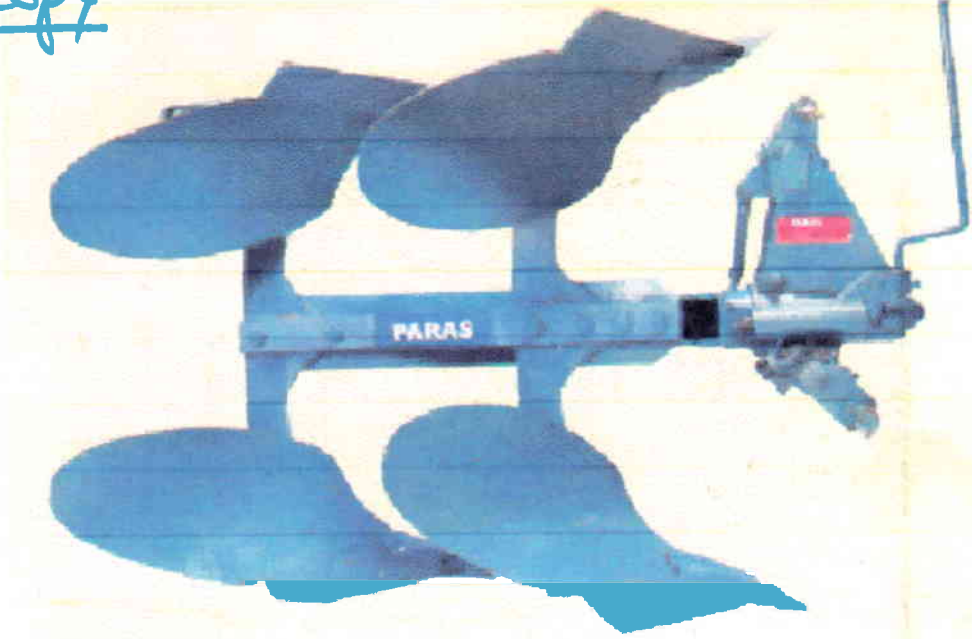


व्यावसायिक परीक्षण रिपोर्ट
COMMERCIAL TEST REPORT

संख्या/No. : Imp: 68/108
माह /Month : June, 2010

Master Copy



PARAS MODEL: 14" TWO BOTTOM MECHANICALLY REVERSIBLE M. B. PLOUGH
(Tractor Mounted)



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MINISTRY OF AGRICULTURE
(कृषि एवं सहकारिता विभाग)

(DEPARTMENT OF AGRICULTURE AND CO-OPERATION)

उत्तर पूर्वी क्षेत्र कृषि यन्त्र प्रशिक्षण एवं परीक्षण संस्थान

NORTH EASTERN REGION FARM MACHINERY TRAINING AND TESTING INSTITUTE

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1 SCOPE OF TEST

The scope of test was to check and assess the following:

1.1 Laboratory test

- Checking of specifications
- Hardness of soil engaging components
- Wear analysis of critical components
- Chemical analysis of critical components

1.2. Field test

- Quality of work
- Rate of work
- Labour requirement
- Power requirement
- Ease of operation and adjustments
- Breakdowns and repairs

2 METHOD OF SELECTION

The machine was directly submitted by the applicant for test at this Institute, therefore the method of selection is not known.

3 TEST PROCEDURE

1. IS: 6288 – 1971 -Test Code for Mould Board Plough (reaffirmed in 2009)
2. IS: 10691-1983 -Specification for Share For tractor- operated Mould board Ploughs (reaffirmed in 2006)
3. IS: 4468-1997 (Pt-I) - -Specification of Three-Point Linkage. (reaffirmed in 2007)

4 SPECIFICATIONS

4.1 GENERAL

Name of implement	:	Paras, Two Bottom, Mechanically Reversible, Mould Board Plough
Manufacturer	:	M/s Bothara Foundary and Machine Works, Plot No. 35 to 40, Industrial Estate, Nagar- Pune Road, Ahmednagar (Maharashtra) -414 005
Type of implement	:	Mounted Reversible type implement
Make	:	Paras
Model	:	14" (apa)
Year of manufacture	:	2009 (apa)
Serial No	:	271 (apa)
No. of plough bottom(s)	:	Two
Size of plough (mm)	:	2 x 360
Recommended source of power	:	Tractor of 45 hp and above

8.1.4 Labour requirement:

One skilled operator is needed to operate the tractor and the implement simultaneously.

