

व्यावसायिक परीक्षण रिपोर्ट (वैरिएंट)

संख्या/No. : T-1685/2216/2022

COMMERCIAL TEST REPORT (Variant)

माह/Month : November, 2022

[ONLINE TESTING]

यह परीक्षण रिपोर्ट 30/11/2027 तक वैध है / THIS TEST REPORT IS VALID UPTO 30/11/2027)



TAFE, MF 246 4WD TRACTOR



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय

(कृषि एवं किसान कल्याण विभाग)

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE

(DEPARTMENT OF AGRICULTURE & FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

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T-1685/2216/2022	TAFE, MF 246 4WD TRACTOR – COMMERCIAL (VARIANT)
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1. BACKGROUND

- i) The **TAFE, MF 246** tractor had undergone “Initial Commercial Test” at this Institute vide Test Report No. T-1639/2170/2022 (released in April, 2022).
- ii) On 27.05.2022, when the tractor viz. **TAFE, MF 246 4WD** tractor submitted for variant test, was still in the Institute’s campus only, the applicant came to apply for variant test, **TAFE, MF 246 4WD** tractor as the variant of **TAFE, MF 246**. The applicant was allowed for conversion from 2WD to 4WD on the same tractor lying in the campus of Institute. **There is, therefore, no need to conduct those tests as are required for conformity of sample as being the same as tested earlier.** However, for complete information on performance of this tractor, Test Report No. T-1639/2170/2022 is a necessary adjunct to this report.
- iii) After examination of the documents, only following tests were required to be conducted as laid down in IS: 12207-2019.
 1. Specification checking of variant feature i.e. 4WD
 2. Nominal speed test
 3. Drawbar performance test
 4. Noise measurement test

2. SPECIFICATIONS CHECKING OF VARIANT FEATURE

S.No.	Parameter		Base Model	Variant Model	Remarks
1	2		3	4	5
2.1.1	Tractor:				
	Make	:	TAFE	TAFE	No Change
	Model	:	MF 246	MF 246 4WD	Changed
	Type	:	Rear Wheel Drive, Standard Agricultural Tractor	Four-wheel Driven, Standard Agricultural Tractor	Changed
	Month & Year of manufacture	:	08 / 21	08 / 21	No Change
	Chassis number	:	MEAA9655HM238 3470	MEAA9655HM23 83470	No Change
	Country of Origin	:	India	India	No Change
2.1.2	Front differential unit:				
	Type	:	Not applicable	Crown wheel and bevel pinion with differential unit accommodated inside the centre of front axle housing	Changed
	Reduction through crown wheel & bevel pinion	:	Not applicable	3.222: 1 (29/9T)	Changed

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1	2	3	4	5	6
17.	Other changes:				
a)	Tractor Model	Tafe, MF 246	Tafe, MF 246 4WD	Changed	
b)	Steered Wheel(s):				
	Size	6.00 – 16	8.00 -18	Changed	
	Ply rating	8	6	Changed	
	Make & size of rim	WIL & 4.50E x 16	WIL & W7 x 18	Changed	
	Track width, (mm)	1320(std.), & 1540	1295(std.) & 1395	Changed	
c)	Mass standard ballast tractor, [Front/Rear/Total], (kg)	790/1205/1995	887/1213/2100	Changed	
d)	Overall dimensions, (mm)				
	-Length	3660	3660	No Changed	
	-Width	1785	1785	No Changed	
	-Height	2400	2400	No Changed	
	-Ground clearances	380 (below tie rod)	370 (below front differential housing)	Changed	
e)	Wheel base, (mm)	1935	2040	Changed	

8. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

8.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluation (not-mandatory) parameter applicable for qualifying Minimum Performance Criteria as per Clause-4 (Table-1) of IS: 12207-2019 for acceptance of the tractor for the purpose of subsidies/NABARD financing are summarized as under:-

Sl. No.	Characteristic	Category (Evaluative /Non-Evaluative)	Requirements as per IS: 12207-2019	Values declared by the applicant/ requirement		As observed		Whether variant model meets the requirements (Yes/No.)
				Base model	Variant Model	Base model	Variant model	
1	2	3	4	5 a	5 b	6 a	6 b	7
8.1.1	Drawbar performance:							
a)	Maximum drawbar pull with ballast corresponding to 15 percent wheel slip, (kN)	Non Evaluative	Minimum 70 percent of static mass with ballast	20.00 (D) 18.87 Minimum (R)	20.0 (D) 19.56 Minimum (R)	21.24	26.50	Yes
b)	Max. drawbar pull with standard ballast, as the case may be corresponding to 15 percent wheel slip or 7 percent track slip, kN	Evaluative	Minimum 70 percent of static mass of tractor with standard ballast,	14.00 (D) 13.69 Minimum (R)	14.00 (D) 14.42 Minimum (R)	16.52	19.96	Yes

