

व्यावसायिक परीक्षण रिपोर्ट (प्रारंभिक)
COMMERCIAL TEST REPORT (INITIAL)

संख्या/No. : T-1727/2258/2023
माह/Month : April, 2023

Application Reference No. 28/2021-22/122

(यह परीक्षण रिपोर्ट 30/04/2028 तक वैध है / THIS TEST REPORT IS VALID UPTO 30/04/2028)



INTERNATIONAL TRACTORS LIMITED, DI - 32 S1 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

ट्रैक्टर नगर, बुदनी (म.प्र.) 466 445

CENTRAL FARM MACHINERY TRAINING & TESTING INSTITUTE

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

(An ISO 9001 : 2015 Certified Institute)

E-mail: fmti-mp@nic.in

Web site: <http://www.fmttibudni.gov.in>

Telephone: 07564-299003

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| T-1727/2258/2023 | INTERNATIONAL TRACTORS LIMITED, DI 32 S1 TRACTOR - COMMERCIAL (INITIAL) |
| | THIS TEST REPORT IS VALID UPTO: 30/04/2028 |

Manufacturer : International Tractors Limited.
Vill. Chak Gujran, P.O. Piplanwala,
Jalandhar Road,
HOSHIARPUR- 146 022 (Punjab).

| | | |
|---------------------|--|-------------------|
| Month: April | Test Report No.: T-1727/2258/2023 | Year: 2023 |
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सत्यमेव जयते

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Test requested by (applicant) : The manufacturer

Selected for test by : The testing authority
Place of running-in : At Testing Institute

Duration of said running-in, (h):

- Engine : 20.0

- Transmission : 20.0

Method of Selection : The test sample was selected randomly out of five tractors from the production line by the representative of testing authority through online mode.

| Details of tractors made available for random selection | |
|---|-----------------------|
| S. No. | Chassis serial Number |
| 1 | HXKSJ1187676B |
| 2 | HXKSJ1187677B |
| 3 | HXKSJ1187678B |
| 4 | HXKSJ1187679B |
| 5 | HXKSJ1187680B |

1. SPECIFICATIONS

1.1 Tractor:

Make : International Tractors limited
Model : DI - 32 S1
Brand name, if any : None
Type : Rear Wheel Drive, Standard Agricultural Tractor.
Month & year of manufacture : 06/22
Chassis number : HXKSJ1187677B
Country of origin : India

1.2 Engine:

Manufacturer's address : Vill. Chak Gujran, P.O. Piplanwala,
Jalandhar Road,
Hoshiarpur- 146 022 (Punjab).
Make : M/s. International Tractors limited
Model : 3100DL
Type : Four stroke, naturally aspirated, liquid cooled, direct injection, diesel engine.
Serial number : 3100DL24B1143988F3
Country of origin : India

1.2.1 Engine speed (rpm), (Manufacturer's recommended production settings):

- Maximum speed at no load : 2150 to 2250
- Low idle speed : 600 to 700
- Speed at maximum torque : 1100 to 1300

Rated speed, (rpm):

- For PTO use : 2000
- For drawbar use : 2000

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15.3 Transmission gears:

Any visual damage, pitting & chipping : None
of any transmission gear teeth.
Backlash between crown wheel and : 0.32 | Against discard limit of 1.2
pinion, (mm) | mm

15.4 Brakes:

| Description | Initial specified thickness of brake lining, (mm) | Measured thickness of brake disc after test, (mm) | Measured height of lining over oil groove, (mm) | Minimum permissible height of brake lining over oil groove, (mm) |
|-------------|---|---|---|--|
| Left | 4.80 + 0.2 | 4.73 to 4.97 | 0.86 to 1.15 | Wear up to groove depth. |
| Right | 4.80 + 0.2 | 4.95 to 4.97 | 1.08 to 1.12 | |

