

DRAFT EAST AFRICAN STANDARD

**Agricultural machinery — Mouldboard ploughs — Part 1: Specification
for animal drawn ploughs**

EAST AFRICAN COMMUNITY

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Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

In order to achieve this objective, the Community established an East African Standards Committee mandated to develop and issue East African Standards.

The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the private sectors and consumer organizations. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the procedures of the Community.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

DEAS 1178-1 was prepared by Technical Committee EASC/TC 042, *Production and general engineering*.

Agricultural machinery — Mouldboard ploughs — Part 1: Specification for animal drawn ploughs

1 Scope

This draft East African Standard specifies requirements for animal-drawn long-beam and short-beam mouldboard ploughs of fixed type, used for tilling land.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2859-1, Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
DEAS 1182, Agricultural machinery — Disc and moldboard ploughs — Test methods

3 Terms and definitions

For the purpose of this standard, the following definitions shall apply to both types of the plough unless otherwise stated:

3.1 beam

the part that transmits the pull of animals to the plough bottom

3.2 standard

the part of the long-beam plough which connects the bottom to the beam and to which the handle is also attached

N.B: The beam and the standard in the short-beam plough are a single part.

3.3 plough bottom

the lower part of the plough which includes the share, the mouldboard and the landside, all attached to the frog

3.4 frog

the central part of the plough to which various parts such as landside, mouldboard and the share are attached

3.5 landside

the part of the lough that slides against the furrow walls, providing lateral stability when in operation

3.6 mouldboard

the part that lifts and inverts the furrow slice

3.7 share

the part of the plough which penetrates the soil and cuts the furrow slice. It may be a single piece or may consist of replacement components

3.8 handle

The part for controlling and maneuvering the plough

3.9 gauge wheel

an adjustable wheel on the short-beam plough, attached to the beam by a strap, whose purpose is to prevent the plough from penetrating too deeply, and also for transportation

4 Sizes

4.1 Measurement of plough size

The size of the plough shall be measured as the shortest distance between the outermost edge point of the share wing and a straight edge placed along the landslide covering the entire length of the plough bottom. This is shown clearly in Figure 3.

4.2 There shall be four nominal sizes, on the assumption that plough size is proportional with the weight of the plough, namely;

- (i) Extra light – up to 100 mm.
- (ii) Light – over 100 mm but below 150 mm.
- (iii) Medium – 150 mm and above, but below 200 mm.
- (iv) Heavy – 200 mm and above.

5 Dimensions

5.1 Handle grips

5.1.1 The height of the handle grips of the plough shall be within the range of 900 mm and 1100 mm from the ground level.

5.1.2 The maximum cross-section dimension of the grip shall be between 25 mm and 50 mm and the length shall be not less than 125 mm.

5.1.3 The distance between the two grips shall be between 550 mm and 650 mm.

5.2 Gauge wheel

The diameter of the gauge wheel shall be not less than 125 mm and its face width not less than 38 mm.

6 Material requirements

6.1 Share and share point

The material shall preferably be medium carbon steel of minimum hardness 360 Brinell hardness number.

6.2 Beam

The material shall preferably be mild steel, and the beam shall be able to bear a load of 8 Kilo-newton without permanent deformation.

6.2.1 A safety device shall be incorporated in the linkage so that the surface load on the beam shall not exceed 8 Kilo-newton.

6.3 Other components of the plough

All other components of the plough shall be of mild steel except the gauge wheel which may be made of cast iron.

7 Visual examinations

The plough shall be visually inspected for workmanship. The following requirements shall be met by both types of the plough except where stated otherwise.

7.1 The heads of the fasteners used for securing the share and the mouldboard shall be flush with the working surfaces.

7.2 The maximum permissible gap between the contacting edges of the mouldboard and the share shall be 3 mm.

7.3 The gauge wheel shall roll smoothly with ease (for short-beam ploughs only).

7.4 There shall be no blow holes in the castings.

7.5 Suction

When the plough is assembled, adequate horizontal and vertical suction shall be maintained.

7.6 The form of the mouldboard shall enable smooth turning over the furrow slice.

8 Workmanship and finish

8.1 The surface of the parts of the plough shall be evenly dressed.

8.2 The plough shall be painted with anti-corrosion paint.

9 Marking

9.1 The plough shall be permanently marked with the following information:

- (i) Year of manufacture.
- (ii) Manufacturer's name and/or trade mark.
- (iii) Size of the plough.

9.2 The marking should be done on the beam.

10 Sampling

The mouldboard plough shall be sampled for inspection and testing in accordance with ISO 2859-1.

