

**Käeshoitavad mootoriga elektritööriistad. Ohutus.
Osa 2-21: Erinõuded drenaažipuhastajatele**

Hand-held motor-operated electric tools - Safety -- Part 2-21:
Particular requirements for drain cleaners

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 60745-2-21:2009 sisaldab Euroopa standardi EN 60745-2-21:2009 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 30.09.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 22.07.2009.

Standard on kättesaadav Eesti standardiorganisatsioonist.

This Estonian standard EVS-EN 60745-2-21:2009 consists of the English text of the European standard EN 60745-2-21:2009.

This standard is ratified with the order of Estonian Centre for Standardisation dated 30.09.2009 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.

Date of Availability of the European standard text 22.07.2009.

The standard is available from Estonian standardisation organisation.

ICS 25.140.20, 91.140.70

Standardite reprodutseerimis- ja levitamiseõigus kuulub Eesti Standardikeskusele

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English version

**Hand-held motor-operated electric tools -
Safety -
Part 2-21: Particular requirements for drain cleaners
(IEC 60745-2-21:2002, modified)**

Outils électroportatifs à moteur -
Sécurité -
Partie 2-21: Règles particulières
pour les curettes
(CEI 60745-2-21:2002, modifiée)

Handgeführte motorbetriebene
Elektrowerkzeuge -
Sicherheit -
Teil 2-21: Besondere Anforderungen
für Rohrreinigungsgeräte
(IEC 60745-2-21:2002, modifiziert)

This European Standard was approved by CENELEC on 2009-07-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of the International Standard IEC 60745-2-21:2002, prepared by SC 61F (transformed into IEC TC 116, Safety of hand-held motor-operated electric tools), together with the common modifications prepared by the Technical Committee CENELEC TC 61F (transformed into TC 116), was submitted to the Unique Acceptance Procedure and was approved as EN 60745-2-21 on 2007-05-01.

A draft amendment (prAA), extending Annex ZZ to include the new MD 2006/42/EC, was submitted to the formal vote.

The combined texts were approved by CENELEC as a new edition of EN 60745-2-21 on 2009-07-01.

This European Standard supersedes EN 60745-2-21:2007.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2010-05-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2010-05-01

This standard is divided into two parts:

Part 1: General requirements which are common to most hand-held electric motor operated tools (for the purpose of this standard referred to simply as tools) which could come within the scope of this standard;

Part 2: Requirements for particular types of tools which either supplement or modify the requirements given in Part 1 to account for the particular hazards and characteristics of these specific tools.

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive 98/37/EC (Machinery Directive), amended by Directive 98/79/EC, and of EC Directive 2006/42/EC. See Annex ZZA and Annex ZZB.

Compliance with the clauses of Part 1 together with this Part 2 provides one means of conforming with the essential health and safety requirements of the Directives concerned.

Warning: Other requirements and other EC Directives can be applicable to the products falling within the scope of this standard.

This standard follows the overall requirements of EN ISO 12100-1 and EN ISO 12100-2.

This Part 2-21 is to be used in conjunction with EN 60745-1:2009. When this standard states "addition", "modification" or "replacement", the relevant text in Part 1 is to be adapted accordingly.

Subclauses, tables and figures which are additional to those in Part 1 are numbered starting from 101.

Subclauses, tables and figures which are additional to those in IEC 60745-2-21 are prefixed "Z".

Annexes ZZA and ZZB have been added by CENELEC.

NOTE In this standard the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- explanatory matter: in smaller roman type.

Endorsement notice

The text of the International Standard IEC 60745-2-21:2002 was approved by CENELEC as a European Standard with agreed common modifications as given below.

COMMON MODIFICATIONS

6 Void

Replace by:

6 Environmental requirements

This clause of Part 1 is applicable except as follows:

6.1.2.4 Modification:

Drain cleaners are suspended at an angle of 45° downwards from the horizontal.

6.1.2.5 Modification:

Drain cleaners are tested at no load in the forward direction. During the test, the drain cleaner cable is inside the drum.

6.2 Vibration

6.2.4.2 Location of the measurement

Addition:

Figure Z101 shows the positions for drain cleaners.

6.2.6.3 Operating conditions

Modification:

Table Z101 - Operating conditions for drain cleaners

Orientation	Drain cleaners are tested at no load in the forward direction. The drain cleaner is held at an angle of 45° downwards from the horizontal.
Tool bit	The drain cleaner cable is inside the drum.
Grip force	Hold the machine with normal gripping force, at the pistol handle and the drum hand grip surface, avoiding excessive gripping force.
Test cycle	One test cycle is given when the tool is switched on for no load at maximum speed for more than 10 s and then switched off again. The measurement is conducted during 10 s within this period.

