

व्यावसायिक परीक्षण रिपोर्ट (प्रथम बैच परीक्षण)

संख्या/No. : T-1680/2211/2022

COMMERCIAL TEST REPORT (First Batch Test)

माह/Month : October, 2022

[ONLINE TESTING]

(यह परीक्षण रिपोर्ट 31/10/2029 तक वैध है / THIS TEST REPORT IS VALID UPTO 31/10/2029)



GROMAX, TRAKSTAR 540 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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3. SPECIFICATIONS

- 3.1 Tractor:**
- Make : Gromax
 Model : Trakstar 540
 Brand Name : Trakstar
 Type : Rear Wheel Drive, Standard Agricultural Tractor.
 Month & year of manufacture : 03/22
 Chassis number : M9KATACABNVM04121
 Country of origin : India
- 3.2 Engine:**
- Manufacturer's address : M/s Mahindra & Mahindra Limited, Implement Division, Hingna road, Nagpur, 440016 (apa)
 Make : Mahindra (apa)
 Model : GTS2239NA3A
 Type : Four strokes, liquid cooled, direct injection, naturally aspirated, compression ignition, diesel engine.
 Serial number : NNK2DDJ0055
 Country of origin : India
- 3.2.1 Engine speed (rpm), (Manufacturer's recommended production settings):**
- Maximum speed at no load : 2325 to 2525
 - Low idle speed : 750 to 850
 - Speed at maximum torque : 1200 to 1500
- Rated speed, (rpm):**
- For PTO use : 2200
 - For drawbar use : 2200
- 3.3 Cylinder & Cylinder Head:**
- Number : Three
 Disposition : Vertical, Inline
 Bore/stroke, (mm) : 88.9/120
 Capacity as specified by the applicant, (cc) : 2235 (apa)
 Compression ratio : 21.3 (± 1) : 1 (apa)
 Type of cylinder head : Monoblock
 Type of cylinder liners : Wet, replaceable
 Type of combustion chamber : Re-entrant bowl cavity on piston head
 Arrangement of valves : Overhead, inline
- Valve clearance (cold):**
- Inlet valve, (mm) : 0.3 to 0.4
 - Exhaust valve, (mm) : 0.4 to 0.5
- 3.4 Fuel System:**
- Type of fuel feed system : Gravity and force feed
- 3.4.1 Fuel tank:**
- Capacity, (l) : 63.0
 Location : Above clutch housing
 Provision for draining of sediments/ water : Not Provided
 Material of fuel tank : Metallic
- 3.4.2 Water separator : Not provided**
- 3.4.3 Fuel feed pump:**

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| 16.3.2 | Power lift and hydraulic pump performance : | | | | | |
| a) | Maximum lifting capacity throughout the range of lift, (kN): | | | | | |
| | 1) | At hitch points | ±10 percent | The performance shall be within 7.5 of ICT or limit specified under column 3 which-ever is higher | 15.30 | 14.34 |
| 2) | With the standard frame | The lift capacity should at least be 24 kg/PTO kW. and it should be 21.5 kg/engine kW where the tractor is not provided with a PTO shaft | 11.90 | | 9.99 | No |
| b) | Maximum drop in the height of the point of application of the force after each 5 minutes interval for a total duration of 30 min., (mm) | The observed value should not exceed 50 mm | | 45 | 18 | Yes |

17. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

17.1 On the basis of test conducted the performance results have been summarized as evaluative (mandatory) / non-evaluative (non-mandatory) parameters 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 observed | Whether meets the requirements (Yes/No) |
|---------------|---|--|--|---|-------------|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17.1.1 | PTO Performance : | | | | | |
| a) | Maximum power under 2 h test, (kW) (Natural ambient condition) | Evaluative | Declared value to be achieved with a tolerance of: ±5% for PTO power and or engine power >26 kW. ±10% for PTO power and or engine ≤ 26 kW. | 25.5 (D) | 26.4 | Yes |
| b) | Power at rated engine speed, (kW) | Non-Evaluative | -do- | 25.5 (D) | 26.4 | Yes |
| c) | Specific fuel consumption corresponding to maximum power, (g/kWh) | Evaluative | + 10% max. | 264 (D) | 262 | Yes |
| d) | Maximum equivalent crankshaft torque, (Nm) | Non-Evaluative | ± 8% | 149 (D) | 137.1 | Yes |
| e) | Back-up torque, percent | Evaluative | 12 percent | 12.0 (D) 12.0 (R) | 19.63 | Yes |

