

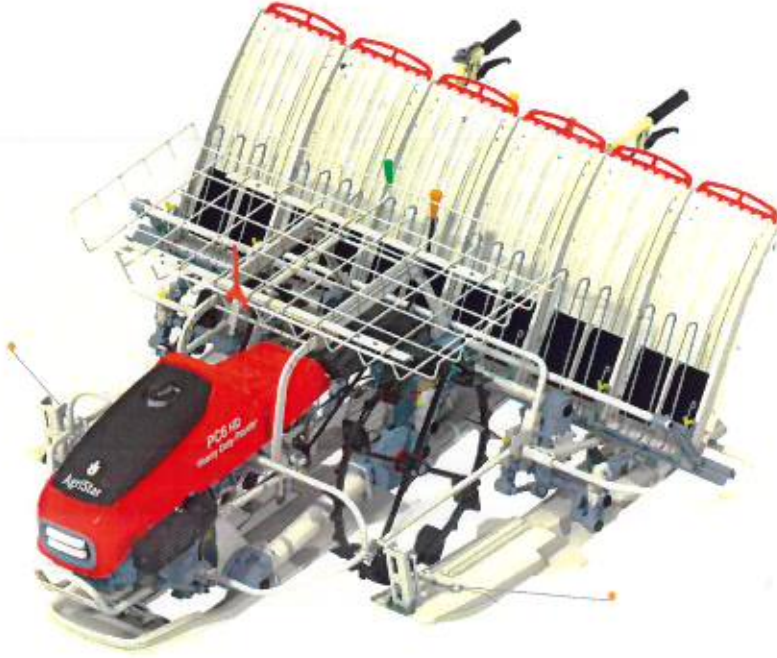


संख्या/No.: Machine 137/511
माह / Month: December 2024

गोपनीय परीक्षण रिपोर्ट
CONFIDENTIAL TEST REPORT

व्यावसायिक परीक्षण रिपोर्ट में परिवर्तित
CONVERTED TO COMMERCIAL TEST REPORT

THIS TEST REPORT IS VALID UPTO 31.12.2031



TAFE LTD., AGRISTAR PC6 HD, PADDY TRANSPLANTER



सत्यमेव जयते

भारत सरकार

GOVERNMENT OF INDIA

कृषि एवं किसान कल्याण मंत्रालय

MINISTRY OF AGRICULTURE AND FARMERS WELFARE

कृषि एवं किसान कल्याण विभाग

DEPARTMENT OF AGRICULTURE AND FARMERS WELFARE

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

बिश्वनाथ चारिआलि, जिला - बिश्वनाथ (असम)

BISWANATH CHARIALI, DIST- BISWANATH, ASSAM, PIN - 784 176

[AN ISO 9001:2015 CERTIFIED INSTITUTION]

