University of Nebraska - Lincoln Digital Commons@University of Nebraska - Lincoln

Nebraska Tractor Tests

Tractor Test and Power Museum, The Lester F. Larsen

1-1-1965

Test 896: Massey-Ferguson MF 165 (Diesel) (Also MF 165 8-Speed Diesel)

Tractor Museum University of Nebraska-Lincoln, TractorMuseumArchives@unl.edu

Follow this and additional works at: http://digitalcommons.unl.edu/tractormuseumlit



Part of the Applied Mechanics Commons

Museum, Tractor, "Test 896: Massey-Ferguson MF 165 (Diesel) (Also MF 165 8-Speed Diesel)" (1965). Nebraska Tractor Tests. Paper

http://digitalcommons.unl.edu/tractormuseumlit/1278

This Article is brought to you for free and open access by the Tractor Test and Power Museum, The Lester F. Larsen at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Nebraska Tractor Tests by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

NEBRASKA TRACTOR TEST 896 - MASSEY-FERGUSON MF 165 DIESEL (ALSO MF 165 8-SPEED DIESEL)

POWER	TAKE	OFF	PER	FORM	MANO	$\mathbb{C}\mathbf{F}$
--------------	------	-----	-----	------	------	------------------------

			Fuel Consumption			Temperati				
	Нр	Crank- shaft speed rpm	Gal per hr	Lb per hp-hr	Hp-hr per gal	Cooling medium	Air wet bulb	Air dry bull	; i	arometer nches of Mercury
		MAX	IMUM	POWER	AND FUE	L CONS	UMPT	ION		
			Ra	ted Engi	ne Speed—T	wo Hours	6			
	52.42	1999	3.117	0.411	16.82	172	61	74	ļ 	29.000
		Stand	lard Pov	wer Take	off Speed (5	640 rpm)-	One F	Iour		
	47.40	1705	2.772	0.405	17.10	176	59	73	3	29.020
	VAR	YING P	OWER	AND FU	UEL CONS	UMPTIO	N-TV	о но	OUR	S
	45.56	2045	2.692	0.409	16.92	167	59	73	}	
	0.00	2145	0.867			163	60	74		
	23.48	2106	1.682	0.496	13.96	164	60	73	B	
	52.24	2000	3.160	0.419		174	61	75		
	11.84	2125	1.257	0.735		162	60	75		
	34.72	2077	2.163	0.431		168	61	75		
Av	27.97	2083	1.970	0.487	14.20	166	60	74	<u> </u>	29.020
			DRA	WBAR	PERFO	RMAN	CE			
Fuel Consumption Temp Degrees F										
	5 .		o 1		cr community		-	-		
Hı		- Speed miles	Crank- shaft	Slip of	Gal Lb	Hp-hr	Cool-	Air	Air	Barom- eter
H			shaft speed	Slip	Gal Lb per per	Hp-hr per	Cool- ing	wet	dry	
	p bar pull lbs	miles per hr	shaft speed rpm	Slip of drivers %	Gal Lb per per hr hp-hr	Hp-hr per gal	Cool- ing med	wet bulb	dry bulb	eter inches of Mercury
	p bar pull lbs	miles per hr	shaft speed rpm	Slip of drivers %	Gal Lb per per hr hp-hr	Hp-hr per gal	Cool- ing med	wet bulb	dry bulb	eter inches of Mercury
VAF	p bar pull lbs RYING D Max	miles per hr PRAWBA	shaft speed rpm AR POV	Slip of drivers % WER AN	Gal Lb per per hr hp-hr D FUEL Co Two Hours	Hp-hr per gal ONSUMP —7th Gea	Cooling med TION r (1st]	wet bulb WIT! Hi-Lo	dry bulb H BA MP)	eter inches of Mercury
	bar pull lbs RYING D Max 93 3428	miles per hr ORAWBA imum A 4.91	shaft speed rpm AR POV vailable 2000	Slip of drivers % WER AN e Power— 6.62	Gal Lb per per hr hp-hr D FUEL Co Two Hours 3.004 0.463	Hp-hr per gal ONSUMP -7th Gea 14.96	Cooling med TION r (1st 1	wet bulb WITI Hi-Lo	dry bulb H BA MP)	eter inches of Mercury
