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

स्वच्छ भारत
एक कदम स्वच्छता की ओर

संख्या/No.: Machine 113/484
माह / Month: February 2024

THIS TEST REPORT IS VALID UPTO 28.02.2031

HONDA FQ650
POWER WEEDER

सत्यमेव जयते

भारत सरकार
GOVT OF INDIA
कृषि एवं किसान कल्याण मंत्रालय
MINISTRY OF AGRICULTURE & 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

विश्वनाथ चारिआलि, जिला-विश्वनाथ (असम)
BISWANATH CHARIALI: BISWANATH: ASSAM, PIN - 784 176
[AN ISO 9001:2015 CERTIFIED INSTITUTION]

Website: http://nerfmtti.nic.in
Ph. No. 03715-222094
Fax No: 03715-230358
E-Mail: fmti-ner@nic.in

4. SPECIFICATIONS

4.1 General:

Make	:	HONDA
Model	:	FQ650
Name and address of manufacturer	:	**Honda Power Products (China) Co., Ltd.,** No.1, Guan Yue South Road, Yubei District, Chongqing, China, Pin-400015
Name and address of applicant	:	**Honda India Power Products Limited,** Plot No-5, Sector-41 (Kasna), Greater Noida Industrial Devlopment Area, Dist-Gautam Buddha Nagar, Greater Noida, Uttar Pradesh- 201310, Uttar Pradesh
Name of machine	:	Power weeder
Type of machine	:	Self propelled, Walk behind
Working size of machine (mm)	:	900
Year of manufacture	:	2023
Serial no. of machine	:	FAFC1011082

4.2 Details of prime mover:

Make	:	Honda
Model	:	GP200
Type	:	4 stroke, Single cylinder, Air cooled, Spark Ignition
Year of manufacture	:	2023
Serial Number	:	GCATH-2311100
Country of origin (apa)	:	**CHINA**
Recommended high idle speed (rpm)	:	3800
Recommended low idle speed (rpm)	:	1400
Recommended rated speed (rpm)	:	3600
Rated power observed (kW)	:	**3.74**
Rated power declared (apa) (kW)	:	3.70

Sl .No.	Parameters		Observations
1	Type of soil	:	Light
2	Soil moisture (%)	:	7.5 to 9.1
3	Bulk density of soil (g/cc)	:	1.54 to 1.60
4	Forward Speed of operation (kmph)	:	0.98 to 1.03
5	Depth of cut (cm)	:	5.28 to 5.97
6	Width of cut (m)	:	0.854 to 0.896
7	Area covered (ha/h)	:	0.065 to 0.072
8	Time required for one ha (h)	:	17.90 to 19.80
9	Field efficiency (%)	:	76.47 to 82.14
10	Weeding efficiency (%)	:	69.69 to 76.62
11	Fuel consumption		
	l/h	:	0.83 to 0.88
	l/ha	:	11.51 to 12.90

11.1 Rate of work

- Rate of work was recorded as 0.065 to 0.072 ha/h and the forward speed of operation varied from 0.98 to 1.03 kmph.
- Time required to cover one hectare was recorded as 17.90 to 19.80 h.

11.2 Quality of work:

- Depth of cut was recorded as 5.28 to 5.97 cm.
- Working width was observed as 0.854 to 0.896 m.
- Field efficiency was found as 76.47 to 82.14 %.
- Weeding efficiency was found as 69.69 to 76.62 %.

11.3 Adequacy of power of prime mover:

The power of prime mover was found adequate.

11.4 Wear Analysis of rotor blades:

Sl. No	Initial mass (g)	Final mass (g)	Loss of mass (g)	Percentage wear of rotor blades	
				After 25.42 h	Per hour
L-1	240.0	238.0	2.0	0.83	0.03
L-2	250.5	247.5	3.0	1.20	0.05
L-3	259.5	257.0	2.5	0.96	0.04
R-1	253.5	250.0	3.5	1.38	0.05
R-2	247.5	245.0	2.5	1.01	0.04
R-3	240.0	237.5	2.5	1.04	0.04

The hourly rate of wear of blade on mass basis after field operations was recorded as 0.03 to 0.05 %.

14.1.5 Big end bearing

Bearing no.	Dia of bearing (mm)	Dia of Crank pin (mm)	Clearance (mm)		Max. Permmissible wear limit (mm)	
			Dimetrical	Axial	Dimetrical	Axial
1	30.02	29.93	0.09	--	Not specified	Not specified

Condition of bearing: Normal

14.1.6 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	0.20	Not specified	Not specified
2.	Ball bearing			

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
5.48	5.48	5.42	5.42	0.06	0.06	Not specified	Not specified

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

14.2 Clutch: No noticeable defects observed

14.3 Transmission gears: No noticeable defects observed

14.4 Rotary drive unit:

The rotary drive unit was dismantled and all the components were found in normal condition.

15. COMMENTS & RECOMMENDATIONS

15.1 The engine was not marked with Manufacturer name or trade-mark, Rated power, Rated speed and type of fuel used which does not fulfill the requirement of IS 7347-1974 (Amended 2011). This may be looked into.

15.2 The hardness of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.

15.3 Machine maneuverability while taking turns during field operation was not comfortable. It shall be looked into for ease of operation for the operator.

15.4 Noise at operator's ear level was observed on higher side against warning limit of 85 dB (A) as specified by International labour Organization (ILO) for continuous exposure of 8 hours per day. **This calls for reduction in noise level to improve the operator's comfort & safety.**

15.5 The amplitude of mechanical vibration marked as (*) is on drastically higher side and is directly concerned with operator's health, safety and comfort. Besides, it is also adversely affect the useful life of machine components. In view of above, this deserves to be given top priority for corrective action.

15.6 Labeling plate along with machine details should be provided on the machine at suitable place as per Indian Standard.

15.7 Adequacy of Literature

The following literature in English language was provided for reference during testing:

- Operator's/ Service manual
- Parts catalogue

It is recommended to bring out the manual in Hindi and other vernacular languages as per IS: 8132-1999.

TESTING AUTHORITY

(M.R. PATIL)
AGRICULTURAL ENGINEER

(Dr. P.P. RAO)
DIRECTOR

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