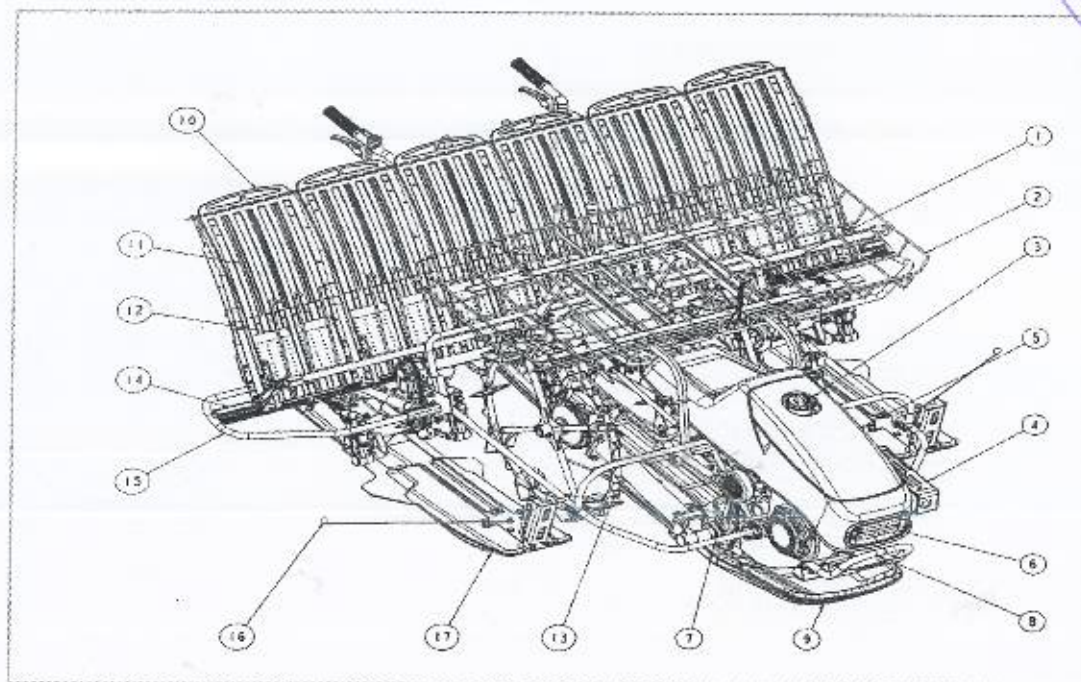
Ph. No. 03715-222094

Website: <https://nerfmtti.nic.in>

E-mail: fmti-ner@nic.in

4.0 SPECIFICATIONS**4.1 General:**

| | |
|--------------------------------------|--|
| Name and address of the manufacturer | : Tractors and Farm Equipment Limited, 77, Nungambakkam High Road, Nungambakkam, Chennai - 600 034 |
| Name and address of the applicant. | : Tractors and Farm Equipment Limited, 77, Nungambakkam High Road, Nungambakkam, Chennai - 600 034 |
| Country of origin | : INDIA |
| Name of machine | : Paddy Transplanter |
| Type | : Self-Propelled, 6 Rows, Walk Behind |
| Make | : TAFE LTD |
| Model | : AGRISTAR PC6 HD |
| Size of Transplanter, mm | : 6 x 300 |
| Machine Serial no. | : A60B0001 |
| Month and Year of manufacture | : 02/2024 |



**Fig. 1 SELF PROPELLED PADDY TRANSPLANTER,
MAKE: TAFE LTD., MODEL: AGRISTAR PC6 HD**

Keywords:

| | | | | | |
|---|-----------------------|----|-----------------------------|----|---------------------|
| 1 | Centre guide | 7 | Air cleaner | 13 | Wheel |
| 2 | Seedling storage tray | 8 | Bumper | 14 | Sliding frame |
| 3 | Fuel cap | 9 | Centre float | 15 | Sliding board guard |
| 4 | Muffler | 10 | Seedling platform extension | 16 | Side guide |
| 5 | Bonnet | 11 | Seedling platform | 17 | Side float |
| 6 | Head light | 12 | Seedling Guide | | |

| | | |
|-----------------|---|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|-------------------------|

Summary of field performance results

Table -2

| Sl. No. | Parameters | Range | |
|---------|---|----------------|--------------|
| 1 | Forward speed, kmph | 2.41 to 2.42 | |
| 2 | Engine speed, rpm | No load | 3371 to 3379 |
| | | On load | 3201 to 3204 |
| 3 | Depth of transplanting, cm | 5.2 to 6.7 | |
| 4 | Travel reduction (%) | 0.68 to 1.07 | |
| 5 | Spacing between rows, cm | 30 | |
| 6 | Number of plants per hill (nos.) | 7 to 8 | |
| 7 | Spacing between hills, cm | 18 | |
| 8 | Total number of hills in 1 m ² | 24 | |
| 9 | Percentages of transplanting faults (in 1 m ²), % | | |
| | - Missed hills | 0 to 0.83 | |
| | - Floating seedlings | 0 to 0.83 | |
| | - Buried seedlings | 0 to 0.83 | |
| | - Damaged seedlings | 0 to 0.83 | |
| | - Total transplanting fault, % | 0 to 0.83 | |
| 10 | Average area covered, ha/h | 0.314 to 0.321 | |
| 11 | Time required to cover 1 ha, h/ha | 3.11 to 3.18 | |
| 12 | Field efficiency, % | 72.0 to 73.6 | |
| 13 | Fuel Consumption | | |
| | | -l/h | 1.20 to 1.30 |
| | | -l/ha | 3.82 to 4.12 |
| 14 | Number of seedling trays consumed per ha | 239 to 254 | |

11.1 Rate of work

The average area covered and time required to cover one hectare area recorded as 0.314 to 0.321 ha/h and 3.11 to 3.18 h, respectively at the forward speed of 2.41 to 2.42 kmph.

