

व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/ No.: IMP-1043/2653/2021
माह/Month : January, 2021

THIS TEST REPORT VALID UP TO : 31st JANUARY, 2028



**KISHAN KAI 002 (LIFT MODEL) OFFSET DISC HARROW
TRACTOR OPERATED (MOUNTED TYPE)**



भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि, सहकारिता एवं किसान कल्याण विभाग

Department of Agriculture, Cooperation and Farmers Welfare

उत्तरी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Northern Region Farm Machinery Training and Testing Institute

ट्रैक्टर नगर, सिरसा रोड, हिसार, (हरियाणा) - 125 001

Tractor Nagar, Sirsa Road, HISAR (Haryana)-125 001

[ISO 9001:2015 CERTIFIED]

Website: <http://nrfmtti.gov.in/>

E-mail: fmti-nr@nic.in

Tele./FAX: 01662-276984

IMP-1043/2653/2021	KISHAN KAI 002 (LIFT MODEL) OFFSET DISC HARROW TRACTOR OPERATED (MOUNTED TYPE) (COMMERCIAL)
--------------------	--

8.4	The exposed metallic parts shall be free from rust and shall have a protective coating, which will prevent surface deterioration in transit and storage.	Painted with anticorrosive paint	Conforms
9	Marking and packing :-		
	a) Manufacturer's name or recognized trade mark, if any	Provided	Conforms
	b) Type and size	Not Provided	Does not conform
	c) Batch or code number	Not marked	Does not conform

4. HARDNESS AND CHEMICAL COMPOSITION OF DISCS

4.1 The hardness of discs was determined. The results of hardness test are tabulated in Table-1.

Table-1

Sr. No.	Hardness		Remarks
	As per IS: 4366 (Part-I)-1985	As observed	
		Plain disc	
1	38 to 45 HRC	44.4	Conforms
2		45.0	
3		43.7	
4		44.0	

4.2 Chemical composition

Table-2

Constituents	As per IS: 9442-1980	Composition as observed (% of weight)	Remarks
		Plain disc	
Carbon (C)	0.70 to 0.80 ±0.04	0.4541	Does not conform
Silicon (Si)	0.10 to 0.40 ±0.03	0.4348	Does not conform
Manganese (Mn)	0.60 to 1.00 ±0.04	0.9325	Conforms
Sulphur (S)	0.05 (max) +0.005	0.0472	Conforms
Phosphorous (P)	0.05 (max) +0.005	0.0208	Conforms

5. FIELD PERFORMANCE TEST

The field tests was conducted for 26.36 hours in different soil moisture conditions to assess the performance of the implement with ACE DI 550.

The no load engine speed of tractor was speed adjusted to 1715 rpm and observations are summarized in Table-3.

SUMMARY OF FIELD PERFORMANCE TEST

Table-3

Sr. No.	Parameters	Range
i)	Tractor used	ACE DI 550
ii)	Gear used	H-1
iii)	Type of soil	Sandy loam
iv)	Average bulk density of soil (g/cc)	1.680 to 1.730
v)	Average soil moisture (%)	13.33 to 13.83
vi)	Average speed of operation (kmph)	6.15 to 6.31
vii)	Average wheel slippage (%)	7.80 to 13.92
viii)	Average depth of cut (cm)	12.33 to 14.22
ix)	Average width of cut (cm)	181 to 184
x)	Average area covered (ha/h)	0.930 to 1.042
xi)	Average time required for one ha (h)	0.96 to 1.08
xii)	Average field efficiency (%)	81 to 90
xiii)	Average fuel consumption	
	- l/h	4.21 to 4.70
	- l/ha	4.13 to 4.86
xiv)	Average implement draft (kgf)	294
xv)	Average drawbar power used (kW)	4.98

Wear of discs

Sr. No.	Initial mass (g)	Final mass (g)	Loss of mass (g)	Percentage of wear	
				After 26.36 hr.	Per hour
Plain disc					
1.	9320	9220	100	1.07	0.04
2.	9180	9100	80	0.87	0.03
3.	9300	9180	120	1.29	0.05
4.	9080	9000	80	0.88	0.03
5.	9880	9800	80	0.81	0.03
6.	9220	9040	180	1.91	0.07
7.	9140	9040	100	1.09	0.04

The hourly percentage wear of discs on mass basis was recorded as 0.03 to 0.07 %.

6. EASE OF OPERATION & ADJUSTMENTS

No noticeable difficulty was observed during the operation and adjustment of disc harrow.

7. DEFECTS, BREAKDOWNS AND REPAIRS

No noticeable defect observed.

8. CRITICAL TECHNICAL SPECIFICATION

Deferred till 31.03.2021 vide Ministry O.M. No 13-13/2020 M&T, (I&P) dated 22.12.2020.

9. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATION

- 9.1 The specification of disc harrow does not conform, in full, to the requirement of IS:6635-1972. This should be looked into for corrective action.
- 9.2 The specification of plain spool does not conform, in full, to the requirements of IS:7230-1974. This should be looked into for corrective action.
- 9.3 The specification for agriculture tillage disc does not conform, in full, to the requirements of IS: 4366 (Part 1)-1985. This should be looked into for corrective action.
- 9.4 The scrapers are welded to the frame and arrangement for adjustment is not made. It should be provided.
- 9.5 The chemical composition of disc does not meet in full, to the requirement of IS:9442-1980. This should be looked into for corrective action.
- 9.6 The labeling plate should be provided with following information
- i) Make
 - ii) Model
 - iii) Serial Number
 - iv) Year of manufacture
 - v) Size of implement
 - vi) Required size of prime mover (kW)
 - vii) Name and address of manufacturer
 - viii) country of origin
 - (ix) Weight (kg)

9.7 Adequacy of literature

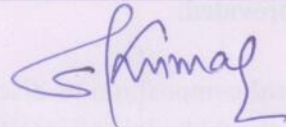
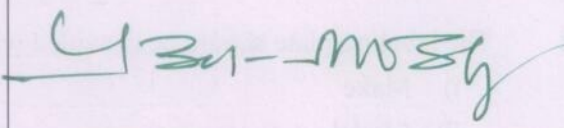
No technical literature provided by the applicant during the test.

The following literature, therefore, MUST be provided as per IS:8132-1999.

- i) Operator's manual
- ii) Service manual
- iii) Parts catalogue

9.8 The model name of implement as per labeling plate is KAI 002(LIFT Model), whereas in the application it is shown as 2020 (Harrow) Lift harrow. This is misleading. It calls for necessary action.

TESTING AUTHORITY

SANJAY KUMAR AGRICULTURAL ENGINEER	
P. K. PANDEY DIRECTOR	

Draft test report compiled by Girdhari Lal, Technician.

10. APPLICANT'S COMMENTS

10.1	9.1	We will take care the same in our regular production.
10.2	9.2	We will be take care the specification of plain spool for corrective action.
10.3	9.3	We will take care the same in our regular production.
10.4	9.4	The scrapers will be provide with adjustments on disc harrow.
10.5	9.5	The chemical composition of disc will be update as per IS: 9442-1980.
10.6	9.6	We will take care the same in our regular production.
10.7	9.7	We will updated technical literature as per recommendations.