15.5 Front axle:

Observation

Any marked wear of king pins : **None**
Any marked wear of king pin bushes : **None**
Clearance between king pin and bushes, (mm) : 0.13 to 0.17 | Against the discard limit of 1.0 mm
Condition of bearings for stub axles : Normal
Condition of king pin bearings : Normal
Condition of seals for stub axles and king pins : Normal
Clearance between centre pin and bushes, (mm) : 0.15 to 0.17 | Against the discard limit of 1.0 mm

15.6 Steering system:

Visual condition of the components of complete steering assembly : Normal

15.7 Starter motor & Alternator:

Observation

Presence of soil/oil in housing : None
Condition of bearings and other components : Normal

16. ADJUSTMENTS, DEFECTS, BREAKDOWNS AND REPAIRS

| S.No. | Adjustments/Defects/Breakdowns and Repairs | Tractor run hours |
|----------|--|-------------------|
| --None-- | | |

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:

| Sl. 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. | 21.2 (D) | 20.7 | Yes |

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|---------------|--|----------------|--|-----------------------------------|---|-----|
| b) | Power at rated engine speed, (kW) | Non Evaluative | -do- | 21.2 (D) | 20.7 | Yes |
| c) | Specific fuel consumption corresponding to maximum power, (g/kWh) | Evaluative | + 10% max. | 265 (D) | 268 | Yes |
| d) | Maximum equivalent crankshaft torque, (Nm) | Non Evaluative | ± 8% | 130 (D) | 129.8 | Yes |
| e) | Back-up torque, percent | Evaluative | 12 percent | 12 (D) 12 (R) Minimum | 31.2 | Yes |
| 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. | 132 (D) | 104 | 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. | 125 (D) | 101 | Yes |
| g) | Engine oil consumption, (g/kWh) | Evaluative | Not exceeding 1% of SFC at max. Power under High ambient conditions. | 2.71 (R) Maximum | 0.59 | 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 per meter (R) Maximum | 0.09 | 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. | Not recommended | Ballast not recommended by manufacturer | -- |
| 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. | 11.54 (D) 10.64 (R) Minimum | 12.24 | 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. | 16.96 (D) 16.6 (R) Minimum | 17.8 | Yes |

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|---------------|--|----------------|--|------------------------------|----------------|-----------|
| d) | Maximum transmission oil temperature, (°C) | Evaluative | The declared value should not exceed the maximum value specified by oil company | 130 (D) | 81 | Yes |
| 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 ± 10% | 13.0 (D) | 13.40 | 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. | 10.0 (D) 4.87 (R) Minimum | 8.78 | 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 | 05 | 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) | 7.38 | Yes |
| 2) | Hot brake | Evaluative | 10 | 10 (R) | 7.46 | 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 | 288 to 327 | 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 | 88 dB (A) for >1.5 tonne GVW and 85 dB (A) for <1.5 tonne GVW (as per CMVR) | 88 (R) | 81 | Yes |
| b) | Maximum noise at operator's ear level, dB(A) | Evaluative | 96 (as per CMVR) | 96 (R) | 92 | Yes |
| 17.1.6 | Amplitude of mechanical vibrations at: | | | | | |
| 1) | Left foot rest | Non Evaluative | 100 microns (max.) | 100 (R) | 147 | No |
| 2) | Right foot rest | | | | 108 | No |
| 3) | Seat (with driver seated) | | | | 154 | No |
| 4) | Steering wheel | | | | 275 | No |
| 17.1.7 | Haulage requirements: | | | | | |
| a) | Gross mass of the trailers, (tonne): | | | | | |
| | Two wheel | Non Evaluative | As specified by the manufacturer | 3.0 (D) | 3.0 | Yes |
| b) | Distance travelled / liter of fuel consumption, (km/l): | | | | | |
| | Two wheel | Non Evaluative | As specified by the manufacturer | 2.0 to 8.0 (D) | 6.31 to 6.36 | Yes |
| c) | Fuel consumption, (ml/km/tonne): | | | | | |
| | Two wheel | Non Evaluative | As specified by the manufacturer | 20 to 70 (D) | 52.39 to 52.79 | Yes |

