

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

संख्या/No: Machine-499/1509
माह:/Month: June, 2023
Validity: 31.05.2028



VST- 55 DLX MULTI CROP POWER REAPER



सत्यमेव जयते

भारत सरकार

Government of India

कृषि एवं किसान कल्याण मंत्रालय

Ministry of Agriculture and Farmers Welfare

कृषि एवं किसान कल्याण विभाग

Department of Agriculture and Farmers Welfare

दक्षिणी क्षेत्र कृषि मशीनरी प्रशिक्षण एवं परीक्षण संस्थान

Southern Region Farm Machinery Training and Testing Institute

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Machine-499/1509	VST 55 DLX MULTI CROP POWER REAPER	COMMERCIAL (ICT)
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Manufacturer : M/s VST Tillers Tractors Ltd.
Plot No. 222-224 & 229-232, 3rd Phase, KIADB
Industrial Area, Malur, Kolar Dist-563130
Karnataka.

Applicant : M/S V.S.T. TILLERS TRACTORS LTD.

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Machine-
499/1509

VST 55 DLX MULTI CROP POWER REAPER

COMMERCIAL
(ICT)



Type of test : INITIAL COMMERCIAL TEST (ICT)

Period of test : 23.03.2022 to 30.05.2023

Test Report No. : Machine-499/1509

Month / Year of release : June, 2023

- i) The results reported in this report are observed values and no corrections have been applied for atmospheric and site conditions.
- ii) The test sample was directly submitted by the applicant for test at this Institute. Hence the method of selection is not known.
- iii) The results presented in this report do not in any way attribute to the durability of the machine.
- iv) This report should not be reproduced in part or full without prior permission of the Director, Southern Region Farm Machinery Training and Testing Institute, Garladinne, Anantapur (A.P.).
- V) This is a report on Commercial Test of power reaper named "VST 55 DLX Multi crop Power Reaper". **This report is valid up to 31.05.2028, Vide Ministry's O.M. No. 13-24/2018-M&T (I&P) dated 19.09.2018.**

SELECTED CONVERSIONS

S. No	Units	Conversion Factor
1	Force	
	1 kgf	9.80665 N
		2.20462 lbf
2	Power	
	1 hp	1.01387 metric hp (Ps) 745.7 W
	1 Ps	735.5 W
3	Pressure	
	1 psi	6.895 kPa
	1 kgf/cm ²	98.067 kPa = 735.56 mm of Hg
	1 bar	100 kPa = 10 N/cm ²
	1 mm of Hg	1.3332 m-bar

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were found in normal condition.



17. SUMMARY OF OBSERVATIONS, COMMENTS & RECOMMENDATIONS

- 17.1 Engine maximum and rated power were observed as 3.8 kW against the declared values of 3.7 kW.
- 17.2 Back up torque of engine was observed as 7.47 % against the checking value of 7.5%.
- 17.3 Specific fuel consumption of engine corresponding to maximum power was recorded as 450g/kWh. against the declaration value of 452g/kWh
- 17.4 Max. Torque was observed as 23.57 Nm. Against declaration value of 22.5Nm.
- 17.5 The amplitude of mechanical vibration on various assemblies of the Power Reaper was observed to the extent of 391 micron, which is on higher side . Therefore necessary action to reduce the vibration should be taken in future.
- 17.6 The dimension of Knife does not conform, in full, to IS: 6025-1982.
- 17.7 Provided labeling plate should be as per the requirement of IS.
- 17.8 During engine test the reduction Chain case (Part No-1150-ZE1-611), Chain, PTO drive (Part No-1411-ZF1-611) of reduction unit was broken. This should be looked into for necessary corrective action on priority basis.
- 17.9 **Wear of critical components:**
- i) The wear rate of cutter bar on mass basis was recorded as 0.023 % per hour.
 - ii) Hardness of movable & stationary blade at its shank portion does not conform to the requirement as per IS 6025:1982 (Reaffirmed:1999).
 - iii) The chemical composition of cutting (movable) blade and stationary blades are not conforming to the requirement of relevant IS (IS 6025:1982 (Reaffirmed: 1999).Therefore, this should be taken care for corrective action.
- 17.10 **Provision for safety:**
- A safety pin at driven sprocket of conveyor chain is provided to take of overloading of cutter bar.

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17.11 Technical literature:

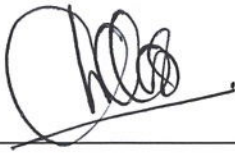
The operation manual cum parts catalogue of reaper and engine in single booklet was supplied with the reaper for reference during the test. The manuals are no adequate. The most of initial setting and discard limit of critical components may be added in manuals and leaflets etc. It is however, recommended that same may be revised and brought out in Hindi & other regional languages as per IS 8132: 1999 (Reaffirmed: 2019) for the sake of user & technical personnel.

18. CRITICAL TECHNICAL SPECIFICATION

Sl.No	Parameters	Specification	Observation
1.	Type of machine	Walk – behind	Walk – behind
2.	Effective width of cutter bar (mm)	1200(Min)	1200
3.	Number of crop dividers	5 (Min)	Five
4.	Type of knife section	Serrated	Serrated
5.	Number of knife section on cutter bar	24 (Min)	24
6.	Type of crop conveyer	Chain /sprockets	Chain/sprockets
7.	Number and type of wheel equipment	Two / Pneumatic	Two / Pneumatic
8.	Type of prime mover	Petrol engine	Petrol engine
9.	Minimum power of prime mover (kW)	2.0 to 4.5	3.75
10.	Material of knife section	High carbon steel EN42 J or above	Not specified
11.	Material of knife back	High carbon steel EN42 J or above	Not specified
12.	Material of ledger plate	High carbon steel EN42 J or above	Not specified
13.	Hardness of knife section HRC	48 to 58	51 to 57
14.	Hardness of ledger	45(Min)	52 to 56
15.	Provision for adjusting the height of cutter bar	Must be provided	Provided
16.	Guards against all moving parts /drives and hot parts	Must be provided	Provided
17.	Spark arrester in engine exhaust	Must be provided	Not provided
18.	Location and direction of exhaust emission to be away from the operator and	Must be provided away from the operator.	Provided

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	machine for satisfactory operation	
19.	Slip clutch/ safety pins at cutter bar drive	Must be provided Provided
20.	Slip clutch / safety pins at conveyor drive	Must be provided Provided
21.	Provision of row marker / crop guide	Must be provided Provided
22	Marking /labeling of machine	The labeling plate should be riveted on the body of machine having Name And Address Of Manufactures & Applicant , Country Of Origin , Make , Model , Year Of Manufacturer , Serial Number , Engine Number , Engine HP, Rated Rpm & SFC Provided
23	Literature	Operator manual , service manual and parts catalogue should be provided Provided

TESTING AUTHORITY:

D.C MOULI AGRICULTURAL ENGINEER	
P.KAMALABAI SENIOR AGRICULTURAL ENGINEER/ DIRECTOR(I/C)	