

Glossary of

# Terms and classification relating to agricultural machinery and implements —

Part 3: Soil working equipment

# Committees responsible for this British Standard

The preparation of this British Standard was entrusted to Technical Committee AGE/11, Glossary for agricultural machinery and implements, upon which the following bodies were represented:

- Agricultural Engineers' Association
- British Agricultural and Garden Machinery Association Ltd.
- Intermediate Technology Development Group
- Local Authority Organizations
- Ministry of Agriculture, Fisheries and Food
- National Farmers' Union
- Royal Agricultural College
- Royal Agricultural Society of England
- Scottish Centre for Agricultural Engineering (SCAE)
- Seale-Hayne Agricultural College
- Silsoe Research Institute

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## Foreword

This Part of BS 2468 has been prepared by Technical Committee AGE/11 and it supersedes those clauses of BS 2468:1963 relating to equipment for working the soil. When the revision of BS 2468:1963 is complete it is envisaged that it will consist of the following Parts and BS 2468:1963 will be withdrawn.

- *Part 1: Power and tractive units;*
- *Part 2: Equipment for land reclamation;*
- *Part 3: Soil working equipment;*
- *Part 4: Equipment for sowing and planting;*
- *Part 5: Equipment for applying fertilizers, soil conditioners and water;*
- *Part 6: Equipment for plant care and protection;*
- *Part 7: Equipment for harvesting;*
- *Part 8: Post-harvesting equipment;*
- *Part 9: Equipment for handling, transport and storage;*
- *Part 10: Equipment for livestock production;*
- *Part 11: Miscellaneous farmstead equipment.*

The classification used in this revision of BS 2468 is similar to that used in ISO 3339-0 *Tractors and machinery for agriculture and forestry — Classification and terminology — Part 0: Classification system and classification*.

BS 2468:1963 was drawn up with a view to standardizing the vocabulary used to describe agricultural tractors and machinery, and the foreword stated that the need arose from “the very prevalent use of synonyms, some often purely local in origin and application”.

The contents of BS 2468:1963 are now out of date, and the need for consistent terminology has increased. The International Organization for Standardization Committee ISO/TC 23/SC 1<sup>1)</sup> began work on a classification of terminology for agricultural and forestry tractors and machinery, but progress has been slow, and to date only the classification (ISO 3339-0) has been published.

Meanwhile, the use of computer information services relying on keywords for searching is increasing, and trade with the rest of Europe is set to expand following the removal of trade barriers in 1992. For both these applications, a standard terminology for agricultural machinery and implements is urgently required. Within education too, an up-to-date vocabulary is sorely needed, and it has been decided to continue with a revision of the British Standard without waiting for the rest of ISO 3339, but using the existing classification as a framework for grouping terms.

The terminology used in this Part is based on what is believed to be current usage in UK agriculture, horticulture and forestry, but also takes into account terminology used in Government Regulations, British and International Standards in these and related fields. The documents referred to are listed in the bibliography.

<sup>1)</sup> Now disbanded.

The term “machine” is used wherever there is a drive into the device from the tractor or power unit power take-off, e.g. a power take-off driven rotary cultivator is a machine. The term “implement” is used wherever there is no drive into the device or where the drive is obtained from soil contact, e.g. disc harrow.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

**Compliance with a British Standard does not of itself confer immunity from legal obligations.**

### Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 42, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

# Section 1. General

## 1.1 Scope

This Part of BS 2468 describes the terminology and definitions used in relation to the cultivation and processing of soils for arable and horticultural crops, but excludes equipment for land reclamation and equipment for sowing and planting.

Although the classification is similar to that used in ISO 3339-0, details of some of those items have been omitted because they are not considered to be in general use in the UK. These items are marked with an asterisk (\*). Some general definitions have also been included although these are not part of ISO 3339-0.

## 1.2 Informative reference

This Part of BS 2468 refers to another publication that provides information or guidance. The edition of this publication current at the time of issue of this standard is listed on the inside back cover but reference should be made to the latest edition.