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|---------------|---|---|--|---|--|---|-----|
| 17.1.8 | 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 observed | Yes |
| | 1) | Clutch assembly | -do- | | | | |
| | 2) | Brake housings | -do- | | | | |
| | 3) | Front axle hubs | -do- | | | | |
| | 4) | Engine Oil | -do- | | | | |
| 5) | Transmission Oil | -do- | | | | | |
| 17.1.9 | 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 | | 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 | |
| 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 | 13.31 (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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| 17.1.10 | 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 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. | International Tractors Limited | Yes | |
| 2) | Model | Evaluative | | DI - 32 S1 | Yes | |
| 3) | Month & Year of manufacture | Evaluative | | 06/22 | Yes | |
| 4) | Engine number | Evaluative | | 3100DL24B11439 88F3 | Yes | |
| 5) | Chassis number | Evaluative | | HXKSJ1187677B | Yes | |
| 6) | Maximum PTO power, (kW) | Evaluative | | 21.2 | Yes | |
| 7) | Specific fuel consumption, (g/kWh) | Evaluative | | 265 | Yes | |
| 17.1.11 | Discard limit for: | | | | | |
| (a) | Cylinder bore diameter, (mm) | Evaluative | To be specified by the manufacturer and supported by the printed literature | 100.346 | 100.046 to 100.070 | Yes |
| (b) | Clearance between piston & cylinder liner at skirt, (mm) | Non Evaluative | | 0.45 | 0.134 to 0.150 | Yes |
| (c) | Piston diameter at skirt, (mm) | Non Evaluative | | 99.20 | 99.919 to 99.922 | Yes |
| (d) | Ring end gap (mm): | | | | | |
| - | Top comp. ring. | Evaluative | To be specified by the manufacturer and supported by the printed literature | 2.0 | 0.50 to 0.55 | Yes |
| - | 2 nd comp. ring. | | | 2.0 | 0.95 | Yes |
| - | Oil ring. | | | 2.0 | 0.75 to 0.80 | Yes |
| (e) | Ring groove clearance (mm): | | | | | |
| - | Top comp. ring. | Evaluative | To be specified by the manufacturer and supported by the printed literature | 0.25 | -Tapped- | -- |
| - | 2 nd comp. ring. | | | 0.25 | 0.042 to 0.43 | Yes |
| - | Oil ring. | | | 0.20 | 0.043 to 0.44 | Yes |
| (f) | Clearance of main bearings (mm): | | | | | |
| - | Diametrical clearance | Evaluative | To be specified by the manufacturer and supported by the printed literature | 0.40 | 0.049 to 0.142 | Yes |
| - | Crankshaft end float | Evaluative | | 0.70 | 0.10 | Yes |
| (g) | Clearance of big end bearings, (mm): | | | | | |
| - | Diametrical | Evaluative | -do- | 0.35 | 0.068 to 0.081 | Yes |
| - | Axial | Evaluative | -do- | 1.0 | 0.25 | Yes |
| (h) | Clearance between king pin and bush, (mm) | Non Evaluative | -do- | 1.0 | 0.13 to 0.17 | Yes |
| (i) | Clearance between centre pin and bush, (mm) | Non Evaluative | -do- | 1.0 | 0.15 to 0.17 | Yes |

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|----------------|---|-------------------|--|----------|------------|---------------------|
| 17.1.12 | 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 |
| 17.1.13 | 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 applic- able |
| 17.1.14 | Standard Accessories | Evaluative | Trailer hitch, front tow hook, linkage drawbar should be provided with tractor | | Provided | Yes |
| 17.1.15 | Accessories (optional) | Non Evaluative | Ballast weight, if fitted, should meet the requirement of CMVR | | Not fitted | Not appli- cable |

| 17.2 CATEGORY OF BREAKDOWNS / DEFECTS (As per clause 5.0 of IS:12207-2019): | | | | | |
|---|---------------------------|---|---|----------------|---|
| S. No. | Category of breakdowns | Category (Evaluative / Non Evaluative) | Requirements as per IS: 12207-2019 | As observed | Whether meets the Require- ments (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 Conformity with following IS:

- i)** Guide lines for declaration of power and specific fuel consumption and labeling of agricultural tractors (First revision) [IS10273: 1987 (Reaffirmed in January, 2019)] : **Conforms**
- ii)** Agricultural tractors - Rear mounted power take-off - Types 1, 2 and 3 (third revision) [IS:4931-1995 (Reaffirmed in January, 2019)] : **Conforms**
- iii)** Agricultural wheeled tractors - Rear mounted three-point linkage: Part 1 Categories 1, 2, 3 & 4 (fourth revision) [IS 4468(Part-I):1997/ISO 730-1:1994 (Reaffirmed in 2022)] : **Does not conform**
- iv)** Drawbar for agricultural tractors – Link type [IS 12953:1990 (Reaffirmed in 2022)] : **Conforms**
- v)** Agricultural tractors - Operator's seat technical requirement [IS 12343 - 2021] : **Does not conform**
- vi)** Guide for safety & comfort of operator of agricultural tractors: Part 1 General requirements (first revision): [IS 12239 (PT-1)-2018 /ISO 4254-1:2018] : **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 January, 2019)] : **Does not conform**
- viii)** Guide lines for location and operation of operator controls on agricultural tractors and machinery (first revision) IS: 8133- 2021 : **Does not conform**

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- ix) Tractors and machinery for agriculture and forestry, powered lawn and garden equipment - Symbols for operator controls and other displays Part 2 Symbols for agricultural tractors and machinery [IS:6283 (Part-1)- 2006 and IS: 6283 (Part-2)- 2007 (Reaffirmed in January, 2019)] : Conforms
- x) Agricultural Tractors and Machinery - Lighting device for travel on public roads (IS: 14683-1999) (Reaffirmed in January, 2019)] : Conforms

17.4 Salient Observations:

17.4.1 Laboratory tests:

17.4.1.2 Mechanical Vibration

The amplitude of mechanical vibration on various assemblies marked as (*) in Chapter - 09 of this test report is on higher side. This calls for dampening down of vibrations especially on left foot rest, right foot rest, steering wheel and operator's seat to improve the operational comfort and service life of components.

17.4.1.3 Field performance test:

Ploughing operation:

During ploughing operation with the recommended 2 bottom MB plough (having 170 mm size of bottom), all possible setting was done. However, it was observed that the plough was leaving some areas unploughed during each subsequent pass. This indicates that the plough recommended by the manufacturer was not a matching implement for the tractor. Upon this, the applicant has recommended another 2 bottom MB plough (having 265 mm size of bottom) vide letter Nil dated 22.11.2022 for ploughing operation. Therefore, the field test was carried out with 2 bottom MB Plough (having 265 mm size of bottom).

17.4.1.4 Three point linkage:

The dimension viz. dia. of upper hitch pin hole, dia. & width of ball of lower hitch points & distance from end of power take-off to centre of lower hitch point (lower links in horizontal position) does not meet the requirements of IS:4468 (Part-2) - 1993. This should be looked into for corrective action.

17.4.1.5 Operator's seat:

- i) Provision for adjustment of driver's mass has been specified as 50 to 120 kg against the requirement of 40 to 100 kg.
 - ii) Vertical distance from Seat Index Point to the centre accelerator pedal was measured 470 mm which is not within the range of 230 to 460 mm.
 - iii) Longitudinal distance from Seat Index Point to the centre accelerator pedal was measured 350 mm which is not within the range of 410 to 720 mm.
 - iv) Vertical distance from Seat Index Point to centre of steering control wheel was measured 150 mm which is not within the range of 265 to 385 mm.
 - v) Vertical distance from Seat Index Point to foot rest was measured 545 mm on LHS & 530 mm on RHS mm which is not within the range of 450 to 520 mm.
- Above parameters does not meet the requirement of IS: 12343-2021. This should be looked into for necessary corrective action at production level.

