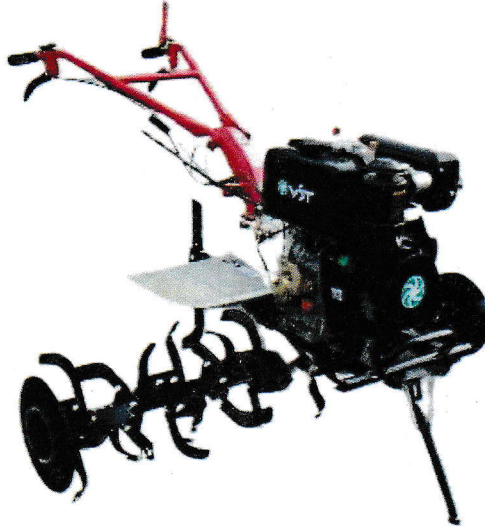
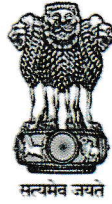




THIS TEST REPORT IS VALID UPTO 31.08.2028



VST FT 80 POWER WEEDER



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)

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[AN ISO 9001:2015 CERTIFIED INSTITUTION]

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Machine 98/469	VST FT 80 POWER WEEDER	COMMERCIAL (INITIAL)
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4. SPECIFICATIONS

4.1 General:

Make : VST
 Model : FT 80
 Name and address of manufacturer : **M/s VST Tillers Tractors Ltd.**
 Plot No -1, Dyavasandra Industrial Layout,
 Whitefield Road, Mahadevpura Post,
 Bengaluru Karnataka- 560048
 Name and address of applicant : **M/s VST Tillers Tractors Ltd.**
 Plot No 222-224 & 229-232, 3rd Phase,
 KIADB Industrial Area, Malur, Kolar
 District, Karnataka, 563130
 Name of machine : Power Weeder
 Type of machine : Self propelled, Walk behind
 Working size of machine (mm) : 1465
 Year of manufacture : 2022
 Serial no. of machine : HTE0448561

4.2 Details of prime mover:

Make : CHAMP
 Model : CHD790
 Type : 4 stroke, Single cylinder, Air cooled,
 Diesel Engine
 Year of manufacture : 2022
 Serial Number : HY2-5-86-BAJHBG-067
 Country of origin : **INDIA**
 Recommended high idle speed (rpm) : 3750 ± 50
 Recommended low idle speed (rpm) : 1500 ± 100
 Recommended rated speed (rpm) : 3600 ± 50
 Maximum power observed (kW) : 5.92
 Maximum power declared (apa)
 (kW) : 5.90

Machine 98/469	VST FT 80 POWER WEEDER	COMMERCIAL (INITIAL)
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Sl.No.	Parameters	Observations
1	Type of soil	Light
2	Soil moisture (%)	7.73 to 13.50
3	Bulk density of soil (g/cc)	1.53 to 1.60
4	Forward Speed of operation (kmph)	0.92 to 1.17
5	Depth of cut (cm)	5.07 to 5.60
6	Width of cut (m)	1.54 to 1.56
7	Area covered (ha/h)	0.101 to 0.140
8	Time required for one ha (h)	7.14 to 9.90
9	Field efficiency (%)	70.63 to 78.21
10	Weeding efficiency (%)	75.17 to 85.59
11	Fuel consumption	
	l/h	0.713 to 0.858
	l/ha	5.09 to 7.16

12.1 Rate of work:

- Rate of work was recorded as 0.101 to 0.140 ha/h and the forward speed of operation was recorded from 0.92 to 1.17 kmph.
- Time required to cover one hectare was recorded as 7.14 to 9.90 h.

12.2 Quality of work:

- Depth of cut was recorded as 5.07 to 5.60 cm.
- Working width was observed as 1.54 to 1.56 m.
- Field efficiency was found as 70.63 to 78.21 %.
- Weeding efficiency was found as 75.17 to 85.59 %.

12.3 Adequacy of power of prime mover:

The power of prime mover was found adequate.

12.4 Wear Analysis of rotor blades:

Blade No.	Initial mass(g)	Final mass (g)	Loss of mass (g)	Percentage wear of rotor blades	
				After 26.25 h	Per hour
L-1	361.5	357.0	4.5	1.24	0.05
L-2	375.0	371.0	4.0	1.07	0.04
L-3	364.5	361.0	3.5	0.96	0.04
L-4	360.0	356.0	4.0	1.11	0.04
L-5	363.0	359.5	3.5	0.96	0.04
R-1	362.5	359.0	3.5	0.97	0.04
R-2	350.5	347.0	3.5	1.00	0.04
R-3	370.0	367.0	3.0	0.81	0.03
R-4	372.5	369.0	3.5	0.94	0.04
R-5	378.0	373.0	5.0	1.32	0.05

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

Machine 98/469	VST FT 80 POWER WEEDER	COMMERCIAL (INITIAL)
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16. COMMENTS & RECOMMENDATIONS

- 16.1 The maximum torque was observed as 21.98 N-m against the declared value of 20.0 N-m. This shall be looked into for corrective action.
- 16.2 The specific fuel consumption (SFC) of engine corresponding to maximum power and at rated engine speed was recorded as 283.8 g/kWh and 274.0 g/kWh under natural ambient condition against the declared value of 310 g/kWh by the manufacturer. This shall be looked into for corrective action.
- 16.3 It was observed that during field performance test one (01) no. of rotary blade and rotor shield (RHS) mounting bracket were broken. It should be looked into for quality improvement.
- 16.4 It was observed that air cleaner rubber oil seal was got damaged during the test. It should be looked into for quality improvement.
- 16.5 Noise at operator's ear level was observed on higher side against danger limit of 90 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.**
- 16.6 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 the component in view of above this deserves to be given top priority for corrective action.
- 16.7 The hardness and chemical composition of rotary blades does not conform to the requirement of IS 6690:1981 (Reaffirmed 2012). This may be looked into for corrective action.
- 16.8 During air cleaner oil pull over test percentage loss of oil was observed on higher side. It should be looked into for corrective action.
- 16.9 Machine maneuverability while taking turns during field operation was not comfortable. It shall be looked into for ease of operation for the operator.

Machine 98/469	VST FT 80 POWER WEEDER	COMMERCIAL (INITIAL)
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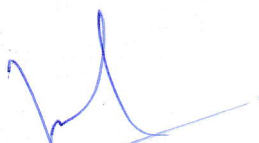
16.10 Adequacy of Literature

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

17. APPLICANT'S COMMENTS

Para No	Our Reference	Applicant's Comments
17.1	16.1 to 16.10	Observation will be studied and necessary corrective action will be taken for quality improvement in products. Parameter will be studied & necessary action will be initiated.