11.2 Quality of work

The quality of work was assessed by taking into consideration of the following parameters :-

The depth of transplanting was recorded as 5.2 to 6.7 cm.

The spacing between row to row was recorded as 30 cm.

The number of plants per hill was recorded as 7 to 8

The spacing between hills was recorded as 18 cm.

The total number of hills in 1 m² was recorded as 24.

The percentage of missing hills was recorded as 0 to 0.83.

The percentage of floating seedlings was recorded as 0 to 0.83.

The percentage of buried seedlings was recorded as 0 to 0.83.

The percentage of damaged seedlings was recorded 0 to 0.83.

The total percentage of transplanting faults was recorded as 0 to 0.83.



| | | |
|-----------------|---|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|-------------------------|

11.3 Fuel Consumption

The hourly fuel consumption was recorded as 1.20 to 1.30 l and fuel required for planting of one hectare area was recorded as 3.82 to 4.12 l/ha.

11.4 Labour requirement

One skilled operator is required for continuous operation of machine. One person is required for feeding nursery mats to machine and two persons for handling the nursery trays.

11.5 Ingress of water and/ or mud

After completion of field tests, the transplanter was partially dismantled to check the effectiveness of sealing provided against ingress of water and / or mud in various assemblies / components.

| Sl. No. | Locations | Whether ingress of mud and / or water was observed |
|---------|---------------------------|--|
| 1 | Engine oil | No |
| 2 | Transmission oil | No |
| 3 | Planting transmission oil | No |
| 4 | Planting arm | No |
| 5 | Hydraulic oil | No |

12. EASE OF OPERATION AND ADJUSTMENT

No noticeable difficulties were observed in operation and adjustment during the field test.

13. BREAKDOWNS AND REPAIRS

No noticeable defect or breakdown was observed during the test.

14. COMPONENTS / ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR

14.1 Engine:

The engine and other assemblies were dismantled after 36.3 hours of operation.

14.1.1 Cylinder:

| Cylinder | Cylinder bore dia (mm) | | | | | | Max. Permissible wear limit (mm) |
|----------|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------------------|
| | Top position | | Middle position | | Bottom position | | |
| | Thrust side | Non Thrust side | Thrust side | Non Thrust side | Thrust side | Non Thrust side | |
| 1 | 68.03 | 68.01 | 68.03 | 68.01 | 68.03 | 68.01 | 68.60 |

14.1.2 Piston:

| Piston no. | Piston dia (mm) | | | | Clearance between Piston and cylinder liner at the skirt of the Piston (mm) | Max. Permissible wear limit of Piston diameter (mm) |
|------------|-----------------|-----------------|-------------|-----------------|---|---|
| | At top | | At skirt | | | |
| | Thrust side | Non thrust side | Thrust side | Non thrust side | | |
| 1 | 67.58 | 67.59 | 67.94 | NA | 0.09 | 67.15 |

14.1.3 Ring side clearance:

| Piston Rings | Ring side clearance (mm) | Max. Permissible clearance limit (mm) |
|----------------------|--------------------------|---------------------------------------|
| 1st Compression ring | 0.04 | 0.40 |
| 2nd Compression ring | 0.05 | |
| Oil ring | NA | |

14.1.4 Ring end gap:

| Ring No. | Ring End gap (mm) | | | Max. Permissible End gap limit (mm) |
|----------------------|-------------------|-----------|-----------|-------------------------------------|
| | At top | At middle | At bottom | |
| 1st Compression ring | 0.25 | 0.25 | 0.25 | 0.60 |
| 2nd Compression ring | 0.25 | 0.25 | 0.25 | 0.80 |
| Oil ring | NA | NA | NA | NA |

