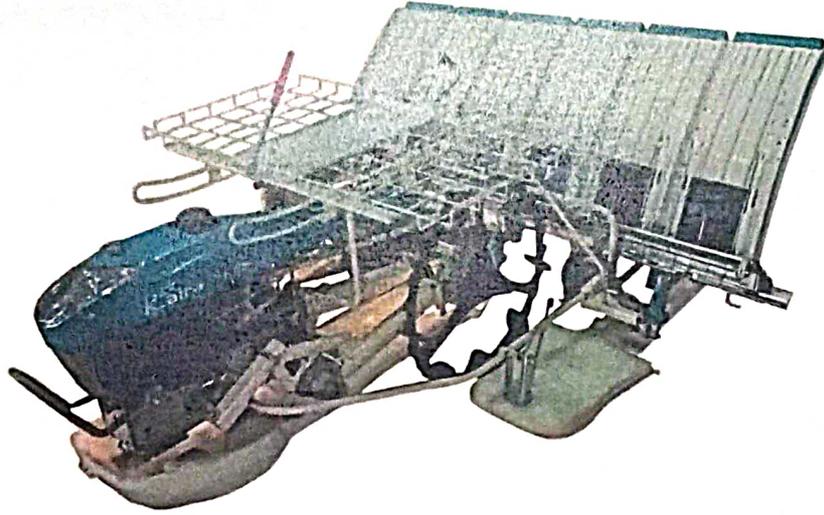




THIS TEST REPORT IS VALID UPTO 31/10/2026



**KAIRA RICE TRANSPLANTER, MODEL: LC-06W  
SELF PROPELLED WALK BEHIND TYPE**



भारत सरकार  
GOVT OF INDIA

**कृषि एवं किसान कल्याण मन्त्रालय**

**MINISTRY OF AGRICULTURE & FARMERS WELFARE**

**कृषि, सहकारिता एवं किसान कल्याण विभाग**

**DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE**

**उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान**

**NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE**

**विश्वनाथचारिआलि, जिला-विश्वनाथ(असम)**

**BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176**

**[AN ISO 9001:2015 CERTIFIED INSTITUTION]**



- A nursery tray having size 580 x 280 x 25 mm was laid down over leveled bed. It filled by the mixture of soil up to top followed by compacting and leveling.
- Then sprouted seeds were broadcast uniformly over the prepared seed bed and covered with a thin layer of soil. Followed by a thin cover of paddy straw. Watering twice a day done to irrigate, first by sprinkler and after the germination of seeds by flooding the bed. It was irrigated at regular interval up to its complete growth.

## 5. SPECIFICATIONS

### 5.1 General :

Name and address of the manufacturer	:	<b>M/s Kaira Manufacturer Company Limited, Room 1101, Building 7 (B1) No.666 Nanlinzhong Rd, Nanxun District, Huzhou City, Zhejiang Province, China</b>
Name and address of Indian Importer	:	<b>M/s Kaira Agros, No-13, Murgun Kovil Main Road, Kundrathur, Chennai-600069, Tamilnadu, India</b>
Name and address of the applicant.	:	<b>M/s Kaira Agros, No-13, Murgun Kovil Main Road, Kundrathur, Chennai-600069, Tamilnadu, India</b>
Name of machine	:	Rice Transplanter
Type	:	Self-Propelled, 6 rows, Walk Behind
Make	:	Kaira
Model	:	LC-06W
Size of Transplanter, mm	:	6 x 300
Serial no.	:	07E300279
Month & Year of manufacturer	:	2020
Country of origin	:	China

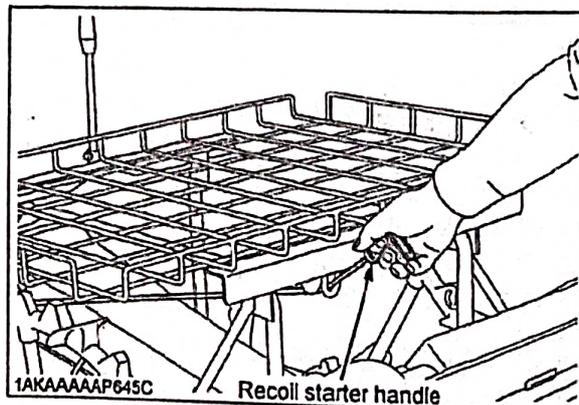
### 5.2 Details of Prime mover :

Type	:	Single cylinder, Air cooled, four stroke, petrol Engine
Make	:	Kaira
Model	:	SPE175
Serial number	:	210500211
Year of manufacture	:	2021 05
Country of origin	:	China
Rated power in rating test of engine , kW (As observed)	:	2.55
Rated speed, rpm (apa)	:	3600 ± 50
Maximum speed at no load, rpm(apa)	:	3750 ± 100
Low idle speed, rpm(apa)	:	1500 ± 100
Recommended rated engine speed for field operation, rpm (apa)	:	3200 ± 50