## 1.3 Guidance on the structure and use of the glossary

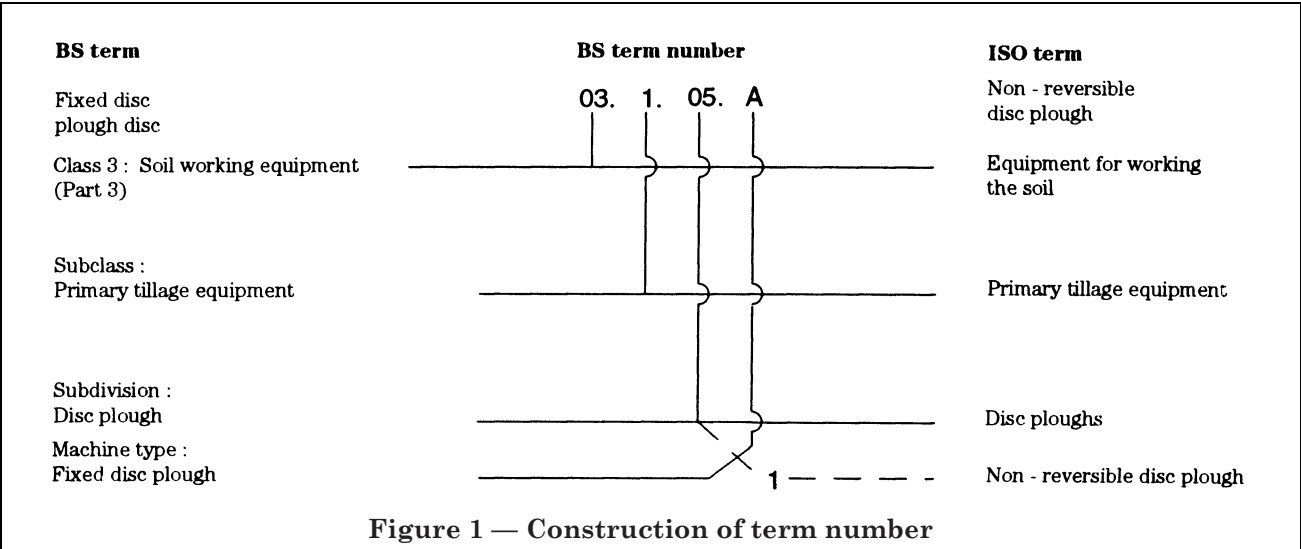
### 1.3.1 Term number and classification system

Each term is given a unique reference to its place in the glossary by means of an alphanumeric term number. This term number is based on the numeric classification system developed for agricultural and forestry tractors and machinery in ISO 3339-0. In this ISO system initial grouping of terms is made according to the primary processing function. This primary grouping is divided into 11 classes which are designated by a two digit number 01 through to 11 as follows and which correspond to the Parts of this standard:

- Class 01: Power and tractive units
- Class 02: Equipment for land reclamation
- Class 03: Equipment for working the soil
- Class 04: Equipment for sowing and planting
- Class 05: Equipment for applying fertilizers, soil conditioners and water
- Class 06: Equipment for plant care and protection
- Class 07: Equipment for harvesting
- Class 08: Post-harvesting equipment
- Class 09: Equipment for handling, transport and storage
- Class 10: Equipment for livestock production
- Class 11: Miscellaneous farmstead equipment

Each of these primary classes is divided into subclasses up to a maximum of 9 which are designated by a single digit separated from the primary class by a point marker. Further subdivisions are made as required by the addition of one or two digit numbers separated by point markers from the previous subclass.

However, because of the limitations of the ISO system, particularly in relation to UK usage and terminology, it was agreed for the purposes of the UK glossary to only use the ISO classification down to the third level, i.e. class, subclass and first subdivision. Thereafter and where the UK terminology differs, this difference in classification is shown by the use of a capital letter with point markers in alphabetical order in place of the ISO numeric subdivision, where required. Subsequent subdivisions revert to numeric digit(s) separated by point markers, as required.



A subclass 0, which does not exist in the ISO system, has also been introduced to cover general definitions. The construction of the term number is shown in Figure 1.

1.3.2 Classification scheme

Table 1, in section 2, lists terms in classification order using the BS term number (see column 1). This is followed by the UK term in column 2 and, where this is different, the equivalent ISO term follows in brackets.

An asterisk against the term indicates that the term is listed in the ISO classification but is not in common usage in the UK and has therefore not been defined in this glossary.

Where there is an equivalent ISO classification number it is listed in the final column.