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| f) | 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. | 130 (D) | 116 | 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. | 119 (D) | 101 | Yes |
| g) | Engine oil consumption, (g/kWh) | Evaluative | Not exceeding 1% of SFC at max. Power under High ambient conditions. | 2.69 Maximum (R) | 0.972 | Yes | |
| h) | Smoke level, m ⁻¹ | Evaluative | Maximum light absorption coefficient of 3.25 per meter or equivalent BOSCH No. 5.2 or 75 Hatridge value (As per CMVR). | 3.25 Maximum (R) | 0.42 | Yes | |
| 17.1.2 Drawbar performance : | | | | | | | |
| a) | Max. drawbar pull with ballasted corresponding to 15 percent wheel slip, (kN) | Non Evaluative | Minimum 70% of static mass of tractor with ballast. | 15.28 (D) 15.34 Minimum (R) | 17.69 | Yes | |
| b) | Max. drawbar pull without ballast corresponding to 15 percent wheel slip, (kN) | Evaluative | Minimum 70% of static mass of tractor without ballast or with standard ballast, as the case may be. | 12.59 (D) 12.56 (R) Minimum | 15.54 | Yes | |
| c) | Maximum drawbar power without ballast, (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. | 20.4 (D) 21.1 (R) Minimum | 22.7 | Yes | |
| d) | Maximum transmission oil temperature, (°C) | Evaluative | The declared value should not exceed the maximum value specified by oil company | 110 (D) | 86 | Yes | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | |

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| 17.1.3 Power lift and hydraulic pump performance : | | | | | | | |
| a) | Maximum lifting capacity throughout the range of lift, (kN): | | | | | | |
| | 1) | At hitch points | Evaluative | Tolerance of $\pm 10\%$ | 15.80 (D) | 14.34 | Yes |
| | 2) | With the standard frame | Evaluative | The lift capacity should at least be 24 kg/PTO kW. and it should be 21.5 kg/engine kW where the tractor is not provided with a PTO shaft. | 6.00 (D) 6.21 (R) Minimum | 9.99 | Yes |
| b) | Maximum drop in the height of the point of application of the force after each 5 minutes interval for a total duration of 30 Minutes, (mm) | | Non Evaluative | The observed value should not exceed 50 mm | 50 (D) Maximum | 18.0 | Yes |
| 17.1.4 Brake performance at 25 kmph: | | | | | | | |
| a) | Maximum stopping distance at a force, equal to or less than 600 N on brake pedal with road ballast, (m): | | | | | | |
| | 1) | Cold brake | Evaluative | 10 | 10 (R) | 6.54 | Yes |
| | 2) | Hot brake | Evaluative | 10 | 10 (R) | 6.56 | Yes |
| b) | Maximum force exerted on the brake pedal to achieve a deceleration of 2.5 m/s ² , (N) | | Evaluative | 600 | 600 (R) Maximum | 178 to 247 | Yes |
| c) | Whether parking brake is effective at a force of 600 N at foot pedal (s) or 400 N at hand lever | | Evaluative | Yes / No | Yes | Yes | Yes |
| 17.1.5 Noise measurement: | | | | | | | |
| a) | Maximum ambient noise emitted by the tractor, dB(A) | | Evaluative | As per CMVR | 88 (R) | 79 | Yes |
| b) | Maximum noise at operator's ear level, dB(A) | | Evaluative | As per CMVR | 96 (R) | 93 | Yes |
| 17.1.6 Amplitude of mechanical vibrations at: | | | | | | | |
| | 1) | Left foot rest | Non Evaluative | 100 microns (max.) | 100 (R) | 166 | No |
| | 2) | Right foot rest | | | | 172 | No |
| | 3) | Seat (with driver seated) | | | | 94 | Yes |
| | 4) | Steering wheel | | | | 104 | No |
| 17.1.7 Air cleaner: | | | | | | | |
| | Maximum air cleaner oil pull over, (%) | | Evaluative | 0.25 (Max.) | 0.20 | | Yes |

