

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



संख्या/No.: Machine 140/514  
माह / Month: December 2024

THIS TEST REPORT IS VALID UPTO 30.12.2031



KASHI, KPW 170FP, POWER WEEDER



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

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Machine 140/514

KASHI, KPW 170FP  
POWER WEEDERCOMMERCIAL  
(INITIAL)

## 4. SPECIFICATIONS

## 4.1 General:

|                                  |  |
|----------------------------------|--|
| Make                             | : KASIII   |
| Model                            | : KPW 170 FP   |
| Name and address of manufacturer | : M/s. Chongqing Haofa Machinery Manufacturing Co., Ltd., Sanjiao Town, Youngchuan District, Chongquin - 400050, CHINA |
| Name and address of applicant    | : M/s. SB AGRO, 204 SDS Chambers, Bhaistan Road, Raipur CG - 492001  |
| Name of machine                  | : Power weeder   |
| Type of machine                  | : Self propelled, Walk behind  |
| Working size of machine (mm)     | : 1270   |
| Year of manufacture              | : 2024   |
| Serial no. of machine            | : 20240002   |


## 4.2 Details of prime mover:

|                                   |  |
|-----------------------------------|--|
| Make                              | : Chongqing  |
| Model                             | : KB170F   |
| Type                              | : 4 stroke, Single cylinder, Air cooled, Spark Ignition engine |
| Year of manufacture               | : 2023   |
| Serial number                     | : 240309837  |
| Country of origin                 | : CHINA  |
| Recommended high idle speed (rpm) | : $3800 \pm 100$   |
| Recommended low idle speed (rpm)  | : $1400 \pm 100$   |
| Recommended rated speed (rpm)     | : 3600   |
| Rated power observed (kW)         | : 3.17   |
| Rated power declared (apa) (kW)   | : 4.50   |



**12.3 Adequacy of power of prime mover:**

The power of prime mover was found adequate.

**12.4 Wear Analysis of rotor blades:**


| Sl. No | Initial mass (g) | Final mass (g) | Loss of mass (g) | Percentage wear of rotor blades |          |
|--------|------------------|----------------|------------------|---------------------------------|----------|
|        |                  |                |                  | After 25.32 h                   | Per hour |
| L-1    | 314.42           | 307.65         | 6.77             | 2.15                            | 0.09     |
| L-2    | 310.62           | 305.96         | 4.66             | 1.50                            | 0.06     |
| L-3    | 306.66           | 302.23         | 4.43             | 1.44                            | 0.06     |
| L-4    | 312.40           | 306.33         | 6.07             | 1.94                            | 0.08     |
| R-1    | 309.02           | 304.29         | 4.73             | 1.53                            | 0.06     |
| R-2    | 320.93           | 314.30         | 6.63             | 2.07                            | 0.08     |
| R-3    | 301.29           | 296.79         | 4.5              | 1.49                            | 0.06     |
| R-4    | 302.60           | 297.73         | 4.87             | 1.61                            | 0.06     |

The hourly rate of wear of blade on mass basis after field operations was recorded as 0.06 to 0.09 %.

**13. EASE OF OPERATION AND ADJUSTMENTS**

Machine maneuverability while taking turns during field operation was not comfortable.

**14. DEFECTS, BREAKDOWNS AND REPAIRS**

No defect or breakdown was observed during test.

**15. COMPONENTS / ASSEMBLY INSPECTION AND ASSESSMENT OF WEAR****15.1 Engine:**

The Engine and other assemblies were dismantled after 38.99 hours of operation.

**15.1.1 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        | 70.03                  | 70.03           | 70.02           | 70.02           | 70.03           | 70.02           | 70.30                            |

|                 |                                  |                         |
|-----------------|----------------------------------|-------------------------|
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### 15.1.2 Piston:

| Piston no. | Piston dia (mm) |                 |             |                 | Clearance between piston & cylinder liner at the skirt of the piston (mm) | Max. Permissible wear limit (mm) |
|------------|-----------------|-----------------|-------------|-----------------|---|----------------------------------|
|            | At top          |                 | At skirt    |                 |   |                                  |
|            | Thrust side     | Non Thrust side | Thrust side | Non Thrust side |   |                                  |
| 1          | 69.51           | 69.51           | 69.97       | NA              | 0.06  | 69.30                            |

### 15.1.3 Ring Side clearance

| Piston Rings         | Ring Side clearance (mm) | Max. Permissible wear limit (mm) |
|----------------------|--------------------------|----------------------------------|
| 1st Compression ring | 0.03                     | 0.3                              |
| 2nd compression ring | 0.04                     | 0.3                              |
| Oil ring             | NA                       | NA                               |

### 15.1.4 Ring end gap clearance

| Ring No.             | Ring End gap (mm) |           |           | Max. Permissible wear limit (mm) |
|----------------------|-------------------|-----------|-----------|----------------------------------|
|                      | At top            | At middle | At bottom |                                  |
| 1st Compression ring | 0.35              | 0.30      | 0.30      | 1.0                              |
| 2nd compression ring | 0.40              | 0.35      | 0.35      | 1.5                              |
| Oil ring             | NA                | NA        | NA        | NA                               |