VAF	P bar pull lbs RYING D Max 93 3428 75% of	PRAWBA cimum A 4.91 F Pull at	shaft speed rpm AR POV vailable 2000 Maxim	Slip of drivers % WER AN Power— 6.62	Gal Lb per per hr hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou	Hp-hr per gal ONSUMP -7th Gea 14.96 urs-7th G	Cooling med TION r (1st 1 178 ear (1st	wet bulb WITI Hi-Lo 60 st Hi-L	dry bulb H BA MP) 73	eter inches of Mercury ALLAST 29.000 P)
VAF	bar pull lbs RYING D Max 93 3428 75% 000000000000000000000000000000000000	miles per hr PRAWBA timum A 4.91 f Pull at 5.13	shaft speed rpm AR POV vailable 2000 Maxim 2049	Slip of drivers % WER AN Power— 6.62 : tum Power 4.90 :	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470	Hp-hr per gal ONSUMP -7th Gea 6 14.96 urs-7th G 14.74	Cooling med TION r (1st) 178 ear (1st)	wet bulb WIT Hi-Lo 60 st Hi-L	dry bulb H BA MP) 73 o MI	eter inches of Mercury ALLAST 29.000 P) 28.851
VAF 44.9 37.0	bar pull	PRAWBA dimum A 4.91 f Pull at 5.13	shaft speed rpm AR POV vailable 2000 Maxim 2049 Maxim	Slip of drivers % WER AN Power 6.62 : um Power 4.90 : um Power	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hotel	Hp-hr per gal ONSUMP -7th Gea 14.96 urs-7th G 14.74 urs-7th G	Cooling med TION T (1st) 178 ear (1st) 169 ear (1	wet bulb WIT1 Hi-Lo 60 st Hi-L 66 st Hi-I	dry bulb H BA MP) 73 o MI 76	29.000 P) 28.851
VAF 44.9 37.0	bar pull	miles per hr PRAWBA timum A 4.91 f Pull at 5.13	shaft speed rpm AR POV vailable 2000 Maxim 2049 Maxim 2084	Slip of drivers % WER AN e Power— 6.62 : tum Power 4.90 : tum Power 3.11	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hou 1.947 0.520	Hp-hr per gal ONSUMP -7th Gea 6 14.96 urs-7th G 14.74 urs-7th G 13.29	Cooling med TION r (1st 1 178 ear (1st 169 ear (11168	wet bulb WIT Hi-Lo 60 st Hi-L	dry bulb H BA MP) 73 o MI	eter inches of Mercury ALLAST 29.000 P) 28.851
VAF 44.9 37.0	bar pull	PRAWBA dimum A 4.91 f Pull at 5.13	shaft speed rpm AR POV vailable 2000 Maxim 2049 Maxim 2084	Slip of drivers % WER AN e Power— 6.62 : tum Power 4.90 : tum Power 3.11	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hotel	Hp-hr per gal ONSUMP -7th Gea 6 14.96 urs-7th G 14.74 urs-7th G 13.29	Cooling med TION r (1st 1 178 ear (1st 169 ear (11168	wet bulb WIT1 Hi-Lo 60 st Hi-L 66 st Hi-I	dry bulb H BA MP) 73 o MI 76	29.000 P) 28.851
VAF 44.9 37.0 25.8	P bar pull lbs RYING D Max 93 3428 75% of 02 2706 50% of 88 1826	miles per hr PRAWBA Simum A 4.91 f Pull at 5.13 Pull at 5.32	shaft speed promised	Slip of drivers % WER AN POWER—6.62 UM POWE 4.90 3.11 MUM PO 14.92	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hou 1.947 0.520 DWER WIT 4th Gear (2nd	Hp-hr per gal ONSUMP -7th Gea 14.96 14.74 urs-7th G 13.29 TH BALL dLo-Hi M	Cooling med TION r (1st 1 178 ear (1st 169 ear (1 168 AST P) 170	wet bulb WIT1 Hi-Lo 60 st Hi-L 66 st Hi-I 69	dry bulb H BA MP) 73 o MI 76 o M 84	29.000 P) 28.851
