



TAFE LTD, MF 9500 TRACTOR



सत्यमेव जयते

भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय
कृषि, सहकारिता एवं किसान कल्याण विभाग
मशीनीकरण एवं प्रौद्योगिकी प्रभाग

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE

(Deptt. of Agricultural, Cooperation & Farmer's Welfare, Mechanization & Technology Division)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान
ट्रैक्टर नगर, बुदनी (म.प्र.) ४६६ ४४५

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

(An ISO : 9001 - 2015 Certified Institute)

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- Manufacturer : M/s. Tractor and Farm Equipment Ltd.
Post Box No. 3302,
35 Mahatma Gandhi Road,
Nungambakkam, Chennai – 600 034
(Tamil Nadu)
- Test requested by (applicant) : M/s. Tractor and Farm Equipment Ltd.
Post Box No. 3302,
35 Mahatma Gandhi Road,
Nungambakkam, Chennai – 600 034
(Tamil Nadu)
- Test requested by : The manufacturer
Selected for test by : The representative of testing authority
Place of running-in : At manufacturer's works
Duration of said running-in, (h):
- Engine : 12
 - Transmission : 18
- Method of Selection** : The test sample was selected randomly out of five tractors from the production line by the representative of testing authority.

2. FUEL AND LUBRICANTS

- 2.1 Fuel** : The High-speed diesel oil supplied by M/s Indian Oil Corporation Limited having density of 0.836 g/cc at 15°C was used.

2.2 Lubricants:

S. No.	Particulars	As recommended by the manufacturer	As used during the test
1.	Engine	20W40	As recommended
2.	Transmission , Hydraulic system	Tractelf SF3	Oil originally filled in the tractor was not changed
3.	Steering system	Castrol TQ	--do--
4.	Grease	Servo grease MP3	Servo grease MP3

3. ESSENTIAL TESTS

3.1. SPECIFICATIONS

- | | <u>Previous sample</u> | <u>Present sample</u> |
|-----------------------|------------------------|---|
| 3.1.1 Tractor: | | |
| Make | : | TAFE LTD. |
| Model | : | MF 9500 |
| Brand name | : | None |
| Type | : | Four wheeled, rear wheel driven, unit construction, general purpose agricultural tractor. |
| Year of manufacture | : | 2010 |
| Chassis Serial number | : | 950001 |
| Country of Origin | : | India |
| | | AJ (January, 2018)
MEA8BD83A
J1173391 |
| 3.1.2 Engine: | | |
| Make | : | Simpson & Co. Ltd. |
| Model | : | T III A TSJ 327-F8 T III A TSJ 327 - F19 |
| Type | : | Four stroke, turbo charged, water cooled, direct injection, diesel engine. |
| Serial number | : | T III A TSJ 327 010846 TSJ 327 A 24576 |



6. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

- 6.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) and non – evaluative (not mandatory) parameters applicable for qualifying Minimum Performance Criteria as per clause-4 table-1 of Indian Standard **12207: 2014** for acceptance of tractor for the purpose of subsidies/NABARD financing for the applicable features for this tractor model.

Sl. No.	Characteristic	Category (Evaluative / Non Evaluative)	Requirements as per IS: 12207- 2014	Values declared by the applicant/ requirement		As observed		Whether present model meets the requirem ents (Yes/No.)
				Previous sample	Present sample	Previous sample	Present sample	
6.1.1	PTO Performance :							
a)	- Max. power under 2 h test, (kW) (Natural ambient condition)	Evaluative	Declared value to be achieved with a tolerance of: -5 / +10% for PTO power >26 kW. -7.5/+10% for PTO power ≤ 26 kW or -5 / +10% for engine power >26 kW. -7.5/+10% for engine power ≤ 26 kW	39.5 (D)	39.5 (D)	40.8	39.0	Yes
b)	Power at rated engine speed, (kW)	Non Evaluative	-do-	39.5 (D)	39.5 (D)	39.2	37.5	Yes
c)	Specific fuel consumption corresponding to maximum power, (g/kWh)	Non Evaluative	+ 5%	265 (D)	265 (D)	227	252	Yes
6.1.2	Labeling of tractors (Provision of labeling plate):							
	1) Make	Evaluative	Should conform to the requirements of CMVR along-with declared value of PTO HP	--	TAFE			Yes
	2) Model	Evaluative		--	MF 9500			Yes
	3) Year of manufacture	Evaluative		--	AJ (January, 2018)			Yes
	4) Engine number	Evaluative		--	TSJ327 A24576			Yes
	5) Chassis number	Evaluative		--	MEA8BD83AJ1173391			Yes
	6) Declaration of PTO power, kW	Evaluative		--	39.5			Yes
	7) Specific fuel consumption, g/kWh	Evaluative		--	265			Yes
6.1.3	Literature (Submission to test agency)							
(a)	Operator manual	Evaluative	Provided/ Not Provided	Provided	Provided	Provided		Yes
(b)	Parts Catalogue	Evaluative	Provided/Not Provided	Provided	Provided	Provided		Yes
(c)	Workshop/ Service manual	Evaluative	Provided/Not Provided	Provided	Provided	Provided		Yes

