoma City, Osaka, Japan

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel  
Cetane No. 48.3 (rating taken from oil company's  
inspection data) **Specific gravity converted to 60/  
60°F (15/15°C)** 0.8376 **Fuel weight** 6.974 lbs/gal  
(0.836 kg/l) **Oil SAE 30 API service classification**  
SE, SF, CC **To motor** 0.956 gal (3.619 l) **Drained  
from motor** 0.777 gal (2.943 l) **Transmission and  
final drive lubricant** Massey Ferguson Permatran  
III fluid **Total time engine was operated** 49.5  
hours.

**ENGINE:** Make Toyosha Diesel Type three cyl-  
inder vertical **Serial No.** MS142M00758 **Crank-  
shaft lengthwise** Rated rpm 2500 **Bore and stroke**  
3.228" × 3.543" (82 mm × 90 mm) **Compression  
ratio** 23 to 1 **Displacement** 87 cu in (1425 ml)  
**Starting system** 12 volt **Lubrication pressure** Air  
cleaner two paper elements **Oil filter** one full flow  
cartridge **Oil cooler** radiator for power steering  
fluid **Fuel filter** one paper element **Muffler** ver-  
tical **Cooling medium temperature control** one  
thermostat.

**CHASSIS:** Type front wheel assist **Serial No.**  
40384 **Tread width** rear 41.1" (1045 mm) to 62.6"  
(1590 mm) front 38.0" (965 mm) **Wheel base** 61.4"  
(1560 mm) **Center of gravity** (without operator or  
ballast, with minimum tread, with fuel tank filled  
and tractor serviced for operation) Horizontal dis-  
tance forward from center-line of rear wheels 23.2"  
(590 mm) Vertical distance above roadway 25.7"  
(653 mm) Horizontal distance from center of rear  
wheel tread 0.3" (7 mm) to the left **Hydraulic con-  
trol system** direct engine drive **Transmission** se-  
lective gear fixed ratio **Advertised speeds mph  
(km/h)** first 0.4 (0.6) second 0.6 (0.9) third 0.7 (1.2)  
fourth 1.0 (1.7) fifth 1.2 (2.0) sixth 1.7 (2.8) sev-  
enth 2.5 (4.0) eighth 3.4 (5.4) ninth 4.3 (7.0) tenth  
6.2 (9.9) eleventh 8.7 (14.0) twelfth 11.9 (19.2)  
reverse 0.7 (1.1), 2.4 (3.9), 8.4 (13.5) **Clutch** single  
dry disc operated by foot pedal **Brakes** wet disc  
operated by two foot pedals that can be locked  
together **Steering** power assist **Turning radius** (on  
concrete surface with brake applied) right 94.1"  
(2.39 m) left 94.1" (2.39 m) (on concrete surface  
without brake) right 105.1" (2.67 m) left 105.1"  
(2.67 m) **Turning space diameter** (on concrete sur-  
face with brake applied) right 204.2" (5.19 m) left  
204.2" (5.19 m) (on concrete surface without brake)  
right 226.2" (5.75 m) left 226.2" (5.75 m) **Power  
take-off** 540 rpm at 2327 engine rpm **Unladen  
tractor mass** 2815 lb (1277 kg).

TRACTOR SOUND LEVEL WITHOUT CAB	Front Wheel Drive	
	Engaged dB(A)	Disengaged dB(A)
Maximum Available Power—Two Hours	92.0	91.0
75% of Pull at Maximum Power—Ten Hours		90.5
50% of Pull at Maximum Power—Two Hours		88.0
50% of Pull at Reduced Engine Speed—Two Hours		86.5
Bystander in 12th (H3) gear		77.0

### DRAWBAR PERFORMANCE (Front Wheel Drive Engaged)

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)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
<b>Maximum Available Power — Two Hours 10th (H2) Gear</b>											
18.02 (13.44)	1144 (5.09)	5.91 (9.51)	2500	5.22	1.814 (6.866)	0.702 (0.427)	9.93 (1.957)	190 (87.5)	59 (14.7)	70 (20.8)	28.53 (96.34)

### MAXIMUM POWER IN SELECTED GEARS

16.33 (12.17)	2828 (12.58)	2.17 (3.48)	2541	14.79	7th (M3) Gear			169 (76.1)	43 (6.1)	44 (6.7)	28.36 (95.77)
18.49 (13.79)	1704 (7.58)	4.07 (6.55)	2501	7.96	9th (H1) Gear			188 (86.4)	58 (14.4)	68 (20.0)	28.65 (96.75)
18.31 (13.65)	1163 (5.17)	5.90 (9.50)	2499	5.24	10th (H2) Gear			188 (86.4)	58 (14.4)	69 (20.6)	28.54 (96.38)