8.1.5 Ease of Operation and Adjustments:


- a) The implement can be leveled by adjusting the top link easily from the operator's seat.
- b) The width of cut cannot be adjusted through the cross shaft as there is no provision for tilting its cranks.
- c) The implement cut, throw and invert the furrow slice completely & leaves clean furrow without disturbing the natural topography of the land. The overall field performance of the plough was found satisfactory.

9 DEFECTS, BREAKDOWNS AND REPAIRS

No breakdowns occurred during 50.96 hrs of operation during testing period

10. COMMENTS AND RECOMMENDATIONS

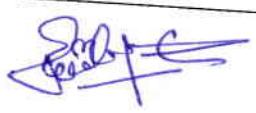
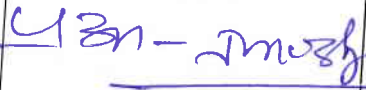

- 10.1 The specifications of plough share and share bar does not conform fully to the requirements of IS: 10691- 1983. The share should be modified to meet all the requirement of the relevant Indian Standard.
- 10.2 The specification of implement hitch pyramid conforms to the IS: 4468 (Pt-I)-1997 except the lower hitch point span of implement. It is recommended that the same should be modified conforming to the relevant IS.
- 10.3 All the components of the plough bottoms, except share bar are bolted as well as welded to the frog. The components such as share, landside, heal of landside etc., are soil engaging and fast wearing components. It is therefore, recommended that, the above components should be tightened with sunk headed/plough bolts and should not be welded for their easy replacement. This should be looked into.
- 10.4 The width of cut is not adjustable, through the cross shaft as it has no provision for tilting its cranks, it is therefore recommended that a suitable arrangement may be provided for rotating the cross shaft.
- 10.5 It has been noticed sometimes that the implement was not getting locked occasionally and operator had to get down from the tractor for this purpose. Therefore it is recommended that the locking mechanism may be made more effective.
- 10.6 To hold the reversing handle with better gripping during turning of plough suitable handle grip may be provided.
- 10.7 The size of prime mover (tractor) as used for test was found adequate. No over loading of prime mover engine was noticed during the entire test.

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11. PRINTED LITERATURE

No literature was supplied with the implement during testing. Hence, leaflet, operator's service manual and spare parts catalogue should be provided containing performance characteristics, special features, drawing and dimensions of the implement in English, Hindi and other regional languages for operator's use as per IS: 8132-1999. Separate literatures according to model should be provided with safety note, warnings, accessories and attachments, maintenance instruction and instruction for storage, handling transport, installation, etc. The cover should be of reasonable durability and should be of an appropriate size to protect the internal pages and the binding should be appropriate and durable for the intended usage.

TESTING AUTHORITY:

PRADIP MESHAM ASSISTANT ENGINEER (TESING)	
P.K.PANDEY SENIOR TEST ENGINEER	
M.K. VISHWAKARMA DIRECTOR	



12. APPLICANT'S COMMENTS

Para No.	Our Reference	Applicant's comments
12.1	10.1	We have now modified plough share and share bar.
12.2	10.2	We have now increased lower hitch point span.
12.3	10.3	We have now tightened the soil engaging and fast wearing components with sunk headed/ plough bolts.
12.4	10.4	We are now modifying the cross shaft, so that width of cut is adjustable.
12.5	10.5	We have now modified locking device.
12.6	10.6	We are now providing plastic handle grip for better griping.
12.7	11	We are supplying two printed literature in English all over. We will print all information in one booklet in vernacular languages for guidance to users.