6.2 Conformity with following IS:

		<u>Previous sample</u>	<u>Present sample</u>
i)	Guidelines for declaration of power and specific fuel consumption and labeling of agricultural tractors (First revision) [IS 10273:1987 (Reaffirmed in 2014)]	Conformed	Conforms
ii)	Agricultural tractors – Rear mounted power take-off - Types 1, 2 and 3 (third revision) [IS: 4931-1995 (Reaffirmed in 2014)]	Did not conform	Does not conform
iii)	Agricultural wheeled tractors - Rear mounted three-point linkage: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS 4468 (Part-2):1993 (Reaffirmed in October, 2017)/ISO 730-1:1994]	Did not conform	Does not conform



	<u>Previous sample</u>	<u>Present sample</u>
iv) Drawbar for agricultural tractors – Link type [IS : 12953:1990 (Reaffirmed in October, 2017)]	Conformed	Does not conform
v) Agricultural tractors - Operator's seat technical requirement [IS 12343 –1998 (First revision) (Reaffirmed in 2014)] Tractors having more than 1150 mm rear track width.	Did not conform	Does not conform
vi) Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements (first revision) : [IS 12239 (PT-1)-1996 (Reaffirmed in October, 2017)/ISO 4254-1:1989]	Did not conform	Does not conform
vii) Tractors and machinery for agriculture and forestry – Technical means for ensuring safety Part 2: Tractors (first revision) IS 12239 (PT-2)-1999 (Reaffirmed in 2014)]	Did not conform	Does not conform
viii) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment – Symbols for operator controls and other displays [IS: 6283 (Part-1 & Part-2) –2006 & 2007 (Reaffirmed in March, 2014)/ ISO 3767-2:1991]	Conformed	Conformed
ix) Guide lines for location and operation of operator controls on agricultural tractors and machinery (first revision) (IS: 8133 – 1983) (Reaffirmed in 2014)]	Conformed	Conformed
x) Agricultural Tractor & Machinery Lighting device for travel on public roads (IS: 14683-1999) (Reaffirmed in March, 2014)]	Conformed	Conforms

6.3 Salient Observations:

6.3.1 Laboratory tests:

6.3.1.1 PTO Performance:

- i) The maximum power was recorded as **40.8 & 39.0 kW** in case of previous & present sample respectively against the declaration of **39.5 kW**, which meets the requirement of IS: 12207-2014 with regard to tolerance.
- ii) The specific fuel consumption corresponding to maximum power in case of previous and present sample was measured as **227 & 252 g/kWh** respectively against the declaration of **265 g/kWh**, which meets the requirement of IS: 12207-2014 with regard to tolerance.

6.3.1.2 Three point linkage:

- i) The lateral distance from lower hitch point to center line of tractor does not meet the requirement of IS: 4468 (Part-1)-1997 (Re-affirmed in October, 2017). This should be looked into for necessary corrective action.
- ii) Some of the parameters conform to Cat. I and some of them conform to Cat. II. Keeping in view the spirit of standardization, necessary improvement may be incorporated.

