

Garden equipment — Hand held, integrally powered hedge trimmers — Safety

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Committees responsible for this British Standard

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- AFRC Institute of Engineering Research
- Agricultural Engineers' Association
- Association for Consumer Research (ACRE)
- British Agricultural and Garden Machinery Association Ltd.
- British Lawnmower Manufacturers' Federation
- BSI Staff
- Consumer Policy Committee of BSI
- Consumers' Association
- Department of Trade and Industry (Consumer Safety Unit, CA Division)
- Health and Safety Executive
- Institute of Leisure and Amenity Management
- Local Authority Organizations
- National Turfgrass Council
- Royal Society for the Prevention of Accidents
- Silsoe Research Institute

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National foreword

This British Standard has been prepared by Technical Committee AGE/20 and is the English language version of EN 774:1996 *Garden Equipment — Hand held, integrally powered hedge trimmers — Safety*, including amendments A1:1997, A2:1997 and A3:2001, published by the European Committee for Standardization (CEN). EN 774 was produced as a result of international discussions in which the United Kingdom took an active part.

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Cross-references

Publication referred to	Corresponding British Standard
	BS EN 292 <i>Safety of machinery. Basic concepts, general principles for design</i>
EN 292-1:1991	Part 1:1991 <i>Basic terminology, methodology</i>
EN 292-2:1991	Part 2:1991 <i>Technical principles and specifications</i>
EN 294:1992	BS EN 294:1992 <i>Safety of machinery. Safety distances to prevent danger zones being reached by the upper limbs</i>
EN 563:1994	BS EN 563:1994 <i>Safety of machinery. Temperatures of touchable surfaces. Ergonomics data to establish temperature limit values for hot surfaces</i>
	BS EN 50144 <i>Safety of hand held electric motor operated tools</i>
EN 50144-1:1995	Part 1:1996 <i>General requirements</i>
	BS EN ISO 3767 <i>Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays</i>
ISO 3767-1:1991	Part 1:1996 <i>Common symbols</i>
ISO 3767-3:1995	Part 3:1996 <i>Symbols for powered lawn and garden equipment</i>

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, the EN title page, pages 2 to 39 and a back cover.

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English version

Garden equipment — Hand held, integrally powered hedge trimmers — Safety

(includes amendments A1:1997, A2:1997 and A3:2001)

Matériel de jardinage — Tailles-haies portatifs à moteur incorporé — Sécurité
(inclut les amendements A1:1997, A2:1997 et A3:2001)

Gartengeräte — Tragbare motorbetriebene Heckenscheren — Sicherheit
(enthält Änderungen A1:1997, A2:1997 und A3:2001)

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Foreword

This European Standard was prepared by Technical Committee CEN/TC144, Tractors and machinery for agriculture and forestry, the Secretariat of which is held by AFNOR.

This European Standard shall be given the status of national standard, either by publication of an identical text or by endorsement, at least by October 1996, and conflicting national standards shall be withdrawn at the latest by October 1996.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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Foreword to amendment A1

This amendment EN 774:1996/A1:1997 to the EN 774:1996 has been prepared by Technical Committee CEN/TC 144, Tractors and machinery for agriculture and forestry, the Secretariat of which is held by AFNOR.

This amendment to the European Standard EN 774:1996 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 1997, and conflicting national standards shall be withdrawn at the latest by August 1997.

This amendment fulfils the “under study NOTE” which is located after the first paragraph of the present text of 4.2 and at the same time will ensure total compatibility with the equivalent CENELEC standard. Similar text is also proposed for the ISO and IEC standards for hedge trimmers.

This amendment to the European Standard EN 774:1996 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this amendment: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Foreword to amendment A2

This amendment EN 774:1996/A2:1997 to EN 774:1996 has been prepared by Technical Committee CEN/TC 144 Tractors and machinery for agriculture and forestry, the Secretariat of which is held by AFNOR.

This amendment to the European Standard EN 774:1996 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.

This amendment fulfils the “under study” NOTE which is located at the end of the present text of 4.1.5 Blade stopping time. As this amendment includes a figure existing subsequent Figure 10 is renumbered Figure 11.

This amendment to the European Standard EN 774:1996 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Foreword to amendment A3

This amendment EN 774:1996/A3:2001 to EN 774:1996 has been prepared by Technical Committee CEN/TC 144, Tractors and machinery for agriculture and forestry, the Secretariat of which is held by AFNOR.