14.1.5 Big end bearing:

| Bearing no. | Dia of bearing (mm) | Dia of crank pin (mm) | Clearance (mm) | | Max. Permissible clearance limit (mm) | |
|-------------|---------------------|-----------------------|----------------|-------|---------------------------------------|-------|
| | | | Diametrical | Axial | Diametrical | Axial |
| 1 | 30.04 | 29.98 | 0.06 | NA | 0.40 | 0.75 |

Condition of bearing: Normal

14.1.6 Main bearing:

Two nos. of ball bearing 6205 were used

| Bearing No. | Diametrical clearance, (mm) | Crankshaft end float, (mm) | Max. Permissible clearance limit (mm) | |
|-------------|-----------------------------|----------------------------|---------------------------------------|----------------------|
| | | | Diametrical clearance | Crankshaft end float |
| 1 | Ball bearing | 0.13 | NA | NA |
| 2 | Ball bearing | | | |



| | | |
|-----------------|---|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|-------------------------|

14.1.7 Valve guide clearance:

| Valve guide diameter (mm) | | Valve stem diameter(mm) | | Valve guide clearance (mm) | | Max. Permissible wear limit (mm) | |
|---------------------------|---------|-------------------------|---------|----------------------------|---------|----------------------------------|---------|
| Inlet | Exhaust | Inlet | Exhaust | Inlet | Exhaust | Inlet | Exhaust |
| 5.47 | 5.48 | 5.45 | 5.45 | 0.02 | 0.03 | 0.07 | 0.08 |

- 14.2 Any marked sign of overheating of valves : None
Pitting of seat/faces of valves : Normal
Any visual damage of teeth of timing gears : None
Condition of ignition coil & magneto : Normal

14.3 Transmission Gears:

Any visual damage, pitting and chipping of any transmission gear teeth : No



14.4 Planting mechanism:

The following sub-assemblies were dismantled after completion of all the test to check their condition and damage, if any and reported as under:-

| Sl. No. | Sub-assembly | Observations |
|---------|----------------------|--------------|
| 1. | Planting gearbox | Normal |
| 2. | Planting arms | Normal |
| 3. | Planting fingers | Normal |
| 4. | Seedling platform | Normal |
| 5. | Cross feed mechanism | Normal |
| 6. | Float | Normal |
| 7. | Hydraulic systems | Normal |

15. PARAMETERS APPLICABLE FOR QUALIFYING MINIMUM PERFORMANCE CRITERIA

| S. No. | Characteristic | Category (Evaluative / Non Evaluative) | Requirements as per IS: 18718-2024 | Values declared by the applicant (D) / Requirement (R) | As observed | Whether meets the requirements (Yes/No) |
|---|-----------------------------------|--|------------------------------------|--|-------------|---|
| (In the ensuing table, 'D' stands for applicant's declaration, whereas 'R' stands for requirement as per BIS test code) | | | | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15.1 | Engine performance: | | | | | |
| a) | Power at rated engine speed, (kW) | Non Evaluative | To be declared by the manufacturer | 3.3 (D) | 3.53 | Yes |

| | | |
|-----------------|---|---------------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|---------------------------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|-------------|--|----------------|---|-----------------|--------------|-----|
| b) | Maximum operating temperature(^oC) | | | | | |
| 1) | Engine oil | Evaluative | The declared value should not exceed the max. value specified by the oil company. Manufacturer/applicant shall supply the recommendation of oil company along with the application form. | 125 (D) | 112 | Yes |
| 2) | Cylinder liner | Evaluative | Observed value should not exceed the declared value | Not declared | Not recorded | -- |
| c) | Parking brake: | Evaluative | No rotation of drive wheels at a slope of 18 % facing up and facing down. | Yes (R) | NA | -- |
| d) | Air cleaner oil pull over | Evaluative | 0.25 % max. | Yes (R) | NA | -- |
| 15.2 | Noise measurement: | | | | | |
| a) | Maximum ambient noise emitted by the paddy transplanter, dB(A) | Evaluative | 85 | 85 (R) maximum | 76 | Yes |
| b) | Maximum noise at operator's ear level dB(A) | Evaluative | 96 | 96 (R) maximum | 83 | Yes |
| 15.3 | Amplitude of mechanical vibrations at: | | | | | |
| a) | Steering handle grips | Non Evaluative | 100 microns (max) | 100 (R) maximum | 530 | No |
| b) | Gear lever (s): 1) Transmissi on 2) Planting | | | | 220 | No |
| c) | Clutch/brake lever (s)/pedal(s) | | | | 370 | No |
| d) | Accelerator lever/knob | | | | 370 | No |
| e) | Operator's seat | | | | NA | -- |
| f) | Foot rest | | | | NA | -- |



| | | |
|-----------------|---|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|-------------------------|