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| 17.1.8 | Haulage requirements : | | | | | |
| a) | Gross mass of the trailers, (tones): | | | | | |
| | Two wheel | Non-Evaluative | As specified by the manufacturer | 5.0 (D) | 5.0 | Yes |
| | Four wheel | Non-Evaluative | | 5.0 (D) | 5.0 | Yes |
| b) | Distance travelled / liter of fuel consumption, (km/l): | | | | | |
| | Two wheel | Non-Evaluative | As specified by the manufacturer | 6.0 to 7.0 (D) | 5.91 to 6.08 | No |
| | Four wheel | Non-Evaluative | | 6.0 to 7.0 (D) | 5.99 to 6.17 | No |
| c) | Fuel consumption, (ml/km/tonne): | | | | | |
| | Two wheel | Non-Evaluative | As specified by the manufacturer | 35 to 45 (D) | 31.8 to 33.1 | No |
| | Four wheel | Non-Evaluative | | 35 to 45 (D) | 32.4 to 33.4 | No |

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| 17.1.9 | Wetland cultivation : | | | | | |
| | Sealing for the following assemblies: | Evaluative | The identified assemblies should essentially meet the requirement of IS: 11082. No water ingress in the identified assembly given in column-2. If tractor does not meet the requirements of wetland cultivation, it may be recommended for dry land operation only. | There should be no ingress of water and/or mud (R) | No ingress of water and / or mud was reported during Initial commercial testing of this tractor model tested vide report no. T-1247/1774/2019 released in June, 2019 | Yes |
| | 1) Clutch assembly | -do- | | | | |
| | 2) Brake housings | -do- | | | | |
| | 3) Front axle hubs | -do- | | | | |
| | 4) Engine Oil | -do- | | | | |
| | 5) Transmission Oil | -do- | | | | |

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| 17.1.1 | Safety features : | | | | | |
| a) | Guards against moving and hot parts | Evaluative | Belt drives, pulleys, silencer, hydraulic pipes (As per IS 12239 (Part2)) | Meets the requirement | Yes | |
| b) | Lighting arrangement | Evaluative | As per CMVR | Meets the requirement | Yes | |
| c) | Seating requirements (Tractors having more than 1150 mm rear track width) | Non-Evaluative | Should meet the requirements of IS: 12343 (As amended from time to time) | Does not meet the requirement | No | |
| d) | Technical requirements for PTO shaft | Evaluative | Should meet the requirements of IS: 4931 (As amended from time to time) | Meets the requirement (Except PTO Master shield) | Yes | |
| e) | Dimensions of three-point linkage | Non-Evaluative | Should meet the requirements of IS: 4468 (Part-I) (As amended from time to time) | Does not meet the requirement | No | |
| f) | Specifications of linkage drawbar | Evaluative | Should meet the requirements of IS: 12953 (As amended from time to time) | Meets the requirement | Yes | |

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| g) | Swinging drawbar (wherever fitted) | Evaluative | Should meet the requirement of IS: 12362 (Part 3) (As amended from time to time) | Not provided | Not applicable | |
| h) | 1) | Maximum travelling speed at rated engine speed in reverse gears, kmph | Evaluative | Should not exceed 20 kmph | 11.81 (Meets the requirement) | Yes |
| | 2) | Audible warning signal on tractor | Evaluative | As soon as the travelling speed in reverse gear reaches to 20 kmph, an audible warning signal on tractor shall be activated. The safety aspects about the operation of shuttle technology shall be brought in operation and manufacturer /dealer shall ensure the training on this aspect to operator before the delivery of tractor. | Not fitted | Not applicable |