17.4.1.6 Operator's work place:

- i) Vertical retainer has not been provided on inner side of clutch pedal.
 - ii) Width of foot step has been measured as 160 mm against the requirement of 200 mm.
 - iii) Spark arresting device has not been provided in the exhaust system.
- Above parameters does not meet the requirement of IS: 12239 (Part-I) 2018. This should be looked into for necessary corrective action at production level.

17.4.1.7 PTO master shield:

PTO master shield has not been provided on tractor. This should be looked into for necessary corrective action.

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17.5 Specification

- i) The engine coolant and water ratio was “mentioned as coolant : water = 30 : 70 (in diluted form)” in the specification sheet. Whereas, the same has been specified as 95 % DM water and 5% ethylene glycol in Operator’s manual.
- ii) Transmission oil service schedule was mentioned as first change after 1000 hours of operation and subsequently after every 1800 hours of operation in the specification sheet. Whereas, the same has been specified as “first check at 50 hours or 1 month of operation and subsequently after every 250 hours or 3 months of operation and replace after 1000 hours of operation or 12 months” in Operator’s manual.

17.6 Maintenance / Service Problems:

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

17.7 Recommendation with regard to safety on tractor:

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

- i) Following are the working clearance around the controls against the minimum requirement of 70 mm.
 - Position control & draft control lever was measured 40 mm.
 - Operator’s seat and PTO engaging lever was measured 30 mm.
 - Operator’s seat and main gear shifting lever was measured 15 mm.
 - Operator’s seat and range selection lever was measured 55 mm.
 - Range selection lever and main gear lever was measured 50 mm.
- ii) Parking brake lever and body of gear box was measured 50 mm.
- iii) Fuel shut off knob should remains in stop as per the requirement of position IS: 8133-2021.
- iv) The hand accelerator lever, when moved away from the operator (i.e. forward) decreases the engine speed, which does not meet the requirement as laid down in Table - 1 of IS: 8133-2021.
- v) Provision of safety against accidental start of engine.
- vi) Identification of transmission control, engine speed control, PTO engaging lever & parking brake by colour has not been provided as per the requirement as laid down in Table - 5 of IS: 8133-2021.
- vii) Rear wheel mud guards should be provided as per IS: 8133-2021.
- viii) Colour code for engine revolution gauge & hazard warning display should be provided as per IS: 6283 Part - 2 2017.

17.8 Adequacy of Literature supplied with machine:

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



- a) Service manual for International Tractors Limited DI - 32 S1 tractor model.
- b) Operator’s manual for International Tractors Limited DI - 32 S1 tractor model.
- c) Parts catalogue International Tractors Limited DI - 32 S1 tractor model.

17.8.2 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) Engine to PTO speed ratio.
- ii) Hydraulic lifting capacity.
- iii) Recommended gross mass of trailer for haulage operation.
- iv) Safe hitch height while using trailer.

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| T-1727/2258/2023 | INTERNATIONAL TRACTORS LIMITED, DI 32 S1 TRACTOR - COMMERCIAL (INITIAL) |
| | THIS TEST REPORT IS VALID UPTO: 30/04/2028 |

TESTING AUTHORITY:

| | |
|----------------------------------|--|
| C.V. CHIMOTE TEST ENGINEER |  |
| A. K. UPADHYAY DIRECTOR (I/C) |  |

Draft Test Report compiled by: **Vithato Keyho**, Senior Technical Assistant

18. APPLICANT'S COMMENTS

| Para No. | Our reference | Applicant's comments |
|----------|-------------------------|--|
| 18.1 | 17.4.1.3 | We will take necessary actions wherever required. |
| 18.2 | 17.5 (i) & (ii), 17.8.2 | Product literature will be reviewed and necessary correction will be done accordingly. |