This amendment to the European Standard EN 774:1996 shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2001, and conflicting national standards shall be withdrawn at the latest by September 2001.

This amendment to the European Standard EN 774:1996 has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this standard.

This amendment which specifically deals with vibration and noise, replaces the notes in the right hand column of Table A.1 against hazard items **4.1**, **4.2** and **5** listed in the left hand column.

Annex C and Annex D are normative, Annex E is informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

The extent to which hazards are covered is indicated in the scope of this standard. In addition machinery shall comply as appropriate with EN 292 for hazards which are not covered by this standard.

1 Scope

This European Standard specifies safety requirements and their verification for design and construction of hand held integrally driven powered hedge trimmers, which are designed for use by one operator, for trimming hedges and bushes utilizing one or more linear reciprocating cutter blades.

It describes methods for the elimination or reduction of hazards arising from their use. In addition, it specifies the type of information to be provided by the manufacturer on safe working practices.

This standard is not applicable to hedge trimmers with rotating blades or hedge trimmers powered by back-pack or other external power source.

The electrical safety aspects of mains powered electric hedge trimmers are covered by EN 50144-1 and prEN 50144-2-15.

The safety aspects of batteries and the electrical safety aspects of battery powered hedge trimmers are not covered by this standard.

The list of significant hazards dealt with in this standard is given in Annex A. Annex A also indicates the hazards which have not been dealt with.

Environmental aspects have not been considered in this standard.

This European Standard applies primarily to machines which are manufactured after the date of issue of the standard.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 292-1:1991, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*.

EN 292-2:1991, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications*.

EN 292-2:1991/A1:1995, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles and specifications*.

EN 294:1992, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*.

EN 563:1994, , *Safety of machinery — Temperatures of touchable surfaces — Ergonomics data to establish temperature limit values for hot surfaces*.

EN 28662-1:1992, *Hand-held portable power tools — Measurement of vibrations at the handle — Part 1: General* (ISO 8662-1:1988).

EN 50144-1:1995, *Safety of hand-held motor-operated electrical tools — Part 1: General requirements*.

prEN 50144-2-15:1994, *Safety of hand-held electric motor operated tools — Part 2-15: Particular requirements for hedge trimmers*.

EN ISO 354:1993, *Acoustics — Measurement of sound absorption in a reverberation room* (ISO 354:1985).

EN ISO 3744:1995, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane* (ISO 3744:1994).

EN ISO 11201:1995, *Acoustics — Noise emitted by machinery and equipment — Measurement of emission sound pressure levels at a work station and at other specified positions — Engineering method in an essentially free field over a reflecting plane* (ISO 11201:1995).

EN ISO 11688-1:1998, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 1: Planning* (ISO/TR 11688-1:1995).

ISO 3767-1:1991, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 1: Common symbols*.

ISO 3767-3:1995, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Symbols for operator controls and other displays — Part 3: Symbols for powered lawn and garden equipment*.

ISO 3864:1984, , *Safety colours and safety signs*.

ISO 7293:1997, *Forestry machinery — Portable chain saws — Engine performance and fuel consumption*.

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1

petrol hedge trimmer

hedge trimmer powered by petrol

NOTE Typical examples are shown in Figure 1a) and Figure 1b).

3.2

electric hedge trimmer

hedge trimmer powered by electricity

NOTE A typical example is shown in Figure 1c).

3.3

blade tooth

the part of the cutter blade which is sharpened to perform the shearing action (see Figure 2)

3.4

cutter blade

a part of the cutting device having blade teeth which cut by shearing action either against other blade teeth or against a shear plate (see Figure 2)

3.5

cutting device

that part of the assembly of cutter blade and shear plate, or the cutter blades together with any supporting part, which performs the cutting action

NOTE This device may be single or double sided (see Figure 2)

3.6

cutting length

the effective cutting length of the cutting device measured from the inside edge of the first blade tooth or shear plate tooth to the inside edge of the last blade tooth or shear plate tooth (see Figure 3)

NOTE Where both blades move the measurements should be taken when the first and last teeth are furthest apart.