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| 17.1.11 | 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. <table border="1" style="margin-left: 20px;"> <tr> <td>MM</td> <td>YY</td> </tr> </table> Digit 01 – 12 in box No.1 for MM will represent the months and next two digits in box No.2 for YY will represent the year of Manufacturing. | MM | YY | Gromax | Yes |
| MM | YY | | | | | | | |
| | 2) | Model | Evaluative | | Trakstar 540 | Yes | | |
| | 3) | Month & Year of manufacture | Evaluative | | 03/22 | Yes | | |
| | 4) | Engine number | Evaluative | | NNK2DDJ005 5 | Yes | | |
| | 5) | Chassis number | Evaluative | | M9KATACAB NVM04121 | Yes | | |
| | 6) | Maximum PTO power, (kW) | Evaluative | 25.5 | Yes | | | |

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| 17.1.12 | Discard limit for: | | | | | | |
| (a) | Cylinder bore diameter, (mm) | Evaluative | To be specified by the manufacturer and supported by the printed literature | 89.25 | 88.891 to 88.927 | Yes | |
| (b) | Clearance between piston & cylinder liner at skirt, (mm) | Non-Evaluative | | 0.20 | 0.093 to 0.104 | Yes | |
| (c) | Piston diameter at skirt, (mm) | Non-Evaluative | | 88.150 | 88.814 to 88.820 | Yes | |
| d) | Ring end gap (mm): | | | | | | |
| | - | Top comp. ring. | Evaluative | To be specified by the manufacturer and supported by the printed literature | 2.50 | 0.30 to 0.35 | Yes |
| | - | 2 nd comp. ring. | | | 2.50 | 0.50 to 0.55 | Yes |
| | - | Oil ring. | | | 2.00 | 0.35 | Yes |

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| (e) | Ring groove clearance (mm): | | | | | | |
| | - | Top comp. ring. | Evaluative | To be specified by the manufacturer and supported by the printed literature | --- | Tapered | -- |
| | - | 2 nd comp. ring. | | | 0.40 | 0.071 to 0.075 | Yes |
| | - | Oil ring. | | | 0.20 | 0.037 to 0.046 | Yes |
| (f) | Clearance of main bearings (mm): | | | | | | |
| | - | Diametrical clearance | Evaluative | To be specified by the manufacturer and supported by the printed literature | 0.25 | 0.052 to 0.089 | Yes |
| | - | Crankshaft end float | Evaluative | | 0.60 | 0.08 | Yes |
| (g) | Clearance of big end bearings, (mm): | | | | | | |
| | - | Diametrical | Evaluative | -do- | 0.25 | 0.056 to 0.080 | Yes |
| | - | Axial | Evaluative | -do- | 0.75 | 0.20 to 0.25 | Yes |
| (h) | Clearance between king pin and bush, (mm) | | Non-Evaluative | -do- | 0.50 | 0.095 to 0.153 | Yes |
| (i) | Clearance between centre pin and bush, (mm) | | Non-Evaluative | -do- | 0.43 | 0.229 to 0.275 | Yes |
| 17.1.13 | 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 |
| 17.1.14 | 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 fitted | | Not applicable |
| 17.1.15 | Standard Accessories | | Evaluative | Trailer hitch, front tow hook, linkage drawbar should be provided with tractor | Provided | | Yes |
| 17.1.16 | Accessories (optional) | | Non-Evaluative | Ballast weight, if fitted, should meet the requirement of CMVR | Provided | | Yes |

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| 17.2 CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2019): | | | | | |
|--|--------------------------------|---|---|--------------------|--|
| S. No. | Category of break-downs | 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 five 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 (1 major + 4 minor) or 5 minor breakdowns. | None | Yes |

17.3 Salient Observations:

17.3.1 Laboratory tests:

17.3.1.1 Drawbar Performance Test:

- i) Maximum drawbar pull without ballast corresponding to 15 percent wheel slip was observed as 15.54 kN during the Batch Test as compared to 13.43 kN during ICT of this model and which does not meet the requirement of clause 7.6 of IS: 12207- 2019 with regard to tolerance limit. This should look into for necessary corrective action.
- ii) Maximum drawbar power without ballast was observed as 22.7 kW during the Batch Test as compared to 20.1 kW during ICT of this model and which does not meet the requirement of clause 7.6 of IS: 12207- 2019 with regard to tolerance limit. This should look into for necessary corrective action.
- iii) During ten hours drawbar performance, tyre creeping of LHS and RHS tyre was observed as 20 mm & 35 mm respectively. This should be looked into for necessary corrective action

17.3.1.2 Hydraulic Performance Test:

During the hydraulic performance test, maximum lifting capacity throughout the range of lift with standard frame was observed as 9.99 kN during the Batch Test as compared to 11.90 kN during ICT of this model and which does not meet the requirement of clause 7.6 of IS: 12207- 2019 with regard to tolerance limit. This should look into for necessary corrective action.