ANNEXURE- I

BRIEF SPECIFICATION OF MATCHING IMPLEMENTS AS DECLARED BY APPLICANT

| S. No. | Parameters | MB Plough | Rotavator (dry land & wetland) |
|--------|---------------------------------|-----------------|-----------------------------------|
| 1 | Make | Sonalika | Sonalika |
| 2 | Type | Mounted | Mounted |
| 3 | No. of Bottom / Blades | Two | 30 in 6 flanges |
| 4 | Type of Bottom / Blades | General purpose | Hatchet |
| 5 | Size of Bottom / Blades, (mm) | 265 | 150 x 110 x 8 |
| 6 | Spacing of Bottom /Flanges,(mm) | 250 | 240 |
| 7 | Lower hitch point span, (mm) | 375 | 480 |
| 8 | Mast height, (mm) | 795 | 350 |
| 9 | Overall Dimensions, (mm): | | |
| | Length | 1320 | 1435 |
| | Width | 550 | 970 |
| | Height | 810 | 780 |
| 10 | Gross Mass, (kg) | 145 | 340 |
| 11 | Working width (cm) | 500 | 1180 |

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ANNEXURE-II

BRIEF SPECIFICATION OF MATCHING CAGE WHEEL AS DECLARED BY APPLICANT

| S. No. | Items | Specification |
|--------|---------------------------------|---|
| 1 | Type | Half cage wheel |
| 2 | Outer dia. (mm) | 910 |
| 3 | Width (mm) | 315 |
| 4 | No. & Type of Lugs | 10, straight lugs made of MS angle section welded to angle iron frame |
| 5 | Size of angle section, (mm) | 40 x 40 x 5 |
| 6 | Length of lug, (mm) | 295 |
| 7 | Spacing of lug, (mm) | 280 |
| 8 | Weight of each cage wheel, (kg) | 45 |

ANNEXURE-III

BRIEF SPECIFICATION OF TRAILER DECLARED AS MATCHING TRAILER BY APPLICANT

| S. No. | Item | Trailer |
|--------|---|----------------|
| 1 | Type of trailer | Semi - Trailer |
| 2 | Number of axles | Single |
| 3 | Un laden Weight of Trailer, kg | 450 |
| 4 | Fully laden Weight of Trailer, Tons (Kg) | 3000 |
| 5 | Overall dimensions of Trailer, (mm): | |
| | Overall Width | 1720 |
| | Overall Length | 3140 |
| | Overall Height | 1010 |
| | Wheel Base | Not applicable |
| 6 | Dimension of fitted Platform, (mm): | |
| | Length | 2000 |
| | Width | 1010 |
| | Height from ground | 540 |
| 7 | Brakes of Trailer | Not Provided |

| | |
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ANNEXURE-IV

TRACTOR RUN HOURS DURING TEST

| A. | LABORATORY AND TRACK TESTS: | HOURS |
|---------------|--|--------------|
| 1. | Running-in | 40.0 |
| 2. | PTO performance test | 12.4 |
| 3. | Power lift and hydraulic pump performance test | 0.8 |
| 4. | Drawbar performance test | 12.3 |
| 5. | Turning ability | 0.5 |
| 6. | Location of centre of gravity | 0.3 |
| 7. | Operator's field of vision | -- |
| 8. | Brake test | 1.0 |
| 9. | Noise measurement | 1.5 |
| 10. | Mechanical vibration test | 0.8 |
| 11. | Nominal speed test | 0.8 |
| B. | FIELD TEST: | |
| 1. | MB ploughing | 10.7 |
| 2. | Rotavation | 10.8 |
| 3. | Puddling (including 5.0 hours water proof test) | 15.2 |
| C. | HAULAGE TEST: | 5.4 |
| D. | Miscellaneous test and other run hours including idle run, transportation, trials and preparation for test | 15.4 |
| TOTAL: | | 127.9 |