44.5 37.0 25.8 34.4 44.5	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 518 45 5718 56 5237	miles per hr DRAWBA simum A 4.91 f Pull at 5.13 Pull at 5.32	shaft speed promised	Slip of drivers % WER AN POWER—6.62 :: Sum Power—4.90 :: 4.90 :: MUM PO 14.92 4 11.79 ::	Gal Lb per hr hr hr hr hr hr hr hp-hr hr hp-hr hr hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hour h.947 0.520 er—Tkh Gear (2nd 5th Gear (3rd hr	Hp-hr per gal ONSUMP -7th Gea 14.96 14.74 urs-7th G 13.29 TH BALL d Lo-Hi M Lo-Lo Mi	Cooling med TION 178 ear (1: 169 ear (1 168 AST P) 170 P) 170	wet bulb WIT1 Hi-Lo 60 st Hi-L 66 st Hi-L 69 56 56	dry bulb H BA MP) 73 o M1 76 o M 84 65 65	29.000 P) 28.851 P) 29.090 29.090
25.8 34.4 44.5.2	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 55% of 5237 28 3886	miles per hr Awar A.91 f Pull at 5.13 Pull at 5.32 2.26 3.19 4.37	shaft speed promise speed prom	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6	Gal Lb per hr	Hp-hr per gal ONSUMP -7th Gea 14.96 14.74 urs-7th G 13.29 TH BALL LO-Hi M Lo-Lo M Lo-Hi M	Cooling med TION 178 ear (1st 1 169 ear (1 168 AST P) 170 P) 170 P) 175	wet bulb WIT1 Hi-Lo 60 st Hi-L 66 st Hi-I 69 56 56 56	dry bulb H BA MP) 73 .o M1 76 .o M2 84 65 65	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080
37.0 25.8 34.4 44.8 45.2 46.9	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 5588 1826 45 5718 566 5237 28 3886 94 3596	miles per hr 4.91 France PRAWBA Market Mar	shaft speed promise speed prom	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6 7.13 7	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hos 1.947 0.520 DWER WIT 4th Gear (2nd 5th Gear (3rd 5th Gear (3rd 7th Gear (1st	Hp-hr per gal ONSUMP -7th Gea 14.96 14.74 urs-7th G 13.29 H BALL LO-Hi M Lo-Lo M Hi-Lo MP	Cooling med TION r (1st 1 178 ear (1st 169 ear (1st 168 AST P) 170 P) 170 P) 175) 175	wet bulb WITI Hi-Lo 60 st Hi-L 69 56 56 56 56	dry bulb H BA MP) 73 .o M1 76 .o M2 84 65 65 65	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080
37.0 25.8 34.4 44.5 46.9 46.9	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 50% of 5237 28 3886 94 3596 35 2663	miles per hr 4.91 France PRAWBA 4.91 France Pull at 5.13 Pull at 5.32 2.26 3.19 4.37 4.90 6.53	shaft speed rpm AR POV vailable 2000 Maxim 2049 Maxim 2084 MAXIM 2054 2001 2000 1999 1997	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6 7.13 7 4.71 8	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 r—Two Hos 1.947 0.520 DWER WIT Ath Gear (2nd 5th Gear (3rd 5th Gear (1st 8th Gear (1st 8th Gear (1st	Hp-hr per gal ONSUMP -7th Gea 14.96 13.29 H BALL LO-Hi M Lo-Lo M Hi-Lo MP Hi-Hi MP	Cooling med TION 178 ear (1: 169 ear (1) 168 AST P) 170 P) 175) 175) 178	wet bulb WITI Hi-Lo 60 st Hi-L 66 st Hi-L 69 56 56 56 57	dry bulb H BA MP) 73 o M0 76 o M 84 65 65 65 65 70	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080 29.080