#### 5.2.1 Cylinder

Number	:	One
Disposition	:	Inclined
Bore/stroke (mm)	:	66/50

Capacity (cc)	:	171
Compression ratio	:	8.5:1
Type of cylinder liner	:	Dry
Type of cylinder head	:	I-head
Arrangement of valve	:	Over head
Valve clearance in cold condition (mm)	:	
- Inlet valve	:	0.15
- Exhaust valve	:	0.15
Number of compression ring	:	02
Number of oil ring	:	01
<b>5.2.2 Fuel supply system :</b>		
Type of fuel feed	:	Gravity
Type of fuel filter	:	Cartridge type
Capacity of fuel tank (litre)	:	
- As observed	:	5.0
Location of fuel tank	:	Above the engine
Provision for water separator	:	Provided
Type of ignition device	:	Electromagnetic
<b>5.2.3 Carburettor:</b>		
Type	:	Float with butterfly
Make	:	YINBA
Product identification no	:	210425
<b>5.2.4 Governor</b>		
Make (apa)	:	Kaira
Type	:	Centrifugal, variable speed
Governed range of engine speed, rpm	:	1400 to 3800
Rated engine speed, rpm	:	3600 ± 50
<b>5.2.6 Air Intake System</b>		
<b>5.2.6.1 Pre-cleaner</b>	:	Not provided
<b>5.2.6.2 Air cleaner</b>		
Type of air cleaner	:	Dry (Foam type)
Recommended grade of oil, (apa)	:	NA
Recommended service schedule, h (apa)	:	Clean every 50 hrs. operation
Location	:	LHS of engine



10	Planting arm shaft	110*	120*
11	Quantity of seedling adjusting lever	110*	230*
12	Seedling tray	170*	200*
13	Float		
	Left	120*	170*
	Middle	110*	150*
	Right	150*	140*
14	Engine mounting base	200*	220*

\*the amplitude of Mechanical Vibration is on higher side.

### 11. TURNING ABILITY

Characteristics	LHS	RHS
Minimum turning diameter (m):	1.31	1.35
Minimum clearance diameter (m):	3.02	3.10

### 12. FIELD PERFORMANCE TEST

Field test were conducted for 36.59 hours. Field were puddle by using tractor operated rotavator & Tractor full cage wheel followed by leveler. Total six test trials were conducted in sandy loam soil. Conditions of test plot and nursery & the field performance results are given Annexure-I & Annexure-II and summarized in table-1 & table-2

#### Summary of condition of field and nursery

Table-1

Sl. No.	Parameters	Range
<b>Condition of field</b>		
1	Type of soil	Sandy loam
2	Interval between last puddling and planting, hours	01 to 02
3	Depth of puddle, cm	15.75 to 20.75
4	Depth of standing water over puddle, cm	2.4 to 3.2

<b>Condition of nursery</b>		
1	Variety of paddy	ADT-36
2	Type of seed bed soil	Sandy loam
3	Area of each tray, m <sup>2</sup>	0.162
4	Age of nursery, days	18 to 20
5	Leaf stage (no. of leaves)	1.8 to 2.6
7	Length of root (cm)	2.2 to 4.5

#### Summary of performance results

Table-2

Sl. no.	Parameters	Range
1	Average forward speed, kmph	2.22 to 2.38
2	Engine speed, rpm	
	No. load	3310 to 3377
	On load	3206 to 3297

3	Average depth of transplanting, cm	2.72 to 3.40
4	Average travel reduction (%)	-0.22 to 2.12
5	Average spacing between rows, cm	29.6 to 30.0
6	Average number of plants per hill (nos.)	4.13 to 5.67
7	Average spacing between hills, cm	17.27 to 17.93
8	Average total number of hills in 1 m <sup>2</sup>	23.4 to 24.0
9	Percentages of transplanting faults (in 1 m <sup>2</sup> )%	
	- missed hills	0.84 to 2.56
	- Floating seedlings	0.84 to 0.85
	- Buried seedlings	Nil
	- Damaged seedlings	Nil
	- Total transplanting fault %	0.84 to 2.56
10	Average area Covered ha/h	0.2550 to 0.3114
11	Time required to covered 1 ha (h)	3.21 to 3.92
12	Fuel consumption	
	- l/h	0.910 to 1.12
	- l/ha	3.07 to 4.36
13	Number of seedling trays consumed per ha	154 to 187

**12.1 Rate of work**

The average area covered and time required to cover one hectare area recorded as 0.2550 to 0.3114 ha/h and 3.21 to 3.92h respectively at the forward speed of 2.22 to 2.38 kmph.

**12.2 Quality of work**

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

The average depth of transplanting was recorded as 2.72 to 3.40 cm.