1.3.3 Terminology

In section 3 definitions of terms in UK usage are given in classification order. Notes and figures, where given, provide additional information but do not form part of the definition of a term. Words that are defined elsewhere in the same document are italicized when they appear in a definition, unless they are used in a dictionary sense rather than as a specialized agricultural term.

Deprecated terms and abbreviations are given below the preferred term along with their status. They are not separately numbered but are all listed in the index with a reference to the preferred term number.

In most cases, terms are defined in the singular, even when the plural form is the more common. However, where items always occur in multiples the plural form is used.

1.3.4 Index

Terms are listed alphabetically in the index and are followed by the term number. Deprecated terms and abbreviations are given but are listed with a reference to the preferred term number.

## Section 2. Classification scheme

Table 1 — List of terms in classified order

| British Standard term no. | Term (* indicates term not defined in the British Standard)        | ISO 3339-0 class number |
|---------------------------|--------------------------------------------------------------------|-------------------------|
| 03                        | <b>Soil working equipment</b> (ISO Equipment for working the soil) |                         |
| 03.0                      | <b>General definitions</b>                                         |                         |
| 03.0.01                   | Coulter                                                            | —                       |
| 03.0.02                   | Tine                                                               | —                       |
| 03.0.03                   | Tine point                                                         | —                       |
| 03.0.05                   | Share                                                              | —                       |
| 03.0.06                   | Wing                                                               | —                       |
| 03.0.07                   | Depth wheel                                                        | —                       |
| 03.0.08                   | Crumbler                                                           | —                       |
| 03.0.09                   | Packer                                                             | —                       |
| 03.0.10                   | Marker                                                             | —                       |
| 03.0.11                   | Gang                                                               | —                       |
| 03.0.12                   | Draught                                                            | —                       |
| 03.0.13                   | Mouldboard                                                         | —                       |
| 03.1                      | <b>Primary tillage equipment</b>                                   | 03.1                    |
| 03.1.01                   | Heavy duty plough*                                                 | 03.1.01                 |
| 03.1.02                   | Subsoiler (ISO subsoiling plough)                                  | 03.1.02                 |
| 03.1.02.A                 | Rigid tine subsoiler                                               | 03.1.02.1               |
| 03.1.02.B                 | Vibrating leg subsoiler (ISO vibrating tine subsoiler)             | 03.1.02.2               |
| 03.1.03                   | Rotary plough (power driven)*                                      | 03.1.03                 |
| 03.1.04                   | Mouldboard plough                                                  | 03.1.04                 |
| 03.1.04.A                 | Fixed mouldboard plough (ISO non-reversible mouldboard plough)     | 03.1.04.1               |
| 03.1.04.B                 | Reversible mouldboard plough                                       | 03.1.04.2               |
| 03.1.04.C                 | Pivot beam reversible plough (ISO swing plough)                    | 03.1.04.1.1             |
| 03.1.04.D                 | Vineyard plough                                                    | 03.1.04.1.6             |
| 03.1.05                   | Disc plough                                                        | 03.1.05                 |
| 03.1.05.A                 | Fixed disc plough (ISO non-reversible)                             | 03.1.05.1               |
| 03.1.05.B                 | Reversible disc plough                                             | 03.1.05.2               |
| 03.1.05.C                 | Polydisc plough                                                    | —                       |
| 03.1.05.D                 | Disc cultivator                                                    | —                       |
| 03.1.06                   | Spading machine                                                    | 03.1.06                 |
| 03.1.07                   | Heavy duty tine cultivator (ISO chisel)                            | 03.1.07                 |
| 03.1.08                   | Rotary cultivator (ISO rotary tiller)                              | 03.1.08                 |
| 03.1.08.A                 | Rotary, horizontal rotor cultivator                                | 03.1.08.1               |
| 03.1.08.A.1               | Power driven, horizontal rotor cultivator                          | —                       |
| 03.1.08.A.2               | Draught driven, horizontal rotor cultivator                        | —                       |
| 03.1.08.B                 | Rotary, vertical rotor cultivator                                  | 03.1.08.2               |
| 03.1.08.B.1               | Power driven, vertical rotor cultivator                            | —                       |
| 03.1.08.B.2               | Draught driven, vertical rotor cultivator                          | —                       |
| 03.1.08.C                 | Powered cultivator                                                 | —                       |