6.3.1.3 Linkage drawbar:

- i) The dimension "B" of drawbar does not meet the requirement of IS: 12953-1990 (Re-affirmed in Oct. 2017). This should be looked into for necessary corrective action.
- ii) Some of the parameters of linkage drawbar conform to Cat. I and some of them conform to Cat. II In view of the spirit of standardization, necessary improvements may be incorporated.

6.3.1.4 Seating requirement:

- i) Width of seat does not meet the requirement of IS: 12343-1998 (Re-affirmed in 2014). This should be looked into for necessary corrective action.
- ii) Vertical distance from SIP to center line of clutch & brake pedal does not meet the requirement of IS: 12343-1998 (Re-affirmed in 2014). This should be looked into for necessary corrective action.

**6.3.1.5 Operator's work place:**

- i) Vertical retainness of foot pedal/ foot step at both sides is not provided. This should be looked into for necessary corrective action.
- ii) Provision for spark arresting device is not provided. This should be looked into for necessary corrective action.

6.3.1.6 Guards:

- i) Provision for power take-off shield is not provided. This should be looked into for necessary corrective action.
- ii) Working clearance for hand control between draft control lever and mud guard does not meet the requirement of IS: 12239 (Part-II)-1999 (Re-affirmed in 2014). This should be looked into for necessary corrective action.

6.3.1.7 Operator's control:

Colour zone for fuel level is not provided as per IS: 6283(Part I & Part II)-1998 (Re-affirmed in 2014). This should be looked into for necessary corrective action.

6.4 Maintenance / Service problems:

No noticeable maintenance or service problems, observed during the test.

6.5 Recommendation with regard to safety on tractor:

The following requirements, inter alia, may be considered for incorporation on the tractor as per relevant Indian Standards:

- i) The lateral distance from lower hitch point to center line of tractor.
- ii) Dimension "B" (width) of drawbar.
- iii) Width of operator's seat.
- iv) Vertical distance from SIP to center line of clutch & brake pedal.
- v) Vertical retainness of clutch pedal/ foot step at both side.
- vi) Provision of spark arresting device in exhaust system.
- vii) Provision of master shield in power take-off.
- viii) Colour zone for engine revolution gauge.
- ix) Working clearance around the draft control lever & Mudguard.

6.6 Adequacy of Literature supplied with machine:**6.6.1** The following literatures were supplied with the test tractor for reference during the test:-

- a) Operator's instruction book for MF 9000 & MF 9500 tractor.
- b) Combined workshop service manual for MF 9000 & MF 9500 (2WD & 4WD) tractor models.
- c) Parts Catalogue for MF 9500 tractor.

6.6.2 The supplied literature was found adequate. Except the following:

- a) Engine oil & filter, air cleaner filter element, coolant and transmission oil scheduling maintenance given in operator's manual does not match with specification submitted by applicant.
- b) The lubricants produced/ marketed by various Indian manufacturers, if deemed suitable, may be recommended for their use in the tractor, shall also be included in the Operator Instruction Book.
- c) These literatures may be brought out in national & other regional languages for the guidance of user's and service personnel.



7. CITIZEN CHARTER

Time frame for Testing & Evaluation as per Citizen Charter	Duration of Test	Whether the Test Report is released within the time frame given in Citizen Charter	Remarks
10 Months	08 Months (September, 2018 to April, 2019)	Yes	None

TESTING AUTHORITY:

C.K. TIJARE
AGRICULTURAL ENGINEER

C.V. CHIMOTE
TEST ENGINEER

J.J.R. NARWARE
DIRECTOR

Test report compiled by **Shri ShivKumar Sharma**, Senior Technical Assistant.

8. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
8.1	6.3.1.2 (i), (ii), 6.3.1.3 (i), (ii), 6.3.1.4 (i),(ii),6.3.1.5 (i),(ii), 6.3.1.6 (i),(ii) & 6.3.1.7	We will study & take appropriate corrective action regarding the non conformity.
8.2	6.5	We shall study & initiate to improve in production.

ANNEXURE -I

TRACTOR RUN HOURS DURING TEST

A.	LABORATORY AND TRACK TESTS:	HOURS
1.	Running-in	--
2.	PTO performance test	6.3
3.	Nominal speed test	0.9
B.	Miscellaneous test and other run hours including idle run, transportation, preparation for test and trial runs.	0.3
	TOTAL:	7.5