NOTE For drain cleaners, no load condition is the worst case for vibration. Typically these tools carry 8 m to 12 m of drain cleaner cable and a large portion of any vibration is due to the cable in the drum not running true. Also, the highest speed is at idle and therefore will cause the highest vibration. Little or no vibration is transmitted from the cable being in the drain since the drain cleaner cable is basically a large spring and acts as a dampener.

6.2.7.2 Declaration of the vibration total value

Addition:

The vibration total value a_h of the handle with the highest emission and the uncertainty K shall be declared.

21 Construction

Replace by:

This clause of Part 1 is applicable except as follows:

21.21 This clause of Part 1 is not applicable.

Add the following figure:

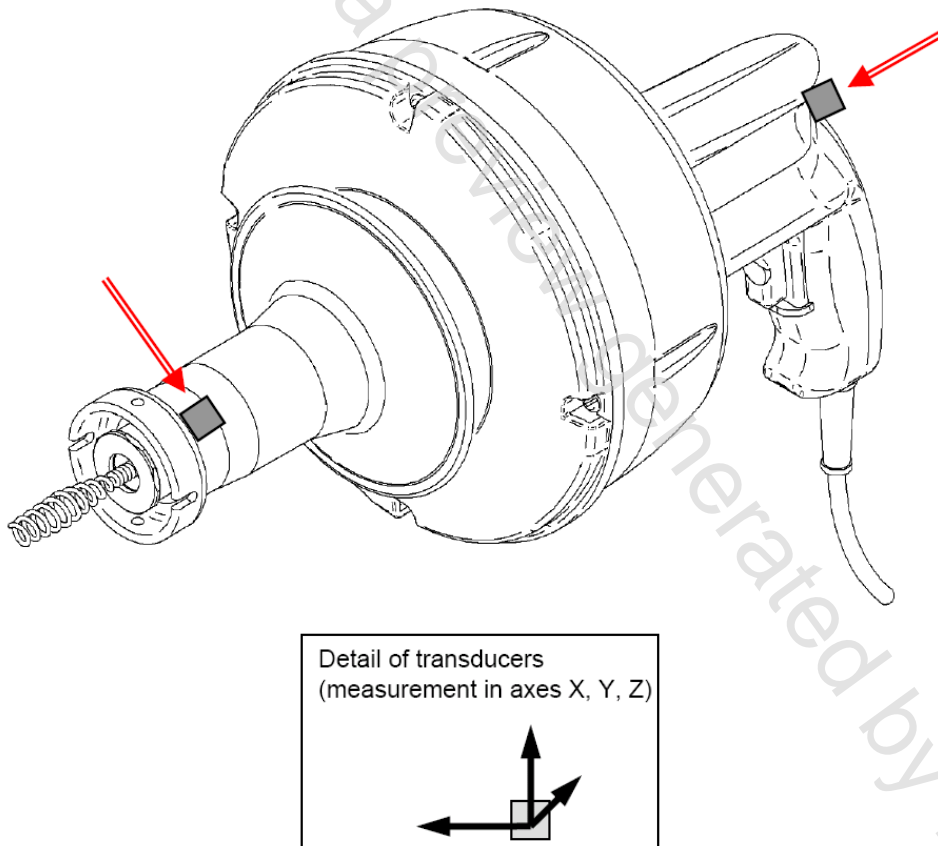


Figure Z101 - Positions of transducers for drain cleaners

Add the following annex:

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

Annex ZZA
(informative)

Coverage of Essential Requirements of Directive 98/37/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant Essential Requirements as given in Annex I of EC Directive 98/37/EC (Machinery Directive), amended by Directive 98/79/EC.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

Annex ZZB
(informative)

Coverage of Essential Requirements of Directive 2006/42/EC

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers all relevant Essential Requirements as given in Annex I of EC Directive 2006/42/EC (Machinery Directive).

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directives concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

HAND-HELD MOTOR-OPERATED ELECTRIC TOOLS – SAFETY –

Part 2-21: Particular requirements for drain cleaners

1 Scope

This clause of Part 1 is applicable, except as follows:

1.1 Addition:

This standard applies to drain cleaners.

2 Normative references

This clause of Part 1 is applicable.

3 Definitions

This clause of Part 1 is applicable, except as follows:

Additional definition:

3.101

drain cleaner

tool for cleaning out blocked drains

4 General requirements

This clause of Part 1 is applicable.

5 General conditions for the tests

This clause of Part 1 is applicable.

6 Void

7 Classification

This clause of Part 1 is applicable.

8 Marking and instructions

This clause of Part 1 is applicable.