The spacing between row to row was recorded 29.6 to 30.0 cm.

The average number of plants per hill was recorded as 4.13 to 5.67.

The average spacing between hills was recorded as 17.27 to 17.93 cm

The average total number of hill in 1 m<sup>2</sup> was recorded as 23.4 to 24.0.

The average percentage of missing hills was recorded as 0.84 to 2.56.

The average percentage of floating seedlings was recorded as 0.84 to 0.85.

The average percentage of buried seedlings was recorded as Nil.

The average percentage of damaged seedlings was recorded Nil.

The total percentage of transplanting faults was recorded as 0.84 to 2.56.

**12.3 Fuel consumption**

The hourly fuel consumption was recorded as 0.910 to 1.12 lit and fuel required for planting of one hectare area was recorded as 3.07 to 4.36 lit.

**12.4 Labour requirement**

One skilled operator's 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.

**12.5 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.

## 16. SUMMARY OF OBSERVATIONS, COMMENTS AND RECOMMENDATIONS

### 16.1 Engine rating test

The average rated power in rating test of engine was observed as 2.55 kW against manufacturers declared power as 3.0 kW. It should be looked into metter.

The specific fuel consumption at average rated power in rating test was observed as 367 g/kWh. against manufacturers declared power as 390 g/kWh.

#### Governing test

Momentary speed change in percentage of rated speed was observed as 4.31%.

Permenent speed change in percentage of rated speed was observed as 4.14%.

### 16.2 Noise level

Noise level at operator's ear level was recorded as 86 dB(A), and noise level at bystander level was recorded 74 dB (A). which is well within the maximum and danger limit of 85dB(A)/ 90 dB(A) respectively specified for contineous exposure of 8 hours.

### 16.3 Mechanical Vibration

The aplitude of mechanical vibration marked as (\*) on the relevant chapter are on drasfically higher side. It is not just directly concerned with operator's health safety and comfort, but also adversely affect the useful life of the components. In view of above, this deserved to be given top priority for corrective action.

### 16.4 Components / assembly inspection

The engine was dismantled after 47.84 hours of operation and wear of critical components were observed to be within the limits.

The main gear box, planting box, planting arm drive mechanism and bearings were dismantled after 37.59 hours of operation and found in satisfactory working condition.

### 16.5 Safety Provisions

The machine has the following safety provisions.

A front bumper.

Front and rear bonnet above the engine and gear box.

Drive belt protective covers.

A slip clutch (torque limiter) inside the planting arm case to protect the planter drive mechanism.

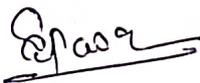
A jump clutch provided at the end of propeller shaft for planting case drive.

### 16.6 Ease of operation and adjustments

1. All the controls, which are required to be used frequently are within the easy reach of the operator.
2. The handling of machine was easy and stable and the operator can work continuously for about two hours.
3. The planting depth, hill spacing and number of seedling per hill can be adjusted quickly.
4. The seedling carrier is provided just above the engine for holding nursery trays. If the carrier is loaded fully with mat trays operator's vision was obstructed.
5. No other operational difficulty was noticed during the operation of the transplanter even in the smaller fields.
6. One touch hydraulic swing system is provided to enable the operator to cross over the bunds and while turning the machine (even with full load) in the field.
7. The machine is fitted with rubberized steel wheels and is stable in the field as well as on the road transportation.
8. Two folding type markers are provided and can be operated by the operator while planter is in motion. One centre marker at bonnet is provided to guide the operator to drive planter in straight direction.
9. The machine is provided with reverse field speed so that planting at corners / missing area can easily be done

- 16.7 General Comments**  
 Make & model of Hydraulic pump is not specified. It should be looked into.  
 Maximum permissible wear limit of main bearing & valve guide clearance is not specified. It **Must** be specified.  
 Horn is not provide. It should be provided.
- 16.8** The particulars provided on the marking/labeling plate are not adequate. It is therefore recommended to provide the following terms.
- I. Make
  - II. Year of manufacture
  - III. Manufacture's address
  - IV. Size
  - V. Required size of prime mover kW/hp
- 16.9 Technical literature:**  
 Operator cum Service Manual & Parts Catalogue was provided along with the machine during the course of testing. It is further recommended to bring out these manuals in hindi and other vernacular languages as per IS: 8132-1999.

**TESTING AUTHORITY**

  
**(S.G.PAWAR)**  
**AGRICULTURAL ENGINEER**

  
**(J.P. MANDAL)**  
**SENIOR AGRICULTURAL ENGINEER**

  
**(K.K. NAGLE)**  
**DIRECTOR**

Draft test report compiled by - **Shri. Khagendra Bora,**  
**Sr. Technical Assistant**

**17. APPLICANT'S COMMENTS**

Para No	Our Reference	Applicants Comments
17.1	--	we will look into further product