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|------|---|----------------|---|----------|----------|-----|
| 15.4 | Field requirements: | | | | | |
| a) | Variation in seedling trays consumption per ha., % | Non Evaluative | 5 % max. | | 3.63 | Yes |
| b) | Variation in number of hills per meter of row length, % | Evaluative | 5 % max. | | Nil | Yes |
| c) | Transplanting faults in 1 m ² , % | | | | | |
| | 1. Missed hills, | Evaluative | 5 % max. | | 0.83 | Yes |
| | 2. Floating seedlings | Evaluative | 3 % max. | | 0.83 | Yes |
| | 3. Buried seedlings | Evaluative | 2% max. | | 0.83 | Yes |
| | 4. Damaged seedlings | Evaluative | 2 % max. | | 0.83 | Yes |
| | 5. Total faults | Evaluative | 10 % max. | | 0.83 | Yes |
| d) | Variation in number of seedlings per hill | Non Evaluative | 15 % max. | | 10.26 | Yes |
| e) | Variation in planting depth | Non Evaluative | 15 % max. | | 13.62 | Yes |
| 15.5 | Effectiveness of sealings: | | | | | |
| | a Engine oil | Evaluative | The entry of mud/water should not take place in components/sub-assemblies | | Yes/No | Yes |
| | b Hydraulic oil | Evaluative | | | | Yes |
| | c Transmission oil | Evaluative | | | | Yes |
| | d Clutch assembly | Evaluative | | | | Yes |
| | e Planting gear box oil | Evaluative | | | | Yes |
| | f Planting arms | Evaluative | | | | Yes |
| 15.6 | Safety requirements: | | | | | |
| a | Provision of guard on moving parts | Evaluative | Yes | | Yes | Yes |
| b | Location and direction of exhaust emission to be away from the operator | Evaluative | Yes | | Yes | Yes |
| c | Cover on hot parts | Evaluative | Yes | | Yes | Yes |
| d | Provision of headlights | Non Evaluative | Yes | | Yes | Yes |
| 15.7 | Literature (Submission to test agency) | | | | | |
| a | Operator manual | Evaluative | Provided | Provided | Provided | Yes |
| b | Parts Catalogue | Evaluative | Provided | Provided | Provided | Yes |
| c | Workshop/Service manual | Evaluative | Provided | Provided | Provided | Yes |

| | | |
|-----------------|---|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 HD SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|---|-------------------------|


| 15.8 | Labelling of machine (Provision of labelling plate): | | | | | |
|------|--|------------|---|--------------|-----|--|
| a) | Name of manufacturer | Evaluative | Metallic plate shall be welded / riveted permanently on the machine at place where it can be easily identified. | Provided | Yes | |
| b) | County of origin | Evaluative | | Provided | Yes | |
| c) | Make | Evaluative | | Not Provided | No | |
| d) | Model | Evaluative | | Provided | Yes | |
| e) | Year of manufacture | Evaluative | | Provided | Yes | |
| f) | Engine number | Evaluative | | Not Provided | No | |
| g) | Chassis number | Evaluative | | Provided | Yes | |
| h) | Size of machine | Evaluative | | Provided | Yes | |
| i) | Max. engine power, kW | Evaluative | | Not Provided | No | |
| j) | Specific fuel consumption, g/kWh | Evaluative | | Not Provided | No | |



