

प्रारंभिक व्यावसायिक परीक्षण रिपोर्ट

INITIAL COMMERCIAL TEST REPORT

THIS TEST REPORT VALID UP TO

ख्या/No. CSIR/CMERI/FMTTC/2023/002

माह/Month: April, 2023

30th APRIL, 2030



**ROCK KING (2800 SUPER)
TRACTOR MOUNTED STONE PICKER**



कृषि मशीनरी प्रशिक्षण और परीक्षण केंद्र

Farm Machinery Training and Testing Centre

सीएसआईआर- केन्द्रीय यांत्रिक अभियांत्रिकी अनुसंधान संस्थान

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CSIR/CMERI/FMTTC/2023/002	TRACTOR OPERATED STONE PICKER (ROCK KING 2800 SUPER) (INITIAL COMMERCIAL TEST)
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Name of Machine	: STONE PICKER (ROCK KING 2800)
Type	: Tractor Operated
Make	: DHIMAN INDUSTRIES
Model	: 2800 SUPER
Name and address of Manufacturer	: Kuldip Singh Vill. Majari Kishne Wali, Khanna Amloh Road, Fatehgarh Sahib, Punjab-147203
Name and address of Applicant	: Kuldip Singh Vill. Majari Kishne Wali, Khanna Amloh Road, Fatehgarh Sahib, Punjab-147203
Test Conducted at	: CSIR- CMERI Centre of Excellence for Farm Machinery, Gill Road, Ludhiana – 141006 (Punjab).

THIS TEST REPORT IS VALID UP TO : 30.04.2030
[vide DAC&FW OM No. 13-24/2018- M&T (I&P) dated 19.09.2018]



Farm Machinery Training and Testing Centre, CSIR-Central Mechanical Engineering Research Institute, Durgapur THIS REPORT IS VALID UPTO: 30th April 2030	1 of 27
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Fig.1: Selection of machine

3. TEST CODE/ PROCEDURE

There is no Indian Standard Test Code available for testing of tractor-operated stone picker as such. The guidelines, however, have been taken from the following:

- | | |
|------------------|---|
| IS : 4905-2001 | : Random Selection standard |
| IS: 12036-1995 | : Agricultural Tractors-test Procedures-Power Tests for Power take-off |
| IS: 13818-1993 | : Harvesting Equipment-Tractor operated potato digger shakers- Test Code |
| IS: 4931-2004 | : Agricultural tractors - Rear mounted power take off Types 1, 2 and 3 |
| IS: 17045-2018 | : Rotary Tiller (Rotavator) - Tractor Driven - Test Procedure And Recommendations on Selected Performance Characteristics |
| IS: 13818-1993 | : Harvesting equipment - Tractor operated potato digger shakers - Test code |
| IS: 4468-2 -1997 | : Agricultural wheeled tractors - Three-point linkage, Part 2: Category 1 N (Narrow Hitch) |
| IS 12371:1988 | : Technical requirements for single acting telescopic tipping cylinders for agricultural trailers |



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4. BRIEF DESCRIPTION

- Stone collector is a tractor operated implement used for digging, picking and collecting stones from the agricultural land.
- The gearbox of a stone collector is powered by tractor PTO through PTO shaft (universal shaft). The power from gearbox is transmit to v-belt pulley to drive elevator chain conveyor on which stone are conveyed and dropped on the collecting bucket behind the machine.
- The hook type hitch of stone picker is mounted to the single point drawbar hitch of tractor through hitch pin and the depth of operation of stone collector is controlled by lowering the height of the lower link of three point hitch system of tractor as the drawbar is connected to lower link.

5. SPECIFICATIONS

5.1 GENERAL

Type of machine	: Stone Picker
Make	: Dhiman Industries
Model	: Rock King 2800 Super
Serial No.	: DI/HBB/0014
Name and address of manufacturer	: Dhiman Industries Vill. Majari Kishne Wali, Khanna Amloh Road, Fatehgarh Sahib, Punjab -147203
Year of manufacture	: 2022
Country of origin	: INDIA
Recommended source of power as per applicant	: Tractor operated with minimum 50 hp

5.2 DETAILS OF PRIME MOVER

Type	: Tractor operated
Make and Model	: New Holland 9010
Chassis No.	: NHN90100Z11A376720
Engine No.	: 195244D
PTO rpm	: 540 $\pm$ 10
Maximum PTO Power kW	: 57.04 kW



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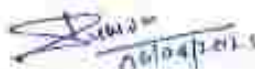
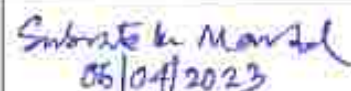
13. LITERATURE

Operator's manual and spare parts catalogue is provided in English and Punjabi language for operator's use which is adequate, however, the manual should be updated as per IS: 8132:1999.

14. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
12	12.1 to 12.7	We will take corrective action against the same.

15. TESTING AUTHORITY

Report Prepared by	Scientist CSIR-CMERI Farm Machinery Testing Centre	 06/04/23
Report Verified by	Scientist, CSIR-CMERI Farm Machinery Testing Centre	 06/04/23
Report Approved by	In-Charge, CSIR-CMERI Farm Machinery Testing Centre	 06/04/2023
Report Approved for release by	Head, Business Innovation and Skill Group, CSIR-CMERI, Durgapur	 06/4/23



ANNEXURE- I

FIELD PERFORMANCE DATA

Test No.	Soil Sample Before			Soil Sample After			Soil Stone Ratio		Speration Index (SI)	Conveyor Loss(%)
	Total Weight, kg	Weight of soil, kg	Weight of stone, kg	Total Weight, kg	Weight of soil, kg	Weight of stone, kg	Before Digging	After Digging		
1	4.51	2.41	2.1	1.74	0.28	1.46	1.15	0.19	0.83	Nil
2	3.82	1.97	1.85	2.18	0.22	1.96	1.06	0.11	0.89	Nil
3	3.75	2.29	1.46	3.1	0.3	2.8	1.57	0.11	0.93	Nil
4	3.05	1.71	1.34	3.99	0.3	3.69	1.28	0.08	0.94	Nil
5	4.78	2.19	2.59	4.85	0.87	3.98	0.85	0.22	0.74	Nil
6	4.3	2.16	2.14	4.16	0.14	4.02	1.01	0.03	0.97	Nil
7	3.61	1.97	1.64	3.62	0.34	3.28	1.20	0.10	0.91	Nil
8	5.83	2.86	2.97	3.59	0.53	3.06	0.96	0.17	0.82	Nil
9	5.07	2.73	2.34	4.85	0.72	4.13	1.17	0.17	0.85	Nil
10	4.86	2.81	2.05	4.25	0.37	3.88	1.37	0.10	0.93	Nil



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ANNEXTURE-II

SIZE OF STONE (STONE INDEX)

S.No.	Length, (mm)	Width, (mm)	Thickness, (mm)	Stone Index, (%)
1	64.4	35.18	19.14	615.93
2	62.31	47.03	30.51	270.58
3	50.41	37.7	22.68	297.20
4	72.55	54.24	35.12	276.31
5	85.39	54.42	30.42	440.45
6	84.39	44.02	28.38	570.06
7	84.6	42.82	22.3	749.53
8	38.98	37	26.65	154.09
9	45.06	37.06	31.52	173.82
10	48.42	41.72	29.17	192.65
11	34.41	23.36	15.1	335.68
12	26.53	16.24	12.93	335.19
13	35.38	24.23	15.49	333.51
14	22.04	14.53	9.51	351.54
15	54.47	42.14	33.97	207.26
16	52.76	24.56	19.3	587.25
17	30.75	24.43	15.42	251.01
18	32.77	24.97	15.42	278.90
19	61.78	46	28.94	286.71
20	31.1	17.97	11.02	488.42
21	57.83	41.34	19.97	405.10
22	47.55	40.65	29	191.80
23	43.24	40.92	27.53	165.97
24	54.41	34.62	18.82	454.37
25	26.1	14.72	10.67	433.72
26	48.03	39.65	23.27	250.03
27	38.4	37.79	26.28	148.48
28	45.33	29.8	13.36	516.12
29	28.51	21.61	14.12	266.38
30	58.78	51.05	20.46	330.79
31	54.29	45.33	24.26	268.02
32	44.53	34.32	25.28	228.55

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