11 Test methods

The sampled ploughs shall be tested in accordance with DEAS 1182.

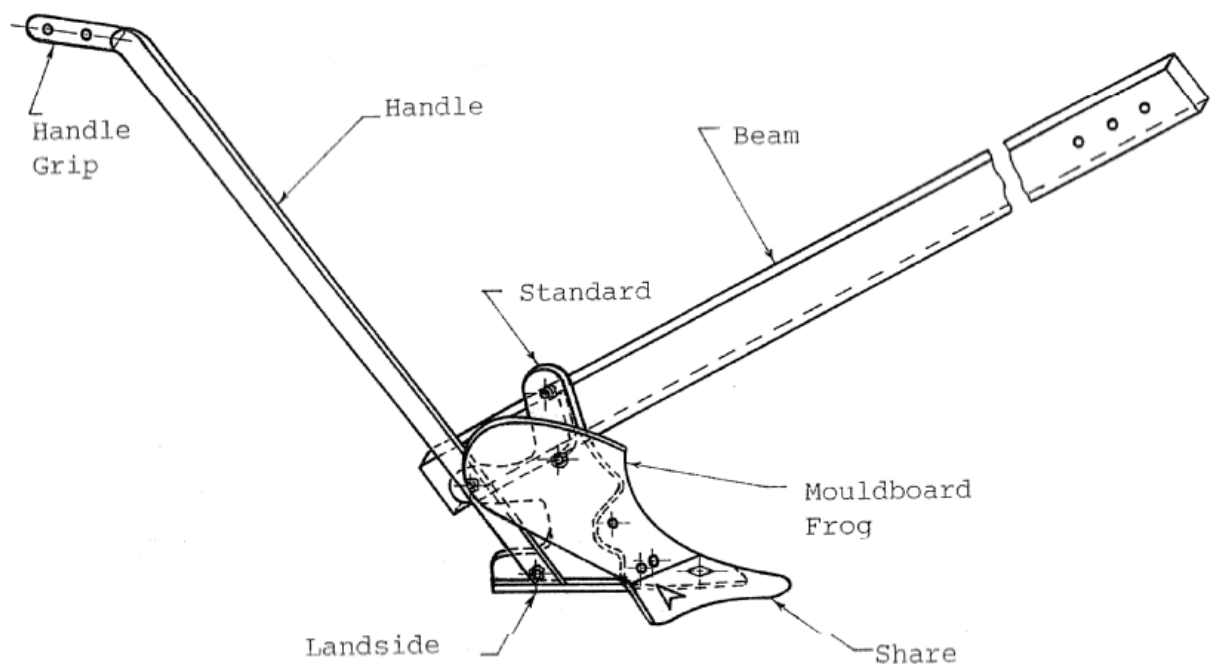


Figure 1 — Nomenclature of main parts of mouldboard plough – Fixed type (Long beam – Not to scale)

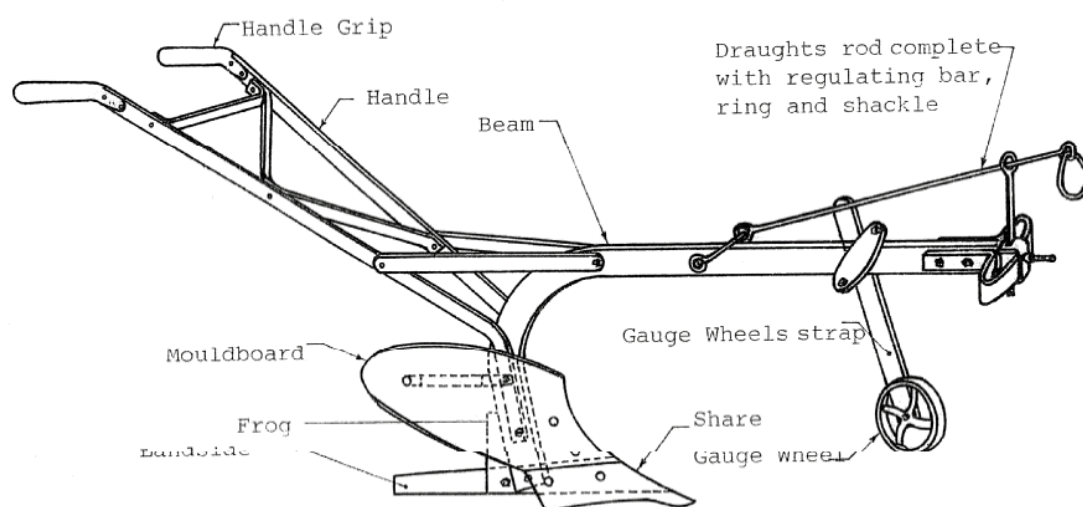


Figure 2 — Nomenclature of main parts of mouldboard plough – Fixed type (Short beam – Not to scale)