Table 1 — List of terms in classified order

| British Standard term no. | Term (* indicates term not defined in the British Standard)   | ISO 3339-0 class number |
|---------------------------|---------------------------------------------------------------|-------------------------|
| 03.1.08.D                 | Reciprocating harrow                                          | —                       |
| 03.1.09                   | Stubble plough*                                               | 03.1.09                 |
| 03.1.10                   | Puddling roller and cage wheel*                               | 03.1.10                 |
| 03.2                      | <b>Seed-bed preparation equipment</b>                         | 03.2                    |
| 03.2.01                   | Disc harrow                                                   | 03.2.01                 |
| 03.2.01.A                 | Single row disc harrow                                        | 03.2.01.1               |
| 03.2.01.B                 | Tandem disc harrow                                            | 03.2.01.2               |
| 03.2.01.C                 | Offset disc harrow                                            | 03.2.01.3               |
| 03.2.01.D                 | Rotary harrow                                                 | —                       |
| 03.2.02                   | Tined cultivator (ISO cultivator)                             | 03.2.02                 |
| 03.2.02.A                 | Rigid tine cultivator                                         | 03.2.02.1               |
| 03.2.02.B                 | Spring tine cultivator                                        | 03.2.02.3               |
| 03.2.02.C                 | Spring-loaded tine cultivator                                 | 03.2.02.2               |
| 03.2.03                   | Light harrow (ISO finishing harrow)                           | 03.2.03                 |
| 03.2.03.A                 | Rigid tine harrow                                             | 03.2.03.1               |
| 03.2.03.B                 | Zig-zag harrow                                                | —                       |
| 03.2.03.C                 | Levelling harrow                                              | —                       |
| 03.2.03.D                 | Chain harrow                                                  | 03.2.03.1.1             |
| 03.2.03.E                 | Rolling harrow                                                | 03.2.03.3               |
| 03.2.04                   | Float*                                                        | 03.2.04                 |
| 03.2.05                   | Ridger and bedmaker (ISO ridger)                              | 03.2.05                 |
| 03.2.05.A                 | Mouldboard ridger                                             | 03.2.05.1               |
| 03.2.05.B                 | Disc ridger                                                   | 03.2.05.2               |
| 03.2.05.C                 | Rotary ridger                                                 | 03.2.05.3               |
| 03.2.06                   | Roller                                                        | 03.2.06                 |
| 03.2.06.A                 | Flat roller                                                   | 03.3.06.1.1             |
| 03.2.06.B                 | Coil roller                                                   | 03.2.06.1.5             |
| 03.2.06.C                 | Cambridge roller                                              | 03.2.06.2.1             |
| 03.2.06.D                 | Crosskill roller                                              | 03.2.06.2.4             |
| 03.2.06.E                 | Furrow press                                                  | 03.2.06.2.3             |
| 03.2.06.F                 | Land packer                                                   | 03.2.06.2.5             |
| 03.2.07                   | Combination cultivator (ISO combination cultivation machines) | 03.2.07                 |
| 03.2.07.A                 | Powered combination cultivator                                | —                       |
| 03.2.07.B                 | Draught combination cultivator                                | —                       |
| 03.3                      | <b>Row-crop cultivation equipment</b>                         | 03.3                    |
| 03.3.01                   | Weeder                                                        | 03.3.01                 |
| 03.3.01.A                 | Fixed share type hoe                                          | 03.3.02.1               |
| 03.3.01.B                 | Rotary weeder                                                 | 03.3.01.2               |
| 03.3.01.C                 | Flame weeder                                                  | 03.3.01.3               |
| 03.3.01.D                 | Brush weeder                                                  | —                       |
| 03.3.02                   | Hoeing machine*                                               | 03.3.02                 |
| 03.3.03                   | Bedder (covering plough)*                                     | 03.3.03                 |

