

व्यावसायिक परीक्षण रिपोर्ट (प्रथम बैच)
COMMERCIAL TEST REPORT
(1st Batch Test)



संख्या/No.: Machine 34/377
माह / Month: January 2021

THIS TEST REPORT IS VALID UPTO 31.01.2026



HONDA ROTARY TILLER (POWER WEEDER)
MODEL: FJ 500 RD



सत्यमेव जयते

भारत सरकार

GOVT OF INDIA

कृषि एवं किसान कल्याण मंत्रालय

MINISTRY OF AGRICULTURE & FARMERS WELFARE

कृषि, सहकारिता एवं किसान कल्याण विभाग

DEPARTMENT OF AGRICULTURE, COOPERATION & FARMERS WELFARE

उत्तर पूर्व क्षेत्र कृषि यंत्र परीक्षण एवं प्रशिक्षण संस्थान

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4. SPECIFICATIONS**4.1 General**

	Previous Sample	Present Sample
Name of machine	: Honda Rotary Tiller	Honda Rotary Tiller
Manufacturer's name and address	: JIALING-HONDA MOTOR CO.LTD NANPING, CHONGQUING, CHINA PIN - 400015	Jialing-Honda Motor Co. Ltd. No 45, Baihe Road, Nanping Economic Technological Development Area, Chongqing, China PIN - 400015
Test requested by (Applicant)	: Honda Siel Power Products Limited Dr. B. K. Kakoti Road, Woodland Bye Lane, Opposite D. G. P. office Ulubari, Guwahati - 781007	Honda India Power Products Limited Plot no-5, Sector- 41, (kasna) Greater Noida Industrial Development Area, Dist- GautamBudh Nagar (U.P)
Make	: HONDA	HONDA
Model	: FJ 500 RD	FJ 500 RD
Type	: Rotary	OHV , 4-stroke air cooled
Machine Serial No.	: GCAAH - 2810499, FY3* JH1G8F	FAAC1059620
Size (mm)	: 915.0 (max.)	915.0 (max.)
Year of manufacture	: 2011	2018
Country of origin	: China	China



9 HARDNESS AND CHEMICAL COMPOSITION

9.1 Hardness of Rotor Blade:

The surface hardness of blade was recorded as under:-

Sl. No.	Hardness				Remarks	
	As per IS: 6690-2002		As observed (HRC)		Shank portion	Edge portion
	Shank portion	Edge portion	Shank portion	Edge portion		
1	(37-45 HRC) 344 – 411	(56±3 HRC) 512 – 634	48.9	49	Does not Conform	Does not Conform

9.2 Chemical composition of Rotor Blade:

The material of blade was got analyzed for chemical composition. The results of chemical analysis test are as under:-

Constituents	As per IS: 6690-2002		Composition As observed (% of weight)	Remarks*
	Carbon Steel	Silicon Manganese Steel		
Carbon (C)	0.70 -0.85	0.50-0.60	0.593	Conforms
Silicon (Si)	0.10 -0.40	1.50-2.00	1.464	Does not conform
Manganese (Mn)	0.50 -1.0	0.50-1.00	0.766	Conforms
Sulphur (S)	0.05 (max)	0.05 (max)	0.008	Conforms
Phosphorous (P)	0.05 (max)	0.05 (max)	0.018	Conforms

10. RUNNING -IN

Running-in was not recommended by the applicant. However, the Honda Rotary Tiller (Power weeder) was run-in for 1.0 hour before the actual test. All the fasteners were checked and tightened thereafter.

11. FIELD PERFORMANCE TEST

The field test of the machine consisting of Running-in & Dry land operation were conducted in Bottle Gourd, Ridge Gourd & Bitter Gourd fields for total of 26.00 hours to assess the performance of the machine. The performance of machine is reported in **Annexure**. The observations are summarized in the following table.

Summary of Field Performance Test

S. No.	Parameters/operations	Observations
1	Type of soil	Light
2	Soil Moisture, (%)	16.0 to 19.0
3	Bulk density of soil (g/cc)	1.58 to 1.76
4	Speed of operation (kmph)	1.64 to 1.95
5	Depth of cut (cm)	5.03 to 5.43
6	Width of cut (cm)	80.0 to 84.0
7	Area covered (ha/h)	0.108 to 0.129
8	Time required for one ha (h)	7.75 to 9.26
9	Weeding Efficiency, (%)	71.1 to 75.69
10	Field Efficiency, (%)	79.19 to 82.44
11	Fuel consumption	
	- l/h	0.747 to 0.780
	- l/ha	6.05 to 6.95

14.1.7 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	Inlet	Exhaust	Inlet	Exhaust
5.46	5.44	5.42	5.40	0.04	0.04	Not Declared	

14.2 Timing Gears

No noticeable defect observed.

14.3 Clutch

No noticeable defect observed.

14.4 Transmission

No noticeable defect observed.

14.5 Rotary drive unit

No noticeable defect observed.

15. SUMMARY OF OBSERVATION, COMMENTS & RECOMMENDATIONS


Sl. No.	Characteristics	Declaration	Observation	Whether within tolerance limit or Meets the requirement (Yes/No)
1	2	3	4	5
15.1	Engine performance test			
i)	Average rated power in rating test, kW	2.90	2.90	Yes
ii)	Specific fuel consumption at average rated power in rating test, g/kwh	380	325.6	Yes
ii)	Governing test			
	Percentage of momentary speed change that of rated speed	Not declared	7.86%	Yes
	Percentage of Permanent change that of rated speed	Not declared	5.97%	Yes
15.2	Wear Assessment			
i)	Cylinder bore diameter	68.12 (max)	68.01	Yes
ii)	Clearance between piston & cylinder liner	Not declared	0.06	--
iii)	Ring end gap			
	- Top ring	1.0	0.40	Yes
	- 2 nd ring	1.0	0.55	Yes
	- Oil ring	1.0	0.60	Yes




Machine 34/377	HONDA ROTARY TILLER (POWER WEEDER), MODEL: FJ 500 RD - COMMERCIAL (Batch
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15.10	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.
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TESTING AUTHORITY


(M.R. PATIL)
AGRICULTURAL ENGINEER


(J.P. MANDAL)
SENIOR AGRICULTURAL ENGINEER


(K.K. NAGLE)
DIRECTOR

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

16. APPLICANT'S COMMENTS

No comments received from the Applicant.