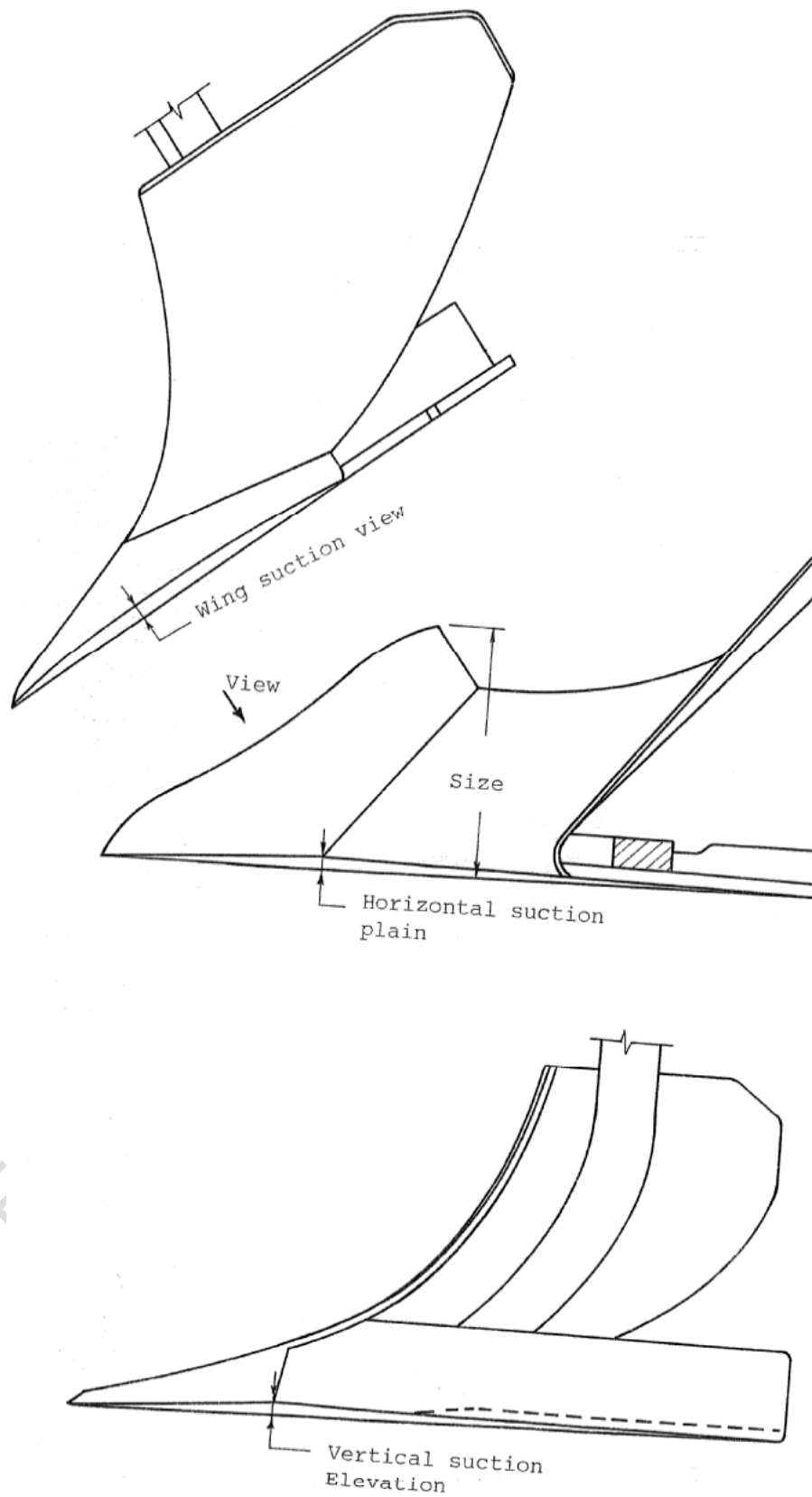


Figure 3 — Measurement of the mouldboard plough and the suction clearances

Bibliography

- 1) KS 06-252:1982 Specification for animal-drawn mouldboard plough, fixed type
- 2) TZS 243:1984, Farm implements – Single furrow animal drawn plough shares – Specification
- 3) TZS 244:1984, Farm implements – Method of sampling

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