37.0 25.8 34.4 45.2 46.3 46.6	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 5237 28 3886 94 3596 35 2663 59 2316	miles per hr A 191 A 190 A 197 A 197 A 190 A 197	shaft speed promise speed promise speed promise speed	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6 7.13 7 4.71 8 4.29 5	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hos 1.947 0.520 DWER WIT Ath Gear (2nd 5th Gear (3rd 5th Gear (1st 8th Gear (1st 8th Gear (2nd	Hp-hr per gal ONSUMP -7th Gea 14.96 114.74 urs-7th G 13.29 H BALL 1Lo-Hi M Lo-Lo M Hi-Lo MP Hi-Hi MP	Cooling med TION 178 178 ear (1: 169 169 AST P) 170 P) 175) 175) 178 P) 178	wet bulb WIT1 Hi-Lo 60 5t Hi-L 66 5t Hi-L 69 56 56 56 57 57	dry bulb H BA MP) 73 .o MP 76 .o M 84 65 65 65 70 70	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080 29.080 29.080
37.0 25.8 34.4 45.2 46.6 46.6 45.2	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 50% of 5237 28 3886 94 3596 35 2663 69 2316 21 1698	miles per hr 4.91 France PRAWBA A.91 France Pull at 5.13 Pull at 5.32 2.26 3.19 4.37 4.90 6.53 7.56 9.99	shaft speed promised	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6 7.13 7 4.71 8 4.29 5 3.26 10	Gal Lb per hp-hr h	Hp-hr per gal ONSUMP -7th Gea 14.96 13.29 H BALL LO-Hi M Lo-Lo M Hi-Lo M Hi-Lo M Hi-Lo M	Cooling med TION 178 178 ear (1: 169 ear (1) 168 AST P) 170 P) 175) 175) 178 P) 178 P) 178 P) 178	wet bulb WIT1 Hi-Lo 60 61 Hi-L 66 65 Hi-L 69 56 56 56 57 57	dry bulb H BA MP) 73 .o MP 76 .o M 84 65 65 65 70 70	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080 29.080 29.080 29.080
37.0 25.8 34.4 45.2 46.9 46.6	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 50% of 5237 28 3886 94 3596 35 2663 69 2316 21 1698	miles per hr A 191 A 190 A 197 A 197 A 190 A 197	shaft speed promise speed promise speed promise speed	Slip of drivers % WER AN Power—6.62 :: um Power—3.11 MUM PO 14.92 4 11.79 5 7.69 6 7.13 7 4.71 8 4.29 5 3.26 10	Gal Lb per hp-hr D FUEL Co Two Hours 3.004 0.463 er—Ten Hou 2.512 0.470 er—Two Hos 1.947 0.520 DWER WIT Ath Gear (2nd 5th Gear (3rd 5th Gear (1st 8th Gear (1st 8th Gear (2nd	Hp-hr per gal ONSUMP -7th Gea 14.96 13.29 H BALL LO-Hi M Lo-Lo M Hi-Lo M Hi-Lo M Hi-Lo M	Cooling med TION 178 178 ear (1: 169 ear (1) 168 AST P) 170 P) 175) 175) 178 P) 178 P) 178 P) 178	wet bulb WIT1 Hi-Lo 60 5t Hi-L 66 5t Hi-L 69 56 56 56 57 57	dry bulb H BA MP) 73 .o MP 76 .o M 84 65 65 65 70 70	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080 29.080 29.080
37.0 25.8 34.4 45.2 46.6 45.2	P bar pull lbs RYING D Max 93 3428 75% of 50% of 50% of 50% of 5237 28 3886 94 3596 35 2663 69 2316 21 1698	miles per hr PRAWBA timum A 4.91 f Pull at 5.13 Pull at 5.32 2.26 3.19 4.37 4.90 6.53 7.56 9.99 14.15	shaft speed promise speed promise speed promise speed	Slip of drivers % WER AN POWER—6.62 :	Gal Lb per hp-hr h	Hp-hr per gal ONSUMP -7th Gea 14.96 14.74 urs-7th G 13.29 TH BALL 1Lo-Hi M ILo-Lo M ILo-Hi M Hi-Lo M	Cooling med TION 178 ear (1st 169 fear (1 168 AST P) 170 P) 170 P) 175) 178 P) 178 P) 178 P) 178 P) 178	wet bulb WITI Hi-Lo 60 st Hi-L 66 st Hi-I 69 56 56 56 57 57 57	dry bulb H BA MP) 73 .o MP 76 .o M 84 65 65 65 70 70	29.000 P) 28.851 P) 29.090 29.090 29.090 29.090 29.080 29.080 29.080 29.080