Table 1 — List of terms in classified order

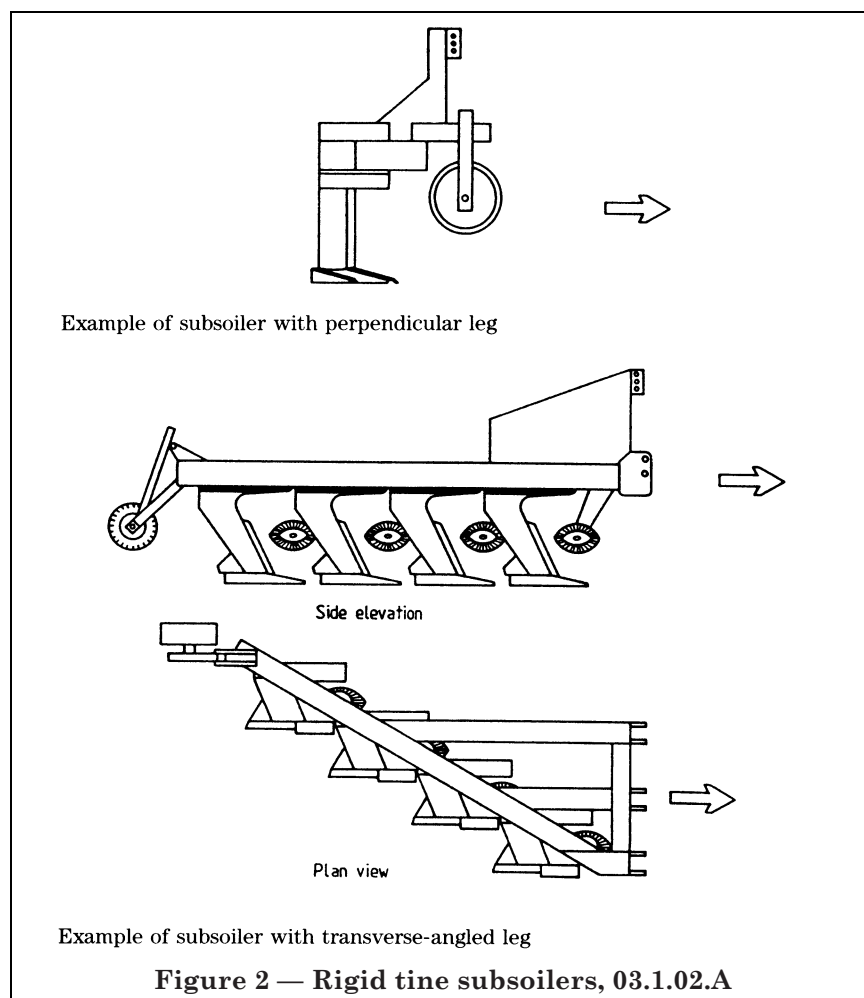
| British Standard term no. | Term (* indicates term not defined in the British Standard)              | ISO 3339-0 class number |
|---------------------------|--------------------------------------------------------------------------|-------------------------|
| 03.3.04                   | Ridge buster (ISO uncovering plough)                                     | 03.3.04                 |
| 03.3.04.A                 | Mouldboard type ridge buster                                             | —                       |
| 03.3.04.B                 | Disc type ridge buster                                                   | —                       |
| 03.3.05                   | Crop sensing device*                                                     | 03.3.05                 |
| 03.4                      | <b>Horticultural soil and compost processing equipment</b>               | 03.4                    |
| 03.4.01                   | Shredder (ISO soil shredder)                                             | 03.4.01                 |
| 03.4.02                   | Sifter (ISO soil sifter)                                                 | 03.4.02                 |
| 03.4.02.A                 | Vibrating grid sifter                                                    | —                       |
| 03.4.02.B                 | Rotary drum sifter                                                       | —                       |
| 03.4.03                   | Composting machine                                                       | 03.4.03                 |
| 03.4.03.A                 | Drum type composting machine                                             | —                       |
| 03.4.03.B                 | Elevator type composting machine                                         | —                       |
| 03.4.03.C                 | Hybrid drum and elevator type composting machine                         | —                       |
| 03.4.04                   | Compost mixer                                                            | 03.4.04                 |
| 03.4.04.A                 | Drum type compost mixer                                                  | —                       |
| 03.4.04.B                 | Elevator type compost mixer                                              | —                       |
| 03.4.04.C                 | Paddle type compost mixer                                                | —                       |
| 03.4.04.D                 | Casing mixer                                                             | —                       |
| 03.4.05                   | Blocking equipment (ISO soil block presses)                              | 03.4.05                 |
| 03.4.05.A                 | Hand blocking press                                                      | —                       |
| 03.4.05.B                 | Mechanical blocking machine                                              | —                       |
| 03.4.06                   | Pot and tray filling machine [ISO potting machine (pot filling machine)] | 03.4.06                 |
| 03.4.06.A                 | Recycling pot and tray filling machine                                   | —                       |
| 03.4.06.B                 | Metered pot filling machine                                              | —                       |
| 03.4.07                   | Pot and lattice tray soil compactor*                                     | 03.4.07                 |
| 03.4.08                   | Compost processing machine                                               | 03.4.08                 |
| 03.4.08.A                 | Mushroom head filling machine                                            |                         |
| 03.9                      | Other soil working equipment (ISO other equipment for working the soil)* | 03.9                    |