3.7

front handle

handle located at or towards the cutting device. (See Figure 1)

3.8

rear handle

handle located furthest from the cutting device. (See Figure 1)

3.9

throttle lock

device for temporarily setting the throttle in a partially open position to aid starting

3.10**blade control**

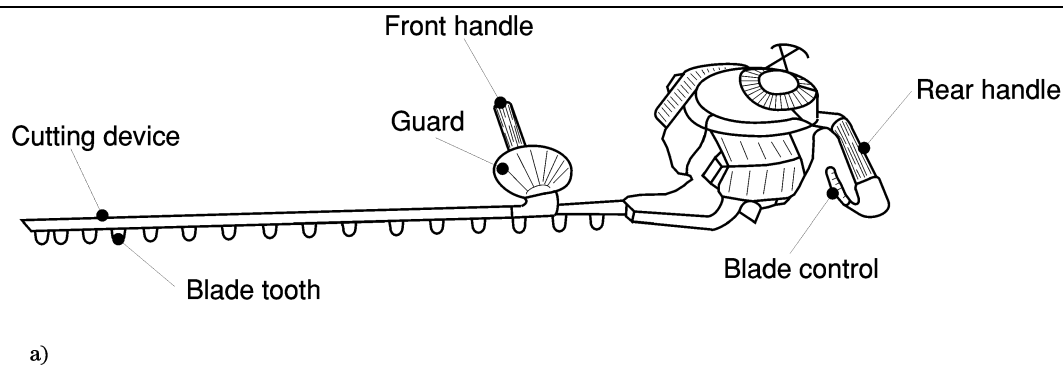
a device activated by the operator's hand or finger, for controlling the cutter blade movement. Depending on the application this may require single or two-stage operation

3.11**blunt extension**

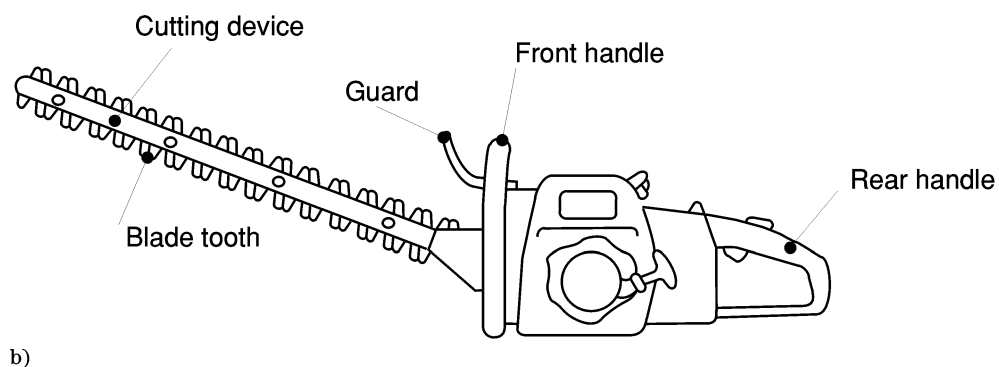
an extending blunt part of the cutting device or an extending part of an unsharpened plate fitted to the cutting device

3.12**maximum operating engine/motor speed**

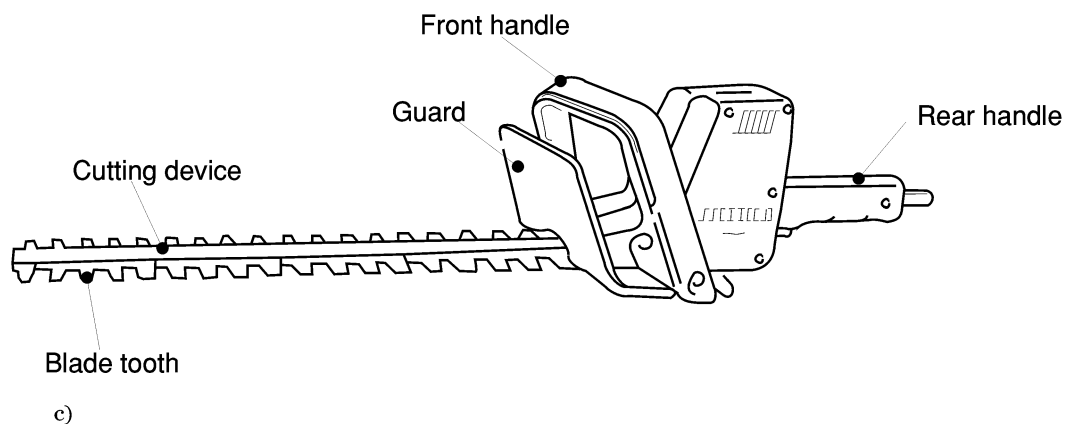
the highest engine/motor speed obtainable when adjusted in accordance with the hedge trimmer manufacturer's specifications and/or instructions with the cutting device engaged



a)