17.3.1.3 Mechanical Vibration:

The amplitude of mechanical vibration on various assemblies marked as (*) in Chapter – 10 of this test report is on higher side. This calls for dampening down of vibrations especially on LHS & RHS foot rest & operator's seat to improve the operational comfort and service life of components.

This observation has also been made during Initial Commercial Testing of the tractor model and reported vide Test Report No. T-1247/1774/2019, but no improvement has been made in this regard so far.

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17.3.1.4 Specifications of three point linkage:

Lateral distance from lower hitch point to centre line of tractor **was observed as 365 mm** against the requirement of 359 mm and which does not meet the requirement as laid down in IS:4468 (Part-I) -1997.

This observation has also been made during Initial Commercial Testing of the tractor model and reported vide Test Report No. T-1247/1774/2019, but no improvement has been made in this regard so far.

17.4 Maintenance / Service Problems:

No noticeable maintenance or service problem was observed during the test.

17.5 Recommendation with regard to safety on tractor:

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

- i) The following parameters does not meet the requirements of IS: 8133-2021.
 - a) Safety starting switch to avoid the accidental starting of engine has not been provided as per the above referred standard.
 - b) Fuel shut-off knob does not remain in "STOP" position.
 - c) Identification of hand controls by colour such as Engine STOP knob, engine speed controls, transmission control, parking brake, PTO engaging lever has not been provided as per the above referred standard.
 - d) The hand accelerator lever as per the above referred standard
All of the above should be looked into for necessary corrective action.
- ii) The following parameters does not meet the requirements of IS: 12343:2021.
 - a) Longitudinal distance from seat index point to the centre of steering control wheel has been measured as 640 mm against the requirement of 425 to 525 mm.
 - b) Longitudinal adjustment of the operator's seat has been measured as ± 118 mm against the optimum requirement of ± 100 mm.
 - c) Vertical distance from seat index point to the centre of steering control wheel has been measured as 205 mm against the requirement of 265 to 385 mm.
 - d) Provision of adjustment of driver's seat is provided as 50 to 120 kg against the requirement of 40 to 100 kg.
 - e) Vertical distance from seat index point to the centre of accelerator pedal has been measured as 470 mm against the requirement of 230 to 460 mm.
 - f) Vertical distance from seat index point to the centre of foot rest has been measured as 540 mm against the requirement of 450 to 520 mm..
All of the above should be looked into for necessary corrective action.
- iii) The following parameters does not meet the requirements of IS: 12239 (Part-1) – 2018.
 - a) Vertical retainers at both sides of clutch pedal.
 - b) Vertical retainers at both sides of brake pedal.
All of the above should be looked into for necessary corrective action.
- iv) The following parameters does not meet the requirements of IS: 12239 (Part-2) – 1999 Re-affirmed in January, 2019)..
 - a) Spark arrester in the exhaust system.
 - b) The working clearance between draft control lever position and mud guard was measured as 40 mm against the minimum requirement 70 mm.
 - c) The working clearance between PTO shaft engaging lever and mud guard was measured as 60 mm against the minimum requirement 70 mm.
All of the above should be looked into for necessary corrective action.

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- v) The following parameters does not meet the requirements of IS: 6283 (Part 1 & 2)-1998.
 - a) Grade and frequency of changing the lubricants.
 - b) Engine revolution gauge red zone.
 - c) Symbol of "Vertical movement of implement".
 - d) Green/ Amber zone in fuel level gauge.
 All of the above should be looked into for necessary corrective action.
- vi) In water temperature gauge, Green/ Amber zone has not been provided as per the requirement of IS: 6283 (Part 1 & 2)-1998.
- vii) Master shield of PTO shaft should be provided as per the requirement of IS: 4931-1995 (Re-affirmed in January, 2019).