VARYING DRAWBAR PULL AND TRAVEL SPEED WITH BALLAST-7th Gear (1st Hi-Lo MP)

Pounds pull	3596	3770	3821	4015	4069	3977
Horsepower	46.94	43.97	39.76	36.34	31.39	25.66
Crankshaft speed, rpm	1999	1795	1606	1402	1197	1003
Miles per hour	4.90	4.37	3.90	3.39	2.89	2.42
Slip of drivers, %	7.13	7.52	7.75	8.08	8.19	8.19

TIRES, BALLAST	and WEIGHT	With Ballast	Without Ballast
Rear tires Ballast	No, size, ply & psiLiquidCast iron	Two 14.9-28; 6; 14 491 lb each 679 lb each	Two 14.9-28; 6; 14 None None
Front tires Ballast	No, size, ply & psiLiquidCast iron	Two 6.00-16; 4; 32 None 100 lb each	Two 6.00-16; 4; 28 None None
Height of drawb	ar	201/2 inches	22 inches
Static weight	—Rear Front	5520 lb 1930 lb	3180 lb 1730 lb
Total weight wit	h operator	7625 lb	5085 lb

Department of Agricultural Engineering

Dates of Test: MAY 13 TO MAY 22, 1965

Manufacturer: MASSEY-FERGUSON INC., DETROIT, MICHIGAN

FUEL, OIL and TIME Fuel No 2 Diesel Cetane No 57.0 (rating taken from oil company's typical inspection data) Specific gravity converted to 60°/60° 0.8312 Weight per gallon 6.920 lb Oil SAE 20-20W API service classification MS, DS To motor 2.045 gal Drained from motor 1.818 gal Transmission and final-drive lubricant Massey-Ferguson Oil M-1101 Total time engine was operated 401/2 hours.

ENGINE Make Perkins diesel Type 4 cylinder vertical Serial No 29 A 5487 Crankshaft mounted lengthwise Rated rpm 2000 Bore and stroke 3.6" x 5" Compression ratio 17.5 to 1 Displacement 203.5 cu in Cranking system 12 volt electric Lubrication pressure Air cleaner dry type with replaceable pleated paper element Oil filter full flow replaceable paper element Fuel filter primary and secondary filters with replaceable paper elements and sediment bowl with screen Muffler was used Cooling medium temperature control thermostat.

CHASSIS Type standard Serial No SDW 643000010 Tread width rear 56" to 90" front (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 30" Vertical distance above roadway 30.3" Horizontal distance from center of rear wheel tread 0" to the right/left Hydraulic control system Constant running except when PTO foot clutch is disengaged Transmission selective gear fixed ratio with partial range operator controlled power shifting Advertised speeds mph first 1.28 second 1.68 third 1.93 fourth 2.53 fifth 3.54 sixth 4.64 seventh 5.15 eighth 6.75 ninth 7.72 tenth 10.11 eleventh 14.17 twelfth 18.54 reverse 1.76, 2.29, 7.01, and 9.18 Clutch single plate dry disc in combination with PTO clutch operated by single foot pedal Brakes double disc operated by two foot pedals which can be locked **Steering** mechanical with power can be locked **Steering** mechanical with power assist **Turning** radius (on concrete surface with brake applied) right 126" left 126" (on concrete surface without brake) right 140" left 144" **Turning** space diameter (on concrete surface with brake applied) right 264" left 264" (on concrete surface without brake) right 290" left 300" **Belt pulley** 1176 rpm at 1975 engine rpm diam 101/4" face 61/2" Belt speed 3117 fpm Power take-off 540 rpm at 1700 engine rpm.

REPAIRS and ADJUSTMENTS No repairs or adjustments.

REMARKS All test results were determined from observed data obtained in accordance with the SAE and ASAE test code.

First, second, and third gears were not run as it was necessary to limit the pull in fourth gear to avoid excessive wheel slippage. Twelfth gear was not run as it exceeded 15 mph.

We, the undersigned, certify that this is a true and correct report of official Tractor Test 896.

L. F. LARSEN

Engineer-in-Charge

G. W. STEINBRUEGGE, Chairman J. J. SULEK D. E. LANE Board of Tractor Test Engineers