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1	2	3	4	5 a	5 b	6 a	6 b	7
c)	Maximum drawbar power with standard ballast as the case may be, kW	Evaluative	Minimum 80 % of PTO power as referred in SI No. i) a) of PTO performance in case of tractors having total static mass > 1500 kg Minimum 75 % of PTO power as referred in SI No. i) a) of PTO performance in case of light weight tractors having 1500 kg total static mass of tractor Minimum 75 % of the engine power as referred in SI No. i) a) of engine performance in case of tractors which do not have a PTO shaft.	25.0 (D)	25.0 (D)	25.8	24.9	Yes
				24.0 Minimum (R)	24 Minimum (R)			
d)	Maximum transmission oil temperature (°C)	Evaluative	The declared value should not exceed the maximum value specified by oil company.	132 (D)	132 (D)	89	100	Yes
8.1.2 Noise measurement :								
a)	Maximum ambient noise emitted by the tractor dB(A)	Evaluative	88 dB (A) for >1.5 tonne GVW and 85 db (A) for <1.5 tonne GVW (as per CMVR)	88 (R)	88 (R)	84	81	Yes
b)	Maximum noise at operator's ear level dB(A)	Evaluative	96 (as per CMVR)	96 (R)	96 (R)	93	93	Yes
8.1.3 Labelling of tractors (Provision of labelling plate):								
	1) Make	Evaluative	Should conform to the requirements of CMVR along with maximum PTO Power in kW and year of manufacture in numerical form. MM YY	TAFE				Yes
	2) Model	Evaluative		MF 246 4WD				Yes
	3) Month & Year of manufacture	Evaluative		08/21				Yes
	4) Engine number	Evaluative		S325.5L93755				Yes
	5) Chassis number	Evaluative		MEAA9655HM2383470				Yes
	6) Declaration of PTO power, (kW)	Evaluative		30.5				Yes
	7) Specific fuel consumption, (g/kWh)	Evaluative		265				Yes
8.1.4 Literature (Submission to test agency):								
(a)	Operator manual	Evaluative	Provided/Not Provided	Provided	Provided			Yes
(b)	Parts Catalogue	Evaluative	Provided/Not Provided	Provided	Provided			Yes
(c)	Workshop/Service manual	Evaluative	Provided/Not Provided	Provided	Provided			Yes
8.1.5 Fitment of Roll Over Protective Structures (ROPS):								
	For tractor having more than 1150 mm rear track width	Evaluative	ROPS should meet the requirement of IS: 1182 or OECD code or equivalent International Standard.	Not Provided		Not fitted		Not Applicable

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1	2	3	4	5 a	5 b	6 a	6 b	7
8.1.6	Standard Accessories	Evaluative	Trailer hitch, front tow hook, linkage drawbar should be provided with tractor.	Provided		Provided		Yes
8.1.7	Accessories (optional)	Non Evaluative	Ballast weight, if fitted, should meet the requirement of CMVR.	Provided		Provided		Yes

8.2 CATEGORY OF BREAKDOWNS / DEFECTS:					
Sl. No.	Category of breakdowns	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207-2019	As observed	Whether meets the Requirements (Yes/No.)
1.	Critical	Evaluative	No critical breakdown.	None	Yes
2.	Major	Evaluative	Not more than two and neither of them should be repetitive in nature.	None	Yes
3.	Minor	Evaluative	Not more than three and frequency of each should not be more than two.	None	Yes
4.	Total breakdowns	Evaluative	In no case, the total number of breakdowns should exceed five, that is, (2 major + 3 minor) or 5 minor breakdowns.	None	Yes

8.3 Adequacy of Literature supplied with machine:

8.3.1 The following literature was supplied with test sample for reference during the test.



- Operator Instruction book of "TAFE, MF 246 4WD" Tractor model.
- Workshop Service manual (Part-I & II) of "TAFE, MF 246 4WD" Tractor model.
- Parts book of "TAFE, MF 246 4WD" Tractor model.

8.3.2 The operator manual, parts catalogue & workshop service manual may be brought out for the guidance of users and service personnel as per IS:8132-1999 incorporating, inter alia, the following:

- Coolant water ratio

The results of the tests carried out on variant model "TAFE, MF 246 4WD" tractor have been compared with those on base model "TAFE, MF 246" tractor tested vide test report No. T-1639/2170/2022 (April, 2022) & found within the limit as specified in Indian Standard: 12207-2019.