### TIRES, BALLAST AND WEIGHT

		With Ballast	Without Ballast
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 11.2-24; 4; 18 (125)	Two 11.2-24; 4; 18 (125)
<b>Ballast</b>	—Liquid (each)	None	None
	—Cast Iron (each)	342 lb (155 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 6-14; 4; 28 (195)	Two 6-14; 4; 28 (195)
<b>Ballast</b>	—Liquid (each)	None	None
	—Cast Iron (each)	120 lb (55 kg)	None
<b>Height of Drawbar</b>		14 in (355 mm)	14 in (355 mm)
<b>Static Weight with Operator</b> —Rear		2610 lb (1184 kg)	1925 lb (873 kg)
	—Front	1305 lb (592 kg)	1065 lb (483 kg)
	—Total	3915 lb (1776 kg)	2990 lb (1356 kg)

### THREE POINT HITCH PERFORMANCE

Observed Maximum Pressure psi (kPa)	2025	(13960)	
Location	lift cylinder		
Hydraulic oil temperature °F (°C)	134	(57)	
Location	pump inlet		
	<b>Maximum Lift Capacity</b>		<b>Lift Capacity for Transport</b>
QUICK ATTACH	no		
CATEGORY	I		*not measured
LOAD lbs (kg)	1734	(787)	
TIME sec	1.73		
HITCH POINT MOVEMENT in (mm)			
Lowest position	10.6	(268)	
Top of timed range	31.6	(801)	
Highest position	** 31.7	(804)	
LOAD CG MOVEMENT in (mm)			
Lowest position	11.4	(290)	
Top of timed range	28.2	(716)	
Highest position	28.3	(718)	

\*Implement load capacity for transport purposes not specified by manufacturer.

\*\*The observed power range, 21.1 in (536 mm) is less than the minimum power range for Cat I, 22 in (559 mm) specified by ASAE Standard S217.10.

\*\*The observed highest position, 31.7 in (804 mm) is less than the minimum height for highest position for Cat I, 32 in (813 mm) specified by ASAE Standard S217.10.

**REPAIRS AND ADJUSTMENTS:** The throttle lever friction disc was tightened during the preliminary PTO tests.

**REMARKS:** All test results were determined from observed data obtained in accordance with SAE and ASAE test codes and the technically equivalent ISO test codes or official Nebraska test procedure. For the maximum power tests, the fuel temperature at the injection pump was maintained at 137°F (58.4°C). Four gears were chosen between 15% slip and 10 mph (16.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test No.1553, June 13, 1985.

LOUIS I. LEVITICUS

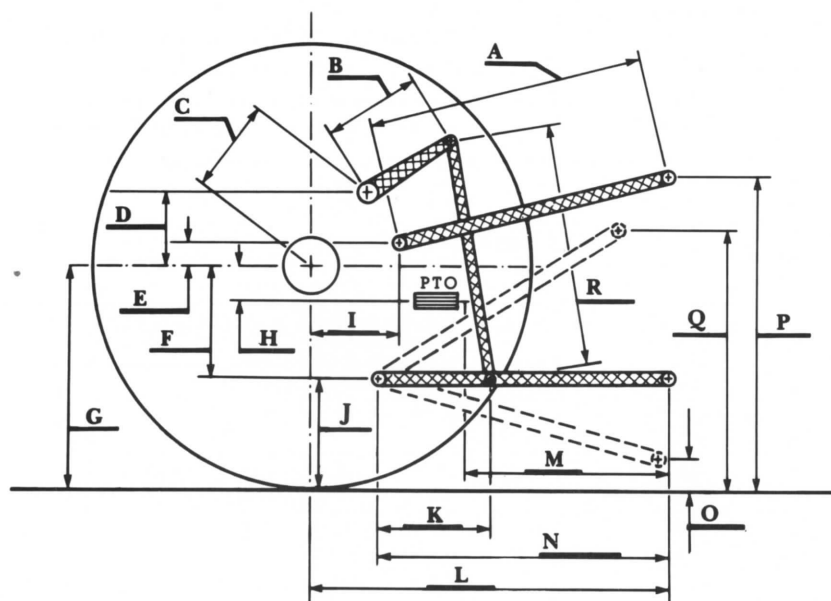
Engineer-in-Charge

K. VON BARGEN

L. L. BASHFORD

T. L. THOMPSON

Board of Tractor Test Engineers



Hitch Dimensions as Tested — No Load

	inch	mm
A	23.9	606
B	10.6	270
C	15.5	393
D	15.2	386
E	16.1	409
F	5.3	135
G	20.6	522
H	1.8	46
I	8.1	206
J	15.3	387
K	15.4	390
L	32.2	819
M	21.8	554
N	25.6	650
O	7.8	197
P	33.3	845
Q	30.8	781
R	23.0	584



Massey Ferguson 1030 Diesel