

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट
INITIAL COMMERCIAL TEST REPORT
THIS TEST REPORT VALID UP TO :

संख्या/No. CSIR/CMERI/FMTTC/2024/036
माह/Month: June, 2024
31st MAY, 2031



**POWER WEEDER
(MODEL: SHB ARIJIT)**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र
Farm Machinery Training and Testing Centre
सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान
CSIR - Central Mechanical Engineering Research Institute
महात्मा गांधी एवेन्यू, दुर्गापुर
Mahatma Gandhi Avenue, Durgapur
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West Bengal - 713209
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Fax: +91-343-2546745

4 SPECIFICATIONS

4.1 General

Type of machine	: Self-Propelled, Walk Behind Type
Make	: SHB
Model	: SHB ARIJIT
Serial No.	: 123457
Name and address of manufacturer	: SHB AGROPOWER INDIA PVT. LTD. 159, Nripendra Narayan Road, Sukh Sadan Cooch Behar – 736101 Mob. No. - +91 7602419666
Year of manufacture	: 2024
Country of origin	: India

4.2 Details of prime mover

Name and address of manufacturer	: Chongqing COMBOSS Power Equipment Co. Ltd. 20 Manan Avenue, B Zone, Luohuang Industrial Park, Jiangjin District, Chongqing, China Mob. No. - +91 7602419666
Type	: Single cylinder, 4 – stroke, Direct Injection, Air Cooled, Spark Ignition
Make	: Chongqing COMBOSS Power Equipment Co. Ltd.
Model	: GB 270
Sr. No.	:
Country of origin	: INDIA
Year of manufacture	: 2024
Engine speed (Manufacturer's recommended setting), (rpm)	:
High idle speed	: 3750 ± 50
Low idle speed	: 1400 ± 100
Rated speed, (rpm)	: 3750
No load engine speed for field operation, (rpm)*	: 3750
Speed at maximum torque, rpm*	: 3750
Max Torque (Nm)*	: 12.55
Rated Power (kW)*	: 6.2
Max Power (kW)*	: 6.2

*As per specification sheet provided by applicant

Report prepared by
Jehel

Report verified by
Subrata kr Mandal

CSIR/CMERI/FMTTC/2024/036	SHB AGROPOWER INDIA PVT. LTD. SHB ARIJIT (INITIAL COMMERCIAL TEST)
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11 FIELD TEST

The field test under dry land condition was conducted for 20.37 h. The field performance tests were conducted at the rated 3600 rpm. Multiple test trials were conducted in sandy loam soil at the FMTTC, CSIR-CMERI farm, Durgapur. The results of the field test for dry land operation are summarized in Table-4.

Crop parameters

- i) Type of weed : Seasonal Grass
- ii) Height of weed, cm : 8 - 20

Table 4: Summary of field performance test

Sl. No.	Parameter	Range
I	Type of soil	Sandy Loam
ii	Average Soil moisture (%)	14.1 to 17.2
iii	Average Bulk density of soil (g/cc)	1.53 to 1.72
iv	Average Speed of operation (kmph)	1.52 to 1.88
v	Average depth of cut (cm)	11.1 to 11.4
vi	Average Width of cut (m)	1.17 to 1.18
vii	Average Area covered (ha/h)	0.14 to 0.18
viii	Average Time required for one ha (Hr.)	5.7 to 7.0
ix	Average Fuel consumption	
	L/hr.	0.80 to 0.90
	L/ha	5.1 to 6.4
x	Average Weeding efficiency (%)	92.9 to 97.2
xi	Average Field efficiency (%)	68.0 to 87.6

The detailed field performance testing data is given in Annexure I.

12 ADJUSTMENT, DEFECTS, BREAKDOWNS & REPAIRS

No noticeable breakdown occurred during test.

Farm Machinery Training and Testing Centre, CSIR-Central Mechanical Engineering Research Institute, Durgapur THIS REPORT IS VALID UPTO: 31 ST MAY, 2031	20 of 26
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Report prepared by

Subrata

Report verified by

Subrata kr Mandal

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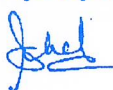
24.	Provision for transport Wheels	Must be provided	Provided	Conforms
25.	Provision for cover on Exhaust	Must be provided	Provided	Conforms
26.	Direction of exhaust emission away from Operator	Must be provided	Provided	Conforms
27.	Marking/labeling machine	The labeling plate should be riveted on the 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.	Provided	Does not confirm in toto.
28.	Literature	Operator manual, service manual and Parts catalogue should be provided.	Provided	Conforms

15 COMMENTS & RECOMMENDATION

- 15.1** The amplitude of mechanical vibration marked as (*) under section 7, are on higher side. It is not just directly concerned with operator's health, safety and comfort, but also adversely affects the useful life of the components. It needs to be corrected.
- 15.2** Marking/ Labelling machine plate partially confirm the critical specification requirement. This needs to be considered for corrective actions.
- 15.3** Material of the rotor shaft does not confirm as per IS Standard. It needs to be looked into.
- 15.4** Chemical analysis of the rotor blade does not confirm with the requirement as per IS: 6690-1981. It should be looked into.
- 15.5** Provision for handle Rotation is not provided in the machine. It needs to be provided.
- 15.6** The user's manual, parts catalogue and service manual are provided. But it needs to be updated as per IS:8132-1999.

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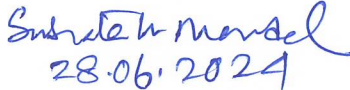
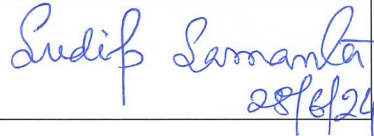
16 TECHNICAL LITERATURE

The following literatures are provided by the applicant during the test along with the application form.

- a) User's manual book
- b) Parts' catalogue
- c) Service manual

These manuals need to be updated as per IS: 8132-1999.

TESTING AUTHORITY

Report Prepared by	Sr. Technical Officer, CSIR-CMERI Farm Machinery Testing Centre	 28/06/2024
Report Verified & Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 28.06.2024
Report Approved for release by	Head, Business Development Unit, CSIR-CMERI, Durgapur	 28/6/24

17 APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
17	15.1 to 15.6	We have already informed our manufacturing division to take immediate corrective action to comply with all the suggested parameters.



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