### 15.1.5 Big end bearing

| Bearing no. | Dia of bearing (mm) | Dia of Crank pin (mm) | Clearance (mm) |       | Max. Permissible wear limit (mm) |       |
|-------------|---------------------|-----------------------|----------------|-------|----------------------------------|-------|
|             |                     |                       | Diametrical    | Axial | Diametrical                      | Axial |
| 1           | 30.07               | 29.98                 | 0.098          | NA    | 0.25                             | 0.80  |

### 15.1.6 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                | 0.14                       | NA                                    | 0.30                 |
| 2.          | Ball bearing                |                            |                                       |                      |

|                 |                                  |                         |
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15.1.7 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 |
| 5.48                      | 5.50    | 5.43                     | 5.43    | 0.05                       | 0.07    | 0.15                             | 0.20    |

Valve, guide and timing gear:-

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



- 15.2 **Clutch:** No noticeable defects observed.
- 15.3 **Transmission gears:** No noticeable defects observed.
- 15.4 **Rotary drive unit:** The rotary drive unit was dismantled and all the components were found in normal condition.

**16. CRITICAL TECHNICAL SPECIFICATIONS**

(Vide Ministry's letter No. 13-9/2019-(M&T) (I&P)-Part dated 26.04.2019)

| Sl. No. | Parameters                                | Specifications                                 | Observation                 | Remarks                 |
|---------|---|--|-----------------------------|-------------------------|
| 1.      | Type                                      | Self-propelled, walk behind                    | Self-propelled, walk behind | Conforms                |
| 2.      | Working width (mm)                        | 300 -1500                                      | 1270                        | Conforms                |
| 3.      | Type of engine                            | Compression ignition / Spark ignition          | Spark ignition              | Conforms                |
| 4.      | Starting method                           | Manual / recoil /self-starting                 | Recoil starting             | Conforms                |
| 5.      | Type of clutch                            | Dry / Wet                                      | Wet                         | Conforms                |
| 6.      | Type of primary gear box                  | Sliding / constant mesh or combination of both | Sliding mesh                | Conforms                |
| 7.      | Type of secondary gear box                | Gear type                                      | Gear type                   | Conforms                |
| 8.      | Material for rotor shaft                  | SAE1045 (CRS) / EN8 / EN9                      | Mild steel (apa)            | <b>Does not conform</b> |
| 9.      | No. of flanges                            | 4 - 10   | 8                           | Conforms                |
| 10.     | Type of flanges                           | Square / circular/ rectangular                 | Square                      | Conforms                |
| 11.     | Distance between consecutive flanges (mm) | 80 to 150                                      | 150                         | Conforms                |

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|-----------------|--|---|--|-------------------------|
| 12.             | No. of blades in each flange   | 3 - 6   | 4  | Conforms                |
| 13.             | No. of rotor blade   | 12 (Min.)   | 32   | Conforms                |
| 14.             | Thickness of rotor blade (mm)  | 5 (min.)  | 3.8  | <b>Does not conform</b> |
| 15.             | Material of blade  | Boron (28Mn Cr B5) / High Carbon Steel EN42j  | 65 Mn (apa)  | <b>Does not conform</b> |
| 16.             | Hardness of Blade, HRC   | 38 (Min.)   | 40   | Conforms                |
| 17.             | Shape of rotor blade   | C / J shape   | J shape  | Conforms                |
| 18.             | Provision for handle height adjustment                                 | Must be provided  | Provided   | Conforms                |
| 19.             | Provision for handle rotation  | Must be provided  | Not Provided   | <b>Does not conform</b> |
| 20.             | Provision for emergency stop of engine                                 | Must be provided  | Provided   | Conforms                |
| 21.             | Provision for easy start of engine                                     | Must be provided  | Not Provided   | <b>Does not conform</b> |
| 22.             | Provision for shield/cover to prevent flying of mud & stone from rotor | Must be provided  | Provided   | Conforms                |
| 23.             | Depth control mechanism  | Must be provided  | Provided   | Conforms                |
| 24.             | Provision for transport wheels   | Must be provided  | Provided   | Conforms                |
| 25.             | Provision for cover on exhaust   | Must be provided  | Provided   | Conforms                |
| 26.             | Direction of exhaust emission away from operator                       | Must be provided  | Provided   | Conforms                |
| 27.             | Marking / labelling of machine   | The labelling plate should be riveted on the body of machine having Name and address of manufacturer & Applicant, Country of origin, Make, Model, Year of manufacturer, Serial number, Engine number, Engine HP, rated rpm & SFC. | Name and address of manufacturer and country of origin were not provided | <b>Does not conform</b> |
| 28.             | Literature   | Operator manual, Service manual and Parts catalogue should be provided.   | Provided   | Conforms                |



|                 |                                  |                         |
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**TESTING AUTHORITY**



(M.R. PATIL)  
SENIOR AGRICULTURAL ENGINEER



(P.KAMALABAI)  
DIRECTOR

Draft test report compiled by - **Shri Vithato Keyho, Sr. Technical Assistant.**

**18. APPLICANT'S COMMENTS**

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| <b>Applicant's Comments</b>  |
| We have noticed all comments and we will take necessary action in future production. |

