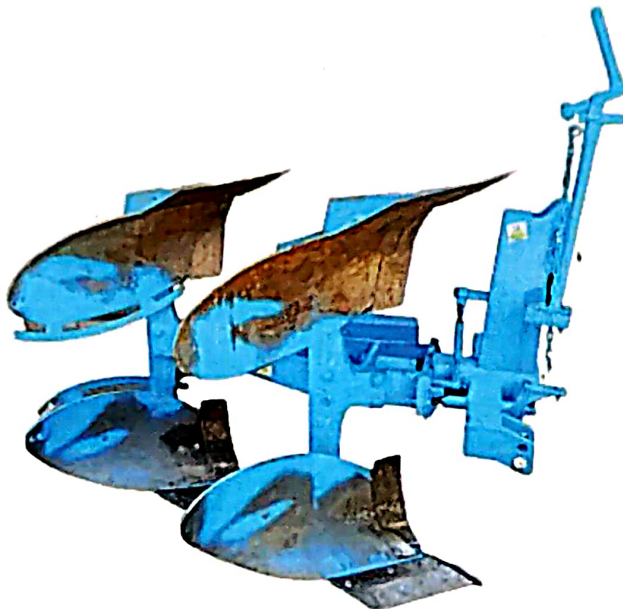




THIS TEST REPORT IS VALID UPTO 31.08.2031



VISHWAKARMA, VEPL, 2 BOTTOM MECHANICAL REVERSIBLE M.B. PLOUGH



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

उत्तर पूर्वी क्षेत्र कृषि यंत्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING & TESTING INSTITUTE

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[AN ISO 9001:2015 CERTIFIED INSTITUTION]

Imp. 324/503	VISHWAKARMA VEPL TWO BOTTOM MECHANICAL REVERSIBLE M.B. PLOUGH (Tractor Mounted)	COMMERCIAL (INITIAL)
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#### 4. SPECIFICATIONS

##### 4.1 General:

Name and address of the manufacturer : M/s Vishwakarma Engineering, Vagra,  
Dist.-Bharuch, Gujarat- 392 140

Test requested by (Applicant) : M/s Vishwakarma Engineering, Vagra,  
Dist.-Bharuch, Gujarat- 392 140

Name of the implement : M.B. Plough

Type : Two Bottom, Mechanical Reversible,  
Tractor mounted

Make : VISHWAKARMA

Model : VEPL

Serial Number of the implement : 24GVEPL05

Size of implement (mm) : 2 x 330

Year of manufacture : 2024

Country of origin : India

Power Source as recommended : 40 hp and above

**Prime Mover Used:**

Tractor : John Deere 5310 4WD

Chassis No./ Engine no. : 1PY5310ECLA049490/PY3029H143675

Max. PTO Power, kW : 36.4





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## 8. FIELD PERFORMANCE TEST

The implement was operated for 25.9 hours for assessing its field performance. Total five test trials were carried out and the detailed results have been given in Annexure and are summarized in ensuing Table. John Deere 5310 4WD tractor was used as prime -mover during field performance test.

### Summary of Field Performance Test

Sl.No.	Parameters/Operations	Observations
1.	Gear used	A-2
2.	Type of soil	Light
3.	Soil moisture (%)	8.4 to 10.8
4.	Bulk density of soil (g/cc)	1.57 to 1.66
5.	Previous treatment	Nil
6.	Engine speed (rpm) :	
	- No load	2556 to 2570
	- On load	2462 to 2477
7.	Speed of operation (kmph)	2.75 to 2.95
8.	Wheel slip (%)	10.6 to 12.3
9.	Depth of cut (cm)	25.3 to 27.3
10.	Working width (cm)	75.0 to 77.2
11.	Area covered (ha/h)	0.168 to 0.184
12.	Time required for one ha (h)	5.42 to 5.95
13.	Field efficiency (%)	78.77 to 81.55
14.	Fuel consumption	
	-l/h	5.98 to 6.4
	-l/ha	32.41 to 38.08
15.	Implement draft (kgf)	785 to 823
16.	Drawbar Power requirement (kW)	6.25 to 6.80

#### 8.1 Rate of work:

- The area covered was recorded as 0.168 to 0.184 ha/h at the average speed of operation was from 2.75 to 2.95 kmph.
- Time required to cover one hectare area was recorded as 5.42 to 5.95 h.

#### 8.2 Quality of work:

- The depth of cut was recorded as 25.3 to 27.3 cm.
- Average working width was observed as 75.0 to 77.2 cm.
- Field efficiency was observed as 78.77 to 81.55 %.

#### 8.3 Power requirement:

The average draft of the plough was recorded from 785 to 823 kgf and Drawbar power requirement was calculated as 6.25 to 6.80 kW.

#### 8.4 Labour requirement:

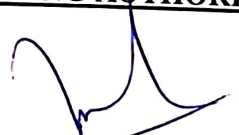
One skilled operator was needed to operate the tractor with the plough.



## 11. COMMENTS AND RECOMMENDATIONS

- 11.1 The dimensions of the share and share bar of plough do not conform to IS: 10691-1983. This should be looked into for corrective action.
- 11.2 The dimensions of hitch pyramid do not fully conform to IS: 4468-1997 (Part-1). Therefore, this should be looked into for corrective action for standardisation.
- 11.3 The chemical composition and hardness of plough share do not conform to IS: 10691-1983. This is recommended to look into for corrective action.
- 11.4 Total weight of the implement as mentioned on the labelling plate was 450 kg. However, observed weight was 430 kg. This should be looked into for corrective action.
- 11.5 Shares were not marked with particulars like manufacturer's name or recognized trade mark, size, type and batch or code number as per IS: 10691-1983. This should be looked into for corrective action.
- 11.6 **Technical literature:**  
Operator's manual and service manual covered in English was submitted along with the implement. However, it is recommended to bring out the same covered in Hindi and other vernacular languages as per IS: 8132-1999.

### TESTING AUTHORITY



(M.R. PATIL)

AGRICULTURAL ENGINEER



(P. KAMALABAI)

DIRECTOR



## 12. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's Comments
12.1	11.1 to 11.6	We will take the necessary action, according to the comments and recommendations in the test report, to improve future production.