TESTING AUTHORITY:

C.V. CHIMOTE TEST ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by: **Mrs. Poonam Khurasia**, Senior Technical Assistant

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9. APPLICANT'S COMMENTS

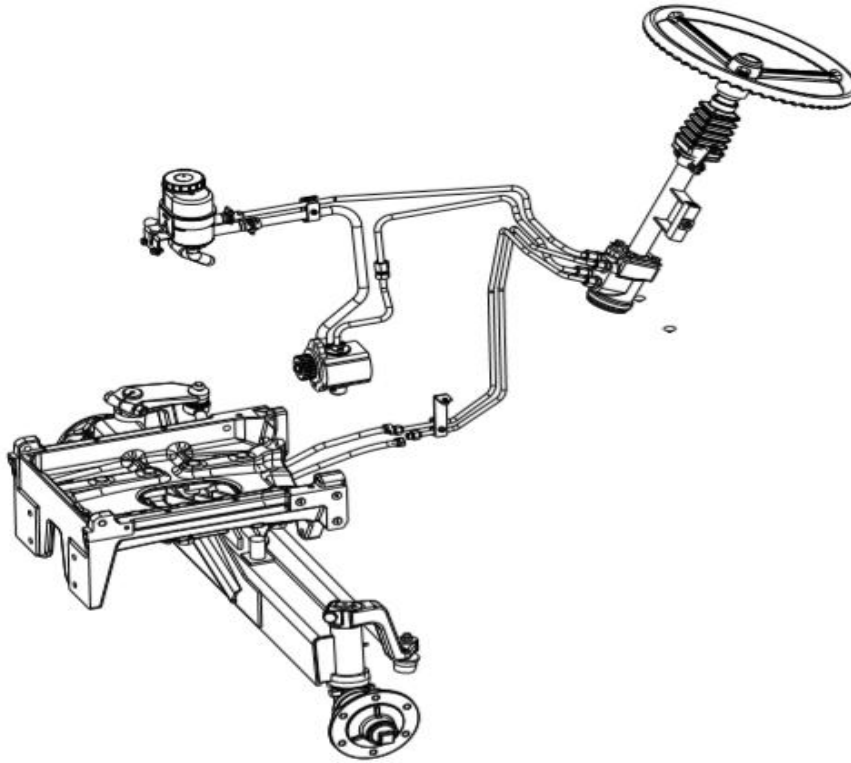
Para No.	Our Reference	Applicant's comments
We have Nil comments.		

ANNEXURE-I

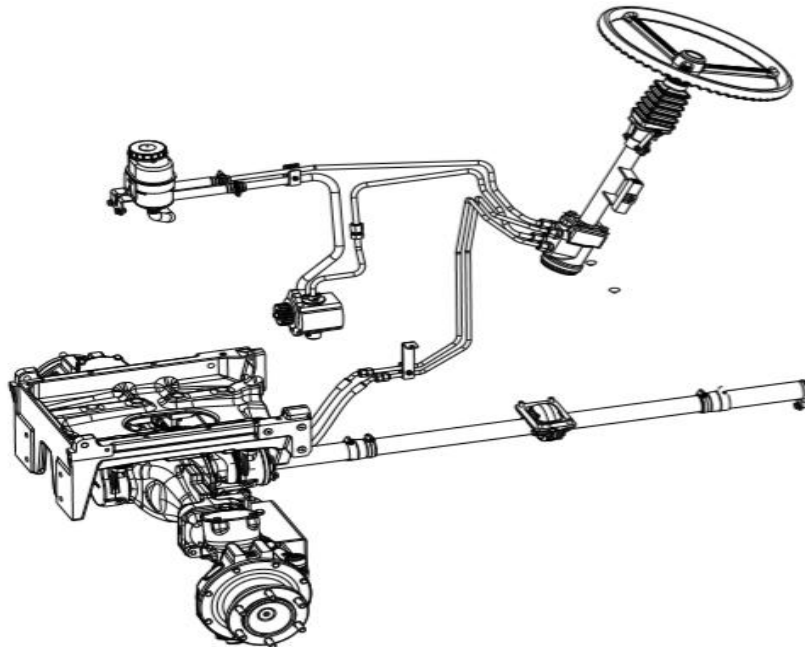
TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS	HOURS
1.	Drawbar performance test	28.2
2.	Nominal speed test	2.4
3.	Noise measurement test	1.5
B.	Miscellaneous test and other run hours, including idle run transportation, trial and preparation for test.	3.4
Total		35.5

ANNEXURE-II



FRONT AXLE DESIGN ON BASE MODEL TAFE MF 246



FRONT AXLE DESIGN ON VARIANT MODEL TAFE MF 246 4WD