## Section 3. Terminology

| No.                                                                                                                                                             | Term                                      | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>03 Soil working equipment</b>                                                                                                                                |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>03.0 General definitions</b>                                                                                                                                 |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>03.0.01</b>                                                                                                                                                  | <b>coulter</b>                            | On a plough or <i>subsoiler</i> a device to cut the soil vertically.                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>03.0.02</b>                                                                                                                                                  | <b>tine</b>                               | A member connecting a <i>tine point</i> to the frame.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>03.0.03</b>                                                                                                                                                  | <b>tine point</b>                         | The replaceable soil engaging component of the <i>tine</i> which starts the separation and soil mixing process.                                                                                                                                                                                                                                                                                                                                                            |
| <b>03.0.04</b>                                                                                                                                                  | <b>frame</b>                              | The main members of the implement which support the soil-engaging component.                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>03.0.05</b>                                                                                                                                                  | <b>share</b>                              | A part of a plough, <i>subsoiler</i> or cultivator <i>tine</i> which enters the soil and makes a substantially horizontal cut below the surface.                                                                                                                                                                                                                                                                                                                           |
| <b>03.0.06</b>                                                                                                                                                  | <b>wing</b>                               | An inclined or horizontal plate fitted at either side of the foot of a <i>subsoiler</i> to give additional transverse soil loosening.                                                                                                                                                                                                                                                                                                                                      |
| <b>03.0.07</b>                                                                                                                                                  | <b>depth wheel</b>                        | A wheel to control the depth of operation of a machine or implement.                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>03.0.08</b>                                                                                                                                                  | <b>crumbler</b>                           | A cylindrical roll in the form of an open cage wheel, usually fitted behind an implement for fragmenting and firming the soil.                                                                                                                                                                                                                                                                                                                                             |
| <b>03.0.09</b>                                                                                                                                                  | <b>packer</b>                             | A roll with alternate smooth sections divided by spiked projections and fitted with scrapers.<br>NOTE Usually fitted behind an implement to consolidate the soil.                                                                                                                                                                                                                                                                                                          |
| <b>03.0.10</b>                                                                                                                                                  | <b>marker</b>                             | A device which marks the soil for the driver to follow on the next pass or bout.                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>03.0.11</b>                                                                                                                                                  | <b>gang</b>                               | An assembly of two or more similar soil acting implements linked together to act as a larger working unit.                                                                                                                                                                                                                                                                                                                                                                 |
| <b>03.0.12</b>                                                                                                                                                  | <b>draught</b><br>draft <i>deprecated</i> | Pull required to move a device through the soil.                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>03.0.13</b>                                                                                                                                                  | <b>mouldboard</b>                         | A part of a plough to turn and in some cases to break a furrow slice.                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>0.3.1 Primary tillage equipment</b>                                                                                                                          |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| NOTE Equipment for initial soil working i.e. heavy cultivation equipment for loosening, inverting, fragmenting, shattering, burying and mixing in crop residue. |                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>03.1.01</b>                                                                                                                                                  | <b>heavy duty plough*</b>                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>03.1.02</b>                                                                                                                                                  | <b>subsoiler</b>                          | An implement with one or more long narrow legs fitted with wedge-shaped <i>shares</i> for loosening soil to depths of 250 mm to 600 mm, i.e. below conventional ploughing depths. The implement loosens soil without inversion and with minimum mixing. There may be a tapered cutting edge running the full length of the leg, and <i>wings</i> may be fitted to the rear of the share. A subsoiler may be fitted with disc <i>coulters</i> to cut through surface trash. |

| No.       | Term                        | Definition                                                                                                                                                                                                                               |
|-----------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03.1.02.A | <b>rigid tine subsoiler</b> | A <i>subsoiler</i> with rigid legs which may be perpendicular or at an angle to the ground, or mounted at a transverse angle to direction of travel, may be of equal length or progressively longer from front to rear of the implement. |

NOTE See Figure 2.



| No.       | Term                           | Definition                                                                                                                                                                                       |
|-----------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03.1.02.B | <b>vibrating leg subsoiler</b> | A <i>subsoiler</i> fitted with a power take-off driven eccentric mechanism to produce vertical or horizontal reciprocation of individual <i>shares</i> or of the entire implement <i>frame</i> . |

NOTE See Figure 3.

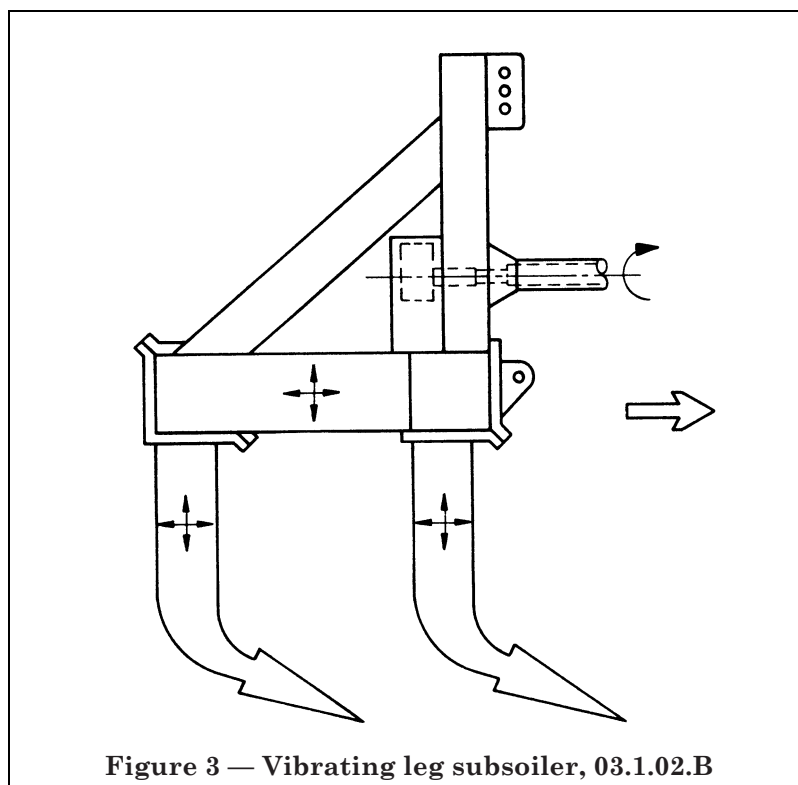


Figure 3 — Vibrating leg subsoiler, 03.1.02.B

03.1.03 **rotary plough  
(power driven)\***

NOTE See 03.1.08, for powered rotary cultivators.

03.1.04 **mouldboard plough**

An implement to cut, turn and, in some cases, fragment or shatter furrow slices, with complete or partial soil inversion. It functions by means of two components: the *share* which cuts soil horizontally and begins to lift it and the *mouldboard* which completes the lifting and inversion process. Together, these make up the plough body, one or more of which are attached to an angled beam, which may be mounted on the front or rear of a tractor.

Each plough body can incorporate a protective mechanism allowing it to pivot back and pass over obstructions such as tree stumps and large stones. The mechanism may be of three types: the spring trip which stretches and then pulls the body back into the working position; the shear bolt which is designed to fail at a loading lower than that which will damage the components it secures, and which has to be manually replaced; a hydraulic reset system, where the pivoting body forces a piston along a cylinder and is then returned to its working position by hydraulic pressure.

| No.       | Term                           | Definition                                                                                                                                                                             |
|-----------|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 03.1.04.A | <b>fixed mouldboard plough</b> | A <i>mouldboard plough</i> consisting of a single line of plough bodies, mounted along a beam or frame which always turn furrow slices to the same side in relation to forward travel. |

NOTE See Figure 4.

