SLOVENSKI STANDARD
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Nepremiļna oprema za vadbo - 5. del: Nepremiļna sobna kolesa in oprema za vadbo zgornjega dela telesa, dodatne posebne zahteve in preskusne metode

Stationary training equipment - Part 5: Stationary exercise bicycles and upper body crank training equipment, additional specific safety requirements and test methods

Stationäre Trainingsgeräte - Teil 5: Stationäre Trainingsfahrräder und Kurbel-Trainingsgeräte für den Oberkörper, zusätzliche besondere sicherheitstechnische Anforderungen und Prüfverfahren

Appareils d'entraînement fixes - Partie 5: Bicyclettes d'exercice fixes et appareils d'entraînement pour le haut du corps, exigences spécifiques de sécurité et méthodes d'essai supplémentaires

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97.220.30 Oprema za dvoranske športe Indoor sports equipment

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EUROPEAN STANDARD

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English Version

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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 CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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

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Foreword

This document (EN 957-5:2009) has been prepared by Technical Committee CEN/TC 136 “Sports-playground and other recreational equipment”, the secretariat of which is held by DIN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 2009, and conflicting national standards shall be withdrawn at the latest by August 2009.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 957-5:1996.

EN 957, *Stationary training equipment* consists of the following parts:

— Part 1: General safety requirements and test methods

— Part 2: Strength training equipment, additional specific safety requirements and test methods

— Part 4: Strength training benches, additional specific safety requirements and test methods

— Part 5: Stationary exercise bicycles and upper body crank training equipment, additional specific safety requirements and test methods

— Part 6: Treadmills, additional specific safety requirements and test methods

— Part 7: Rowing machines, additional specific safety requirements and test methods

— Part 8: Steppers, stairclimbers and climbers, additional specific safety requirements and test methods

— Part 9: Elliptical trainers, additional specific safety requirements and test methods

— Part 10: Exercise bicycles with a fixed wheel or without freewheel, additional specific safety requirements and test methods

In relation to EN 957-5:1996 the following main amendments have been made:

a) Specification and definition changed;

b) Implementation of recumbent bikes and upper body ergometers, requirements and tests;

c) New requirements and tests regarding the seat and handlebar;

d) Implementation of requirements and tests for heart rate monitoring and heart rate control systems;

e) Changes requirements for constant power mode;

f) Additional requirements regarding manual and marking;

g) More detailed description of the existing requirements.

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

Introduction

This part of EN 957 concerns the safety of crank training equipment.

It amends and supplements EN 957-1. The requirements of this specific standard take priority over those in the general standard.

1 Scope

This part of EN 957 specifies safety requirements for stationary exercise bicycles and upper body crank training equipment in addition to the general safety requirements of EN 957-1.

This part of EN 957 is applicable to stationary training equipment type stationary exercise bicycles and upper body crank training equipment (type 5) as defined in Clause 3 within the classes S, H, I and A, B, C according to EN 957-1.

Any attachment provided with the stationary exercise bicycles and upper body crank training equipment for the performance of additional exercises are subject to the requirements of EN 957-1.

This part of EN 957 is not applicable to roller stands as they cannot be made safe in a reasonable way.

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.

EN 71-1, *Safety of toys — Part 1: Mechanical and physical properties*

EN 957-1:2005, *Stationary training equipment — Part 1: General safety requirements and test methods*

ISO 4210, *Cycles — Safety requirements for bicycles*

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 957-1 and the following apply.

3.1
pedal crank training equipment
stationary apparatus on which work is carried out by turning a crank mechanism either by using the lower body or the upper body or both

NOTE Hereafter referred to as training equipment.

3.2
freewheel
gearing mechanism which is designed to disengage the flywheel from the pedal mechanism in one direction

3.3
seat pillar
connection between the frame and the seat provided to adjust the height of the seat

3.4
seat tube
part of the frame where the seat pillar is inserted

3.5
handlebar stem
connection between the frame and the handlebar provided to adjust the height of the handlebar

3.6
display
device that provides information to the user

3.7
load adjustment
device to change the level of resistance at the cranks of the training equipment

3.8
constant power mode
programme that allows the user to maintain a predetermined equipment power level independent of pedalling revolutions per minute and can be adjustable to different levels

NOTE $P = M \cdot 2 \cdot \pi \cdot n/60$

3.9
adjustable torque
allows the user to maintain a pre determined equipment resistance level.

NOTE The power is only dependent upon the pedalling revolutions per minute and the chosen resistance level ($M = F \cdot L$).

3.10
adjustable equipment
equipment in which the power can be changed through a torque and/or power adjusting device

3.11
non adjustable equipment

equipment in which the power can only be changed upon the pedalling revolutions per minute

3.12
inertia factor
sum of the inertia moments of all rotating parts of the drive train multiplied by the square of the appropriate gear ratio

NOTE The gear ratio is the rotational speed of the flywheel divided by the rotational speed of the relevant shaft beginning by the crank shaft.

3.13
protective cover
cover provided to protect the user from inadvertent access to hazardous parts of the training equipment

NOTE Hazardous parts include moving parts, gear systems, hot surfaces, etc.