16. CRITICAL TECHNICAL SPECIFICATIONS

| Sl. No. | Parameters | Specifications | Observation | Remarks |
|---------|--|---|----------------------------------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| 1. | Type of machine | Manually operated walk behind/ self-propelled walk behind/ self-propelled ride-on type. | self-propelled walk behind | Conforms |
| 2. | Working width (mm) | 880 (Min) | 1800 | Conforms |
| 3. | Type of planting mechanism | Finger type for mat type nursery/ cup type for seedling cups. | Finger type for mat type nursery | Conforms |
| 4. | Number of row | 4,6,8 | 6 | Conforms |
| 5. | Row spacing (mm) | 220 to 300 (Adjustable) | 300 (not adjustable) | Does not conform |
| 6. | Average hill spacing (mm) | 120 to 250 (Adjustable) | 140-180 (adjustable) | Conforms |
| 7. | Type and number of floats | Wooden plank/metallic sheet/PVC Sheet/hollow plastic. | hollow plastic, 3 | Conforms |
| 8. | Angle of mat sliding board, (degrees) | 45 to 70 (Adjustable) | 60 (adjustable) | Conforms |
| 9. | Material of planting fork/fingers/tweezers | Stainless steel type 4 and above. | Stainless steel | Conforms |
| 10. | Provision for adjusting the row spacing | Must be provided. | Not provided | Does not conform |

| | | |
|-----------------|--|-------------------------|
| Machine 137/511 | TAFE LTD., AGRISTAR PC6 IID SELF PROPELLED PADDY TRANSPLANTER | COMMERCIAL (INITIAL) |
|-----------------|--|-------------------------|

| 1 | 2 | 3 | 4 | 5 |
|-----|--|---|--|------------------|
| 11. | Provision for adjusting depth of planting | Must be provided. | Provided | Conforms |
| 12. | Provision for adjusting hill spacing | Must be provided. | Provided | Conforms |
| 13. | Provision for adjusting no of plants per hill | Must be provided. | Provided | Conforms |
| 14. | Provision for area recorder | Must be provided. | Not provided | Does not conform |
| 15. | Marking/labelling  | The labelling plate should be riveted on the body of machine having name & address of manufacturer, country of origin, make, model, year of manufacture, serial number, size, required size of prime mover kW/HP. | Provided except make & required size of prime mover kW/HP. | Does not conform |
| 16. | Literature | Operator manual, Service manual and Parts catalogue should be provided. | Provided | Conforms |

17. COMMENTS AND RECOMMENDATIONS

- 17.1 Labelling plate of machine should be provided as per IS 18718: 2024. This should be looked into for corrective action.
- 17.2 Provision for adjusting row to row spacing should be provided. This should be looked into for corrective action.
- 17.3 Fuel tank was found rusted from inside during final specification checking. This should be looked into for quality improvement.
- 17.4 The amplitude of mechanical vibration marked as (*) on the relevant chapter are on drastically higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affects the useful life of the machine components. In view of above, this deserved to be given top priority for corrective action.
- 17.5 The engine was not marked with Manufacturer's name or trade-mark, Rated power, Rated speed and type of fuel used which does not fulfil the requirement of IS 7347-1974 (Amended 2021). This may be looked into.
- 17.6 **Technical literature:**
Operator manual, Service Manual and Parts Catalogue was provided along with the machine during the course of testing. It is further recommended to bring out these manuals in Hindi language also.

TESTING AUTHORITY

(M.R. PATIL)
SENIOR AGRICULTURAL ENGINEER

(P. KAMALABAI)
DIRECTOR

Draft test report compiled by - **Shri. Rahul**
Sr. Technical Assistant

18. APPLICANT'S COMMENTS

| Para No | Our Reference | Applicant's Comments |
|---------|---------------|--|
| 18.1 | 17.1 | Labelling plate will be modified to meet the requirement of IS 18718: 2024. |
| 18.2 | 17.2 | Difficult to provide provision of adjusting row to row spacing as it will require a lot changes in current layout of the machine, will be considered in the next upgrade of the machine. |
| 18.3 | 17.3 | Fuel Tank (10L capacity) made of plastic will be introduced shortly as a part of continuous improvement in the machine. |
| 18.4 | 17.4 | The amplitude of vibration will be analysed and corrective action will be taken to reduce the same. |
| 18.5 | 17.5 and 17.6 | Will be considered and take appropriate corrective action. |