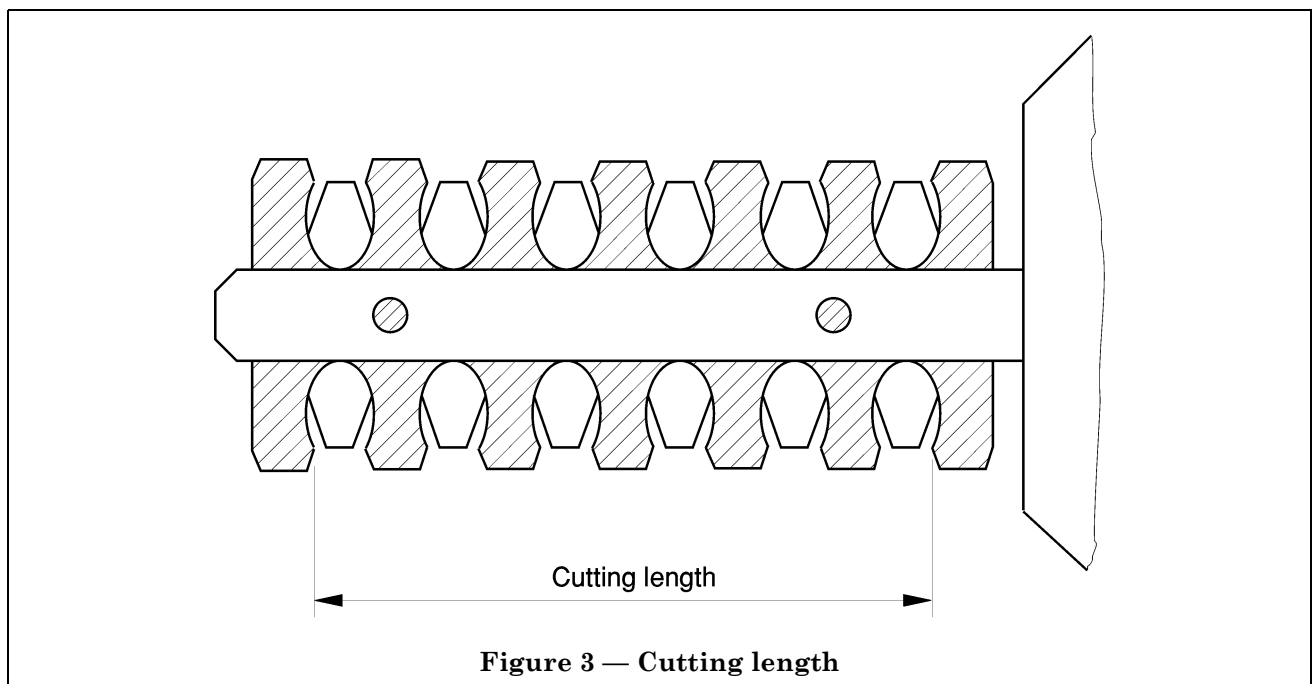
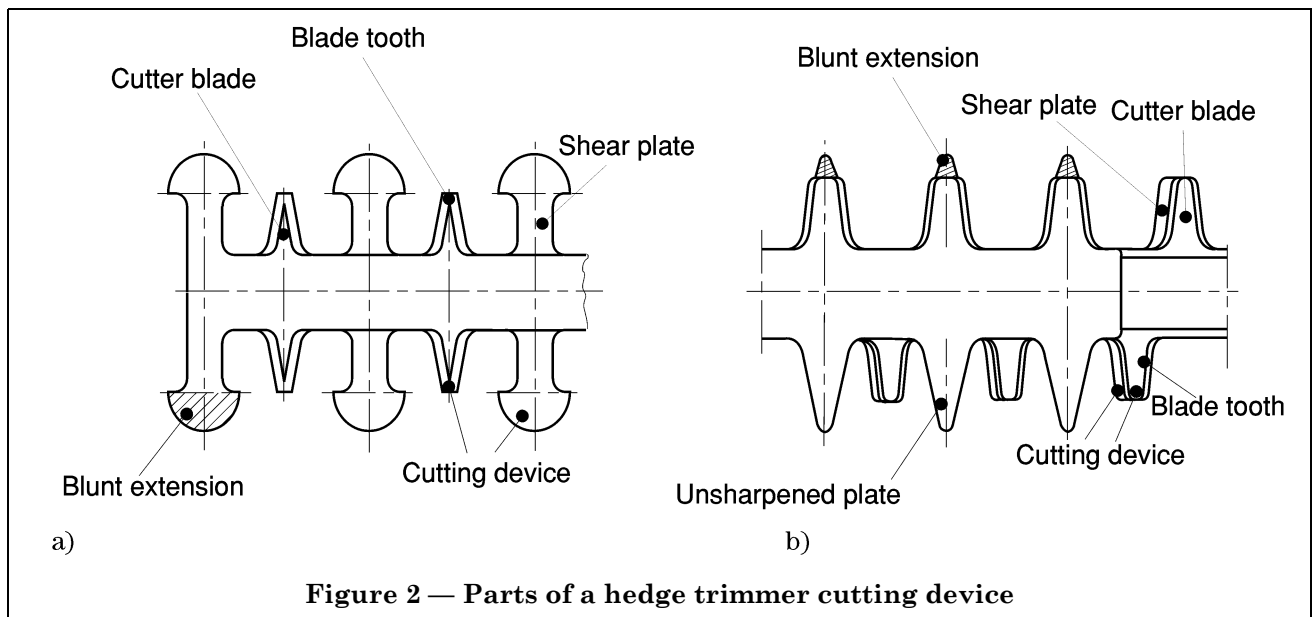