17.6 Adequacy of Literature supplied with machine:

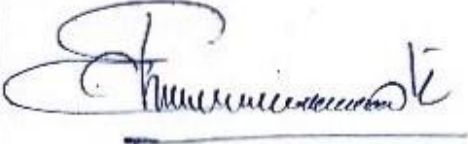
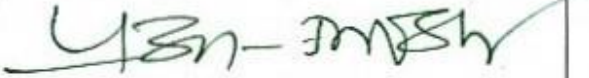
17.6.1 The following literatures were supplied with the tractor for reference during the test:-

- i) Operator Manual for Gromax, "Trakstar 545, Trakstar 531, Trakstar 536, Trakstar 540 & Trakstar 550" tractor models.
- ii) Parts catalogue for Gromax, "Trakstar 545, Trakstar 531, Trakstar 536, Trakstar 540 & Trakstar 550, Trakstar 545DC & Trakstar 550DC" tractor models.
- iii) Service manual for Gromax, "Trakstar 545, Trakstar 531, Trakstar 536, Trakstar 540 & Trakstar 550" tractor models.

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

- i) Fuel saving tips.
- ii) Safe hitch height while using Four-wheel trailer.
- iii) The recommended grade of oil of steering system and its change period as mentioned separately in the technical specification, while it was found common to transmission system.
- iv) Model name(s) of the tractor on cover page has not been specified.

TESTING AUTHORITY:

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

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

| | |
|------------------|--|
| T-1680/2211/2022 | GROMAX, TRAKSTAR 540 TRACTOR -COMMERCIAL (First Batch Test) |
| | THIS TEST REPORT IS VALID UPTO: 31/10/2029 |

18. APPLICANT'S COMMENTS

| Para No. | Our Reference | Applicant's comments |
|----------|--|--|
| 18.1 | 17.3.1.1 [(i), (ii) & (iii)], 17.3.1.2 17.3.1.3, 17.3.1.4 & 17.5 [(i), (ii) (iii), (iv) & (v)] | Observation will be studied and necessary action will be incorporated. |

ANNEXURE-I BRIEF SPECIFICATION OF TRAILER DECLARED AS MATCHING TRAILER BY APPLICANT

| S. No. | Item | Trailer | Trailer |
|--------|---|--|-------------------------|
| 1. | Make | Kisan Engineering Works, MIDC, Awadhan Dhule, (M.S.) | |
| 2. | Model | Kisan 1062 | Not available |
| 3. | Type of trailer | Semi - Trailer | Semi – Trailer |
| 4. | Number of axles | Single | Double |
| 5. | Un laden Weight of Trailer, kg | 1670 | 2800 |
| 6. | Fully laden Weight of Trailer, Tons (Kg) | 4000 | 5500 |
| 7. | Overall dimensions of Trailer, (mm): | | |
| | Overall Width | 1870 | 2140 |
| | Overall Length | 4180 | 5785 |
| | Overall Height | 2175 | 2110 |
| | Wheel Base | Not applicable | 2835 |
| | Wheel Track | 1600 | 1740(Front) &1765(Rear) |
| 8. | Dimension of fitted Platform, (mm): | | |
| | Length | 3040 | 4225 |
| | Width | 1830 | 2135 |
| | Height from ground | 1190 | 1305 |
| 9. | Brakes of Trailer | Not Provided | Not Provided |

ANNEXURE-II

TRACTOR RUN HOURS DURING TEST

| A. | LABORATORY AND TRACK TESTS: | HOURS |
|---------------|--|--------------|
| 1. | Running-in | 45.0 |
| 2. | PTO performance test | 10.7 |
| 3. | Power lift and hydraulic pump performance test | 5.3 |
| 4. | Drawbar performance test | 18.2 |
| 5. | Brake test | 1.8 |
| 6. | Noise measurement | 1.4 |
| 7. | Mechanical vibration test | 1.0 |
| 8. | Nominal speed test | 0.5 |
| 9. | Air cleaner oil pull over test | 3.5 |
| B. | HAULAGE TEST: | 5.1 |
| C. | Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test | 10.8 |
| TOTAL: | | 103.3 |