ANNEXURE-I

CONDITION OF FIELD AND NURSERY

| | | |
|-----------------|---|---|
| Place of test | : | Vill. - Arasamangalam, Villupuram, Tamil Nadu |
| Name of crop | : | Paddy |
| Type of soil | : | Medium |
| Variety of crop | : | Samba-5204 |
| Gear used | : | Transplanting |

| Sl. No. | Parameters | Trial | | | |
|---------|---|-----------------------|------------|------------|------------|
| 1 | Date of test | 27.08.2024 | 28.08.2024 | 29.08.2024 | 30.08.2024 |
| 2 | Condition of field :- | | | | |
| i | Type of soil | Medium | | | |
| ii | Previous treatment | Puddling by Rotavator | | | |
| iii | Interval between last puddling and transplanting (days) | 02 | 02 | 02 | 02 |
| iv | Depth of puddle (cm) | 15.6 | 15.5 | 15.8 | 15.7 |
| v | Depth of standing water over puddle (cm) | 3.4 | 3.1 | 3.2 | 2.8 |
| 3 | Condition of nursery :- | | | | |
| i | Variety of paddy | Samba-5204 | | | |
| ii | Type of soil of seed bed | Medium | | | |
| iii | Area of tray (m ²) | 0.158 | | | |
| iv | Age of nursery, days | 17 | 18 | 19 | 20 |
| v | Leaf stage (No. of leaf) | 4 | 3 | 3 | 3 |
| vi | Height of seedlings (cm) | 15 | 15 | 16 | 16 |
| vii | Length of root (cm) | 5.5 | 5.5 | 7.4 | 6.4 |



ANNEXURE-II

FIELD PERFORMANCE RESULTS

| | |
|-----------------|---|
| Place of test | : Vill. - Arasamangalam, Villupuram, Tamil Nadu |
| Name of crop | : Paddy |
| Type of soil | : Medium |
| Variety of crop | : Samba-5204 |
| Gear used | : Transplanting |

| Sl. No. | Parameters | No. of trials | | | |
|---------|--|---------------|------------|------------|------------|
| | | 27.08.2024 | 28.08.2024 | 29.08.2024 | 30.08.2024 |
| 1 | Date of test | | | | |
| 2 | Duration of test (h) | 5.00 | 7.00 | 3.50 | 4.00 |
| 3 | Field length (m) | 60.8 | 63.0 | 63.0 | 70.0 |
| 4 | Engine speed (rpm) | | | | |
| | No. load | 3379 | 3371 | 3379 | 3378 |
| | On load | 3201 | 3202 | 3201 | 3203 |
| 5 | Average forward speed (kmph) | 2.41 | 2.42 | 2.42 | 2.42 |
| 6 | Average travel reduction (%) | 0.70 | 1.07 | 0.78 | 0.68 |
| 7 | Average depth of transplanting, cm | 5.2 | 6.1 | 6.1 | 6.7 |
| 8 | Average spacing between rows, cm | 30 | 30 | 30 | 30 |
| 9 | Average number of plants per hill | 8 | 8 | 8 | 7 |
| 10 | Average spacing between hills, cm | 18 | 18 | 18 | 18 |
| 11 | Average number of hills per m ² | 24 | 24 | 24 | 24 |
| 12 | Transplanting faults in one m ² (%) | | | | |
| | Missed hills | Nil | Nil | 0.83 | Nil |
| | Floating seedling | Nil | Nil | Nil | 0.83 |
| | Buried seedling | 0.83 | Nil | Nil | Nil |
| | Damaged seedlings | Nil | Nil | Nil | 0.83 |
| | Total | 0.83 | Nil | 0.83 | 0.83 |
| 13 | Area covered (ha/h) | 0.316 | 0.321 | 0.315 | 0.317 |
| 14 | Average time required to cover 1 ha (h) | 3.16 | 3.11 | 3.17 | 3.15 |
| 15 | Fuel consumption | | | | |
| | -(l/h) | 1.28 | 1.22 | 1.30 | 1.25 |
| | -(l/ha) | 4.05 | 3.79 | 4.12 | 3.94 |
| 16 | No. of trays consumed per ha | 239 | 252 | 248 | 254 |