b)



c)

Figure 1 — Examples of some different types of hedge trimmer



4 Safety requirements and/or measures

4.1 Handles and cutting device

4.1.1 *Handles*

The number of handles shall be in accordance with Table 1.

The handles shall be designed in such a way that each one can be grasped with one hand.

The gripping surface of handles shall be at least 100 mm long. On bail or closed handles (U-shaped handles) this dimension is related to the inner width of the gripping surface. On straight handles it is the complete length between the housing and the end of the handle.

The gripping length of a bail or closed handle shall comprise any length that is straight or curved at a radius of greater than 100 mm together with any blend radius but not more than 10 mm at either or both ends of the gripping surface.

There shall be a minimum radial clearance of 25 mm around the gripping length.

If a part containing the motor complies with the dimensions above it may be considered as a handle.

If a straight handle is supported centrally (i.e. "T" type) the gripping length shall be calculated as follows:

- a) for handles with a periphery (not including the support) less than 80 mm the gripping length is the sum of the two parts either side of the support;
- b) for handles with a periphery (not including the support) of 80 mm or more the gripping length is the complete length from end to end.

Where appropriate the part of the handle containing the blade control actuator shall be counted as part of the handle gripping length. Finger grip or similar superimposed profiles shall not affect the method of calculating handle gripping length.

Handles shall be positively locked in position. If they are adjustable in different positions it shall not be possible to lock them in a position which contravenes other provisions of this standard.

For handles which are adjustable without the use of a tool it shall not be possible to alter the handle position when the cutting device is powered. When altering the handle position the blade control shall be disabled such that the cutting device can not be powered until the handle is locked into one of its designated operating positions (e.g. the control is automatically disengaged from the throttle of the engine if the handle is not locked into one of the positions of use).

Compliance shall be checked by inspection and measurement.

4.1.2 *Hand protection*

From any handle it shall not be possible to touch the moving cutter blade with fingers spread out.

All handles shall be so located that the test distance from the cutter blade to the side furthest from the cutter blade of any handle is not less than 120 mm. The distance shall be measured along the shortest path from the side of the handle furthest from the cutter blade to the nearest cutting edge of the cutter blade [see Figure 4 a)]. If there is a guard the distance shall be measured from the furthest side of the handle to the guard and from there to the nearest cutting edge of the cutter blade [see Figure 4b)].