व्यावसायिक परीक्षण रिपोर्ट (प्रथम बैच परीक्षण) संख्या / **No**. : T-1582/2110/2021 **COMMERCIAL TEST REPORT (First Batch Test)** : September, 2021 माह / Month

(यह परीक्षण रिपोर्ट 30/09/2026 तक वैध है। / THIS TEST REPORT IS VALID UPTO : 30/09/2026) [ONLINE TESTING]



TAFE, MF 5245 DI 4WD TRACTOR



भारत सरकार

कृषि एवं किसान कल्याण मंत्रालय (कृषि, सहकारिता एवं किसान कल्याण विभाग)

GOVERNMENT OF INDIA

MINISTRY OF AGRICULTURE AND FARMERS WELFARE (DEPARTMENT OF AGRICULTURE, CO-OPERATION AND FARMERS WELFARE)

केन्द्रीय कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

ट्रैक्टर नगर, बुदनी (म.प्र.)-466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

(An ISO 9001: 2015 Certified Institute)

TRACTOR NAGAR, BUDNI (M.P.) - 466 445

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TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test)

(THIS TEST REPORT IS VALID UPTO: 30/09/2026)

"TAFE, MF 5245 DI 4WD" tractor had undergone Initial commercial test at this institute and report number T-1061/1586/2017 was released in January, 2017. Now the applicant has submitted an online application no. 28/2020-21/21 dated 23.11.2020 for 1st batch testing of "TAFE, MF 5245 DI 4WD" tractor. The performance results of the test sample submitted for the batch testing were evaluated as per IS: 12207-2019 and test report is released as under.

Manufacturer : M/s. Tractors and Farm Equipment

Limited, P.O. Box No.3302, Old 35, New

77, Mahatma Gandhi Road,

Nungambakkam, Chennai- 600 034

Location of manufacturing plants

i) M/s Tractors and Farm Equipment Limited, Kalladipatti plant, 10/205, Kalladipatti (P.O.), Pin code – 624 201, Dindigul District, Tamil Nadu

ii) M/s Tractors and Farm Equipment Limited, Doddaballapur plant, Plot

no. 1, Kiadb Industrial area,

Doddaballapur, Bangalore - 561 203

Test requested by : The manufacturer Place of running-in : At applicant's works.

Duration of said running-in, (h):

- Engine : 12 - Transmission : 24

Method of Selection : Due to Covid-19 Pandemic, it was not possible

to conduct the random selection. Nor was possible for applicant to facilitate the random selection. As a last resort applicant requested to allow the direct submission of Test Sample,

which was allowed.

1. SPECIFICATIONS

1.1 Tractor:

Make : TAFE

Model : MF 5245 DI 4WD

Type : Four wheeled, 4WD, General purpose,

Agricultural tractor.

Month & Year of manufacture : 12/20

Chassis number : MEA4DF5FML1295349

Country of origin : India

1.2 Engine:

Make : SIMPSON & Co. Limited Model : T III A SJ 327 –F3

Type : Four stroke, naturally aspirated, water cooled,

direct injection, diesel engine.

Serial number : SJ327A97018

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|-----------|------|------|
| T-1582/21 | 10/2 | 2027 |

TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test)

(THIS TEST REPORT IS VALID UPTO: 30/09/2026)

15. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

15.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluative (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:

| S. No. | Characteristic | | Category (Evaluative / Non Evaluative) | Requirements as per IS: 12207- 2019 | Values declared by the applicant (D) / Requirement (R) | As obser- ved | Whether meets the require- ments (Yes/No) |
|--------|---------------------------------|--|---|---|--|---------------------|---|
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
| 15.1.1 | | Performance : | | | | | |
| a) | 2 h t (Nat | . power under est, (kW) ural ambient lition) | Evaluative | Declared value to be achieved with a tolerance of: ± 5% for PTO power or engine power >26 kW, ± 10% for PTO power or Engine power ≤ 26 kW. | 32.8 (D) | 32.7 | Yes |
| b) | engi | er at rated ne speed, (kW) | Non Evaluative | -do- | 32.8 (D) | 32.0 | Yes |
| c) | corre max (g/k\ | sumption esponding to . power, Wh) | Evaluative | + 10% Max. | 265 (D) | 238 | Yes |
| d) | cran (Nm | | Non Evaluative | ± 8% | 155 (D) | 164.4 | Yes |
| e) | Back perc | k-up torque, ent | Evaluative | 12 percent, min. | 12 (D) 12 (R) | 20.9 | Yes |
| f) | Max | Maximum operating temperature(°C) | | | | | |
| | 1) | Engine oil | Evaluative | The declared value should not exceed the max. value specified by the oil company and the observed value under high ambient condition should not exceed the declaration. | 132 (D) | 110 | Yes |
| | 2) | Coolant | Evaluative | The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration. | 112 (D) | 99 | Yes |
| g) | (g/kV | umption, V h) | Evaluative | Not exceeding 1% of SFC at max. power under High ambient conditions | 2.58 (R) | 0.48 | Yes |
| h) | Smoke level, (m ⁻¹) | | Evaluative | Maximum light absorption coefficient of 3.25 per metre or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR) | 3.25 (R) | 0.30 | Yes |

| T 4500/04 | 4010 | |
|-----------|------|------|
| T-1582/21 | 10/2 | 2027 |

TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test)

(THIS TEST REPORT IS VALID UPTO: 30/09/2026)

15. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

15.1 On the basis of tests conducted the performance results have been summarized as evaluative (mandatory) and non-evaluative (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:

| S. No. | Characteristic | | Category (Evaluative / Non Evaluative) | Requirements as per IS: 12207- 2019 | Values declared by the applicant (D) / Requirement (R) | As obser- ved | Whether meets the require- ments (Yes/No) |
|--------|---------------------------------|--|---|---|--|---------------------|---|
| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
| 15.1.1 | | Performance : | | | | | |
| a) | 2 h t (Nat | . power under est, (kW) ural ambient lition) | Evaluative | Declared value to be achieved with a tolerance of: ± 5% for PTO power or engine power >26 kW, ± 10% for PTO power or Engine power ≤ 26 kW. | 32.8 (D) | 32.7 | Yes |
| b) | engi | er at rated ne speed, (kW) | Non Evaluative | -do- | 32.8 (D) | 32.0 | Yes |
| c) | corre max (g/k\ | sumption esponding to . power, Wh) | Evaluative | + 10% Max. | 265 (D) | 238 | Yes |
| d) | cran (Nm | | Non Evaluative | ± 8% | 155 (D) | 164.4 | Yes |
| e) | Back perc | k-up torque, ent | Evaluative | 12 percent, min. | 12 (D) 12 (R) | 20.9 | Yes |
| f) | Max | Maximum operating temperature(°C) | | | | | |
| | 1) | Engine oil | Evaluative | The declared value should not exceed the max. value specified by the oil company and the observed value under high ambient condition should not exceed the declaration. | 132 (D) | 110 | Yes |
| | 2) | Coolant | Evaluative | The declared value should not exceed the boiling temperature of coolant under the pressurized or otherwise and the observed value under high ambient condition should not exceed the declaration. | 112 (D) | 99 | Yes |
| g) | (g/kV | umption, V h) | Evaluative | Not exceeding 1% of SFC at max. power under High ambient conditions | 2.58 (R) | 0.48 | Yes |
| h) | Smoke level, (m ⁻¹) | | Evaluative | Maximum light absorption coefficient of 3.25 per metre or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR) | 3.25 (R) | 0.30 | Yes |

TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test) (THIS TEST REPORT IS VALID UPTO: 30/09/2026)

| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
|--------|--|-------------------------------|------------------------------|--|-----------------|----------------|------------|
| 15.1.2 | Dro | wbar performand | | 4 | <u> </u> | 0 | <i>'</i> |
| a) | - | kimum drawbar | Non | Minimum 70% of | 22.0 (D) | 30.80 | Yes |
| a) | pull | | Evaluative | static mass with | ` , | 30.60 | 165 |
| | | esponding to 15 | Evaluativo | ballast | 20.51 (R) | | |
| | | cent wheel slip, | | Danast | | | |
| | (kN) | | | | | | |
| b) | | rimum drawbar | Evaluative | Minimum 70% of | 14.0 (D) | 22.94 | Yes |
| | pull | with standard | | static mass of | 13.72 (R) | | |
| | balla | | | tractor without/ | Minimum | | |
| | | esponding to 15 | | standard ballast | | | |
| | | cent wheel slip, | | | | | |
| | (kN) | | | Misis a OO O/ of DTO | 00.0 (D) | 07.0 | ., |
| c) | | rimum drawbar | Evaluative | Minimum 80 % of PTO power as referred in SI | 26.0 (D) | 27.0 | Yes |
| | pow | | | No. i) a) of PTO | | | |
| | kW | ndard ballast, | | performance in case of | 25.8 (R) | | |
| | KVV | | | tractors having total | Minimum | | |
| | | | | static mass > 1500 kg Minimum 75 % of PTO | William | | |
| | | | | 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. | | | |
| d) | | imum | Cyclyotive | The declared value should not exceed the | 132 (D) | 77 | Yes |
| | | smission oil perature (°C) | Evaluative | maximum value | | | |
| | 1 | ` , | | specified by oil company | | | |
| 15.1.3 | | ver lift and hydra | | | | | |
| a) | | | city throughor Evaluative | ut the range of lift, (kN) | | 15.07 | Vos |
| | 1) 2) | At hitch points With the | ⊏vaiuative | ±10 percent The lift capacity should at | 16.0 (D) | 15.97 12.64 | Yes Yes |
| | (2) | standard frame | Evaluative | least be 24 kg/PTO kW. | 8.0 (D) | 12.04 | 168 |
| | | | Lvaldative | and it should be 21.5 kg/engine kW where the | 7.58 Minimum | | |
| | | | | tractor is not provided with | Minimum | | |
| | ļ., | | | a PTO shaft | (R) | | |
| b) | | imum drop in the | Non- | The observed value | 50 (D) | 55 | No |
| | height of the point of application of the force after each 5 | | Evaluative | should not exceed 50 mm | 50 (R) | | |
| | | | | 111111 | Maximum | | |
| | | ites interval for a | | | | | |
| | total | duration of 30 | | | | | |
| | minu | ute, (mm) | | | | | |

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| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
|------------|--|--|-------------------|-----------------------------------|--------------------|------------------|-----------|
| 15.1.4 | Bra | ke performance | at 25 kmph: | | | • | |
| a) | | kimum stopping dis | stance at a for | ce equal to or less than 6 | 600 N on bra | ke pedal v | vith Road |
| | 1) | Cold brake | Evaluative | 10 | 10 (R) | 6.36 | Yes |
| | 2) | Hot brake | Evaluative | 10 | 10 (R) | 6.42 | Yes |
| b) | Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s² (N) | | Evaluative | 600 | 600 (R) | 142 to 183 | Yes |
| c) | brak force peda han | ether parking se is effective at a e of 600 N at foot al(s) or 400 N at d lever, N | Evaluative | Yes / No | Yes (R) | Yes | Yes |
| 15.1.5 | | se measurement | | | T | | |
| a) | nois | timum ambient te emitted by the tor dB(A) | Evaluative | As per CMVR | 88 (R) | 84 | Yes |
| b) | | rimum noise at rator's ear level | Evaluative | As per CMVR | 96 (R) | 94 | Yes |
| 15.1.6 | | plitude of mecha | nical vibrati | ons at : | • | | |
| | 1) | Left foot rest | Non | 100 | 100 (D) | 121 | No |
| | 2) | Right foot rest | Evaluative | 100 microns (max) | 100 (R) | 113 | No |
| | 3) | Seat (with driver seated) | Non Evaluative | 100 microns (max) | 100 (R) | 89 | Yes |
| 15.1.7 | 4) Air | Steering wheel cleaner oil pull o | Non Evaluative | 100 microns (max) | 100 (R) | 124 | No |
| 15.1.7 | | kimum air | Evaluative | 0.25 % (max.) | 0.25 | 0.13 | Yes |
| | clea ove | aner oil pull- r, (%) | | 0.25 % (IIIax.) | (R) | 0.13 | 163 |
| 15.1.8 | | ulage requiremen | | | | | |
| a) | | ss mass of the t | | | T = 0 (D) | L = 0 (D) | |
| | 1) | Two wheel | Non Evaluative | As specified by the | 5.0 (D) 6.0 (D) | 5.0 (D) | Yes |
| b / | 2) | Four wheel | | manufacturer consumption, (km/l): | (ט) ט.ס | 6.0(D) | Yes |
| b) | 1) | Two wheel | Non | As specified by the | 5.35 to | 4.24 | No |
| | ' ' | I WO WITEEL | Evaluative | manufacturer | 5.75 | 4.24 to | 140 |
| | | | | manadataror | (D) | 4.40 | |
| | 2) | Four wheel | | | 5.20 to | 4.20 | No |
| | , | | | | 5.60 | to | |
| | | | | | (D) | 4.31 | |
| c) | | l consumption (| | | | | |
| | 1) | Two wheel | Non | As specified by the | 35.7 to | 45.5 to | No |
| | 0, | F | Evaluative | manufacturer | 45.0 (D) | 47.2 | |
| | 2) | Four wheel | | | 32.0 to | 38.7 | Yes |
| | | | | | 40.0 (D) | to 39.7 | |
| L | | l | | <u> </u> | | 55.7 | |

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| 1 | | 2 | 3 | 4 | 5 | 6 | 7 |
|---------|---------------------|--|--------------------|---|------------------------------|--------------------------------------|----------------------------|
| 15.1.9 | We | tland cultivation | | | | | |
| | follo | aling for the owing emblies: | Evaluative | The identified assemblies should essentially meet the | There should | No ingress of water and / or | |
| | 1) | Clutch assembly | -do- | requirement of IS: 11082. No water ingress in the | be no ingress of water | mud was reported during ICT of | |
| | 2) | Brake housings | -do- | identified assembly given in column-2. | and / or mud | this tractor | V |
| | 3) | Front axle hubs | -do- | If tractor does not meet the | (R) | vide test report no T | Yes |
| | 4) | Engine Oil | -do- | requirements of | | 1061/1586/ | |
| | 5) | Transmission Oil | -do- | wetland cultivation, it may be recommended for dry land operation only. | | 2017. | |
| 15.1.10 | | ety features : | | | | | |
| a) | | ards against ving and hot ts | Evaluative | Belt drives, pullies, hydraulics pipes(as per Part 2) | silencer, S-12239 | Meets the requirements | Yes |
| b) | arra | nting angement | Evaluative | As per CMVR | | Meets the requirements | Yes |
| c) | requ (Tra mor | ating uirements actors having re than 1150 mm r track width) | Non- Evaluative | Should meet the requirements of IS: 12343 (As amended from time to time) | | Meets the requirements | Yes |
| d) | req | chnical uirements PTO shaft | Evaluative | Should meet requirements of IS: 4 amended from time to | | Meets the requirements | Yes |
| e) | | nensions of ee-point linkage | Non- Evaluative | Should meet requirements of IS (Part-I) (As amend time to time) | | Does not meet the requirements | No |
| f) | | ecifications of age drawbar | Evaluative | Should meet requirements of IS 12 amended from time to | | Meets the requirements | Yes |
| g) | Swi | ecifications of inging drawbar | Evaluative | Should meet requirements of IS | | Not fitted | Not appli |
| | (VVI | nerever fitted) | | (Part 3) (As amended from time to time) | | | cable |
| h) | 1) | Maximum travelling speed at rated engine speed in reverse gears, (kmph) | Evaluative | Should not exceed 20 Kmph 14.37 kmph (Meets the requirement) | | Yes | |
| | 2) | Audible warning signal on tractor. | Evaluative | As soon as the travelli in reverse gear reach kmph, an audible signal on tractor activated. | nes to 20 warning | Not applicable | Not appli - cable |

TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test) (THIS TEST REPORT IS VALID UPTO: 30/09/2026)

| 1 | | 2 | 3 | 4 | 4 5 6 | | | |
|---------|-----------------|-----------------------------------|--------------------|---------------------|-------------|---------------------|-----|--|
| 15.1.11 | Lab | elling of tractors (| Provision of I | abelling plat | e): | | ı | |
| | 1) | Make | Evaluative | Should co | • | TAFE | Yes | |
| | 2) | Model | Evaluative | the requirements of | | MF 5245 DI 4WD | Yes | |
| | 3) | Month & Year of | Evaluative | CMVR ald | | 10.0.00 | ., | |
| | | manufacture | | declared | | 12 & 20 | Yes | |
| | 4) | Engine number | Evaluative | PTO in kW | and year | SJ327A97018 | Yes | |
| | | • | | of manufa | | | | |
| | 5) | Chassis number | Evaluative | nume | rical_ | MEA4DF5FML12 | Yes | |
| | | | | MM | YY | 95349 | | |
| | 6) | Declaration of | Evaluative | Digit 01-1 | | 32.8 | Yes | |
| | , | PTO power, | | No.1 for | | | | |
| | | (kW) | | represent t | | | | |
| | 7) | Declaration of | Evaluative | and next tv | | 265 | Yes | |
| | | specific fuel | | the box No | | | | |
| | | consumption, | | will repres | | | | |
| 45.4.40 | D:- | (g/kWh) | | year or man | lulacturing | | | |
| 15.1.12 | | card limit for: | Franking. | T. L. | 05.40 | 04.000 1 | | |
| (a) | | inder bore | Evaluative | To be | 95.18 | 94.989 to 95.012 | Yes | |
| (1-) | | meter, (mm) | NI | specified by | 0.05 '11 | | | |
| (b) | | arance between | Non- Evaluative | Manufactu | 0.25 with | 0.111 to 0.126 | Yes | |
| | | on & cylinder liner kirt, (mm) | Evaluative | rer | new rings | | | |
| (c) | | ton diameter at | Non- | | | 94.884 to | Yes | |
| (6) | | t, mm | Evaluative | | | 94.892 | 163 | |
| (d) | | g end gap (mm): | | | | 04.002 | | |
| (-/ | | comp. ring. | | To be | 1.5 | 0.40 to 0.45 | Yes | |
| | | comp. ring. | Evaluative | specified by | 1.5 | 0.60 to 0.65 | Yes | |
| | | ring. | | Manufacturer | 1.5 | 0.50 to 0.60 | Yes | |
| (e) | | g groove clearance | e (mm): | | | 1 | ı | |
| | | comp. ring | | -do- | Ta | apered ring | | |
| | 2 nd | comp. ring | Evaluative | -do- | 0.25 | 0.063 to 0.072 | Yes | |
| | | ring | | -do- | 0.25 | 0.032 to 0.043 | Yes | |
| (f) | | arance of main end | d bearings, (n | nm): | | | | |
| | Dia | metrical | Evaluative | -do- | 0.75 | 0.115 to 0.140 | Yes | |
| | Cra | nkshaft end float | Evaluative | -do- | 0.75 | 0.25 | Yes | |
| (g) | Cle | arance of big end I | bearings, (mn | n): | • | 1 | | |
| | | metrical | Evaluative | -do- | 0.75 | 0.070 to 0.173 | Yes | |
| | Axia | al | Evaluative | -do- | 0.75 | 0.25 | Yes | |
| (h) | | arance between | Non- | -do- | 0.35 | 0.044 to 0.062 | Yes | |
| | | pin and bush, | Evaluative | | | | | |
| | (mr | | | | | | | |
| (i) | | arance between | Non- | -do- | 1.25 | 0.103 to 0.153 | Yes | |
| | | ter pin & bush, | Evaluative | | | | | |
| | (mn | 1) | | | 1 | | | |

T-1582/2110/2021 TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test)
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------|---|-------------------|---|-----------------|------------|----------------------------|
| 15.1.13 | Literature (Submissio | n to test agen | icy) | | | |
| (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 |
| 15.1.14 | Fitment of Roll Over Protective Structure (ROPS): for tractors having more than 1150 mm rear track width | Evaluative | ROPS should meet the requirement of IS:11821 or OECD code or equivalent International Standard | Not Provided | Not fitted | Not appli - cable |
| 15.1.15 | Standard accessories | Evaluative | Trailer hitch, front tow hook, linkage drawbar should be provided with tractor | Provided | Provided | Yes |
| 15.1.16 | Accessories (Optional) | Non Evaluative | Ballast weights if fitted should meet the requirement of CMVR. | Provided | Provided | Yes |

| 15.2 | CATEGORY OF | BREAKDOWN | IS / DEFECTS :(As per clau | se 5.0 of IS | S-12207- 2019) |
|--------|--------------------------|--|--|----------------|---|
| S. No. | Category of Breakdown | Category (Evaluative / Non- Evaluative) | Requirements as per IS: 12207-2019 | As observed | Whether meets the requirement (Yes/No.) |
| 1. | Critical breakdown | Evaluative | There is no 'critical breakdown' during the course of testing | None | Yes |
| 2. | Major breakdowns | Evaluative | There are not more than 1 major breakdowns and neither of them is of repetitive nature | None | Yes |
| 3. | Minor breakdowns | Evaluative | There are not more than 3 minor defects during the test and the frequency of each is not be more than two | None | Yes |
| 4. | Total breakdowns | Evaluative | In no case, the total number of breakdowns should exceed four that is, (1 major + 3 minor) or 4 minor breakdowns | None | Yes |

15.3 Salient Observations:

15.3.1 Laboratory tests:

15.3.1.1 PTO Performance:

- (i) During PTO performance test, maximum PTO power was recorded as 34.8 kW against the declared maximum PTO power of 32.8 kW & which was not within the tolerance limit as per IS: 12207-2019. On request of applicant, following adjustments were carried out:
- a) Fuel injection timing was checked which was found 14 degree before TDC against the manufacturer fuel setting of "12 +0/-2 degree before TDC". So fuel injection timing was adjusted to 12 degree before TDC

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TAFE, MF 5245 DI 4WD TRACTOR- Commercial (1st Batch Test)

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- b) Valve tappet clearances of intake and exhaust valves were checked which were found 0.30 mm for both intake and exhaust valves against the manufacturer tappet clearances setting of 0.30 mm for both intake and exhaust valves. Hence no adjustments were carried out.
- c) Fuel injector pressure of injectors was checked and it was found as 25.0 MPa i.e within specified limit of 25.0 to 25.8 MPa. Hence no adjustment of injector pressures were carried out.
- (ii) After above adjustment and checks, the maximum PTO power was recorded as 32.7 kW against the declaration 32.8 kW and which is within the tolerance limit of IS: 12207-2019.
- (iii) The backup torque was recorded as **20.9** %.which meets the requirement of IS: 12207-2019.
- (iv) The specific fuel consumption corresponding to maximum power was measured as 238 g/kWh against the declaration of 265 g/kWh, which is within the tolerance limit of IS: 12207-2019.

15.3.1.2 Drawbar performance:

- i) During drawbar performance test, rear tyre creeping over rim was found 95 & 185 mm on LHS & RHS tyres respectively. As result rear RHS tube got punctured due to excessive tyre creeping of 185 mm. Upon the request of manufacturer, the punctured tyre tube was replaced with new one and LHS tyre tube was adjusted to its original position.
- ii) After completion of 10 hour drawbar test, creeping of LHS and RHS rear tyre over the rims was observed as 200 and 100 mm respectively, which was considered on higher side. This should be looked into for necessary corrective action.

15.3.1.3 Hydraulic Performance:

The maximum Cumulative drop in height of lift during load maintenance test was observed was 55 mm which does not meet 50 mm maximum requirement of IS-12207-2019, this should be looked into for necessary corrective action.

15.3.1.4 Mechanical Vibration:

The amplitude of mechanical vibration on various assemblies marked as (*) in Chapter-9 of this test report is on higher side, especially at the foot rest & steering control wheel. This calls for dampening down of vibrations to improve the operational comfort and service life of components.

15.3.1.5 Three-point linkage:

The lateral distance from lower hitch point to center line of tractor and lower hitch point maximum height do not meet the requirements of IS-4468-(Part I)-1997. This should be looked into for necessary corrective action.

15.4 Maintenance / Service Problems:

No noticeable maintenance or service problem other than explained in chapter 13 was observed during the test.

15.5 Recommendation with regard to safety on tractor:

The following requirements, inter alia, may be considered for incorporation on the tractor:

- i) Provision for spark arresting device in exhaust system.
- ii) Provision of PTO shaft master shield.

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- iii) Differential lock may be provided.
- iv) The vertical retainers on both side of the clutch and brake pedal should be provided.
- v) Width of foot step is less than the requirement.

15.6 Adequacy of Literature supplied with machine:

- **15.6.1** The following literature was supplied with the tractor for reference during the testing.
 - Operator instruction book of MF 5245 DI 4WD Tractor Model.
 - ii) Workshop Service Manual of MF 5245 DI 4WD Tractor Model.
 - iii) Parts Book of MF 5245 DI 4WD Tractor Model.
- **15.6.2** The supplied literature was found adequate However, it is recommended that relevant literature may be updated by incorporating the following information:
 - i) The complete engine model name is not specified in the workshop manual.
 - ii) The grade of engine, transmission lub. oil in operator's manual is found different as mentioned in the technical specifications. The change period of them is also shown different. This should be strictly check while submitting the technical specifications and printed literatures.
 - iii) The printed literature has poor quality pictures of various parts and subassemblies of the tractor. For the user convince pictures should be easily identifiable.
- **15.6.3** The literatures should also be brought out in national as well as other regional languages for the guidance of users and service personnel.

TESTING AUTHORITY:

| C.V. CHIMOTE TEST ENGINEER | Ethurmunate |
|---|-------------|
| Y.K.RAO SENIOR AGRICULTURAL ENGINEER | exec) |
| P.K. PANDEY DIRECTOR | Uzn-mog |

Draft test report is compiled by: Nitesh Kumar Verma, Agricultural Engineer.

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|------------------|---|
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16. APPLICANT'S COMMENTS

| Para no. | Our reference | Applicant comments | |
|----------|---------------------------------------|---|--|
| 16.1 | 15.3.1.2 ,15.3.1.3,15.3.1.4,15.3.1.5, | We will study and take appropriate corrective | |
| | 15.5 & 15.6.2 | actions. | |

ANNEXURE- I

TRACTOR RUN HOURS DURING TEST

| A. | LABORATORY AND TRACK TESTS: | HOURS |
|----|--|-------|
| 1. | Running-in | 36.0 |
| 2. | PTO performance test | 17.1 |
| 3. | Power lift and hydraulic pump performance test | 3.8 |
| 4. | Drawbar performance test | 18.7 |
| 5. | Brake test | 2.1 |
| 6. | Noise measurement | 1.7 |
| 7. | Air cleaner oil-pull over test | 3.5 |
| 8. | Mechanical vibration test | 1.0 |
| 9. | Nominal speed test | 1.5 |
| В. | HAULAGE TEST: | 5.4 |
| C. | Miscellaneous test and other run hours including idle run, | 5.5 |
| | transportation, trials and preparation for test | |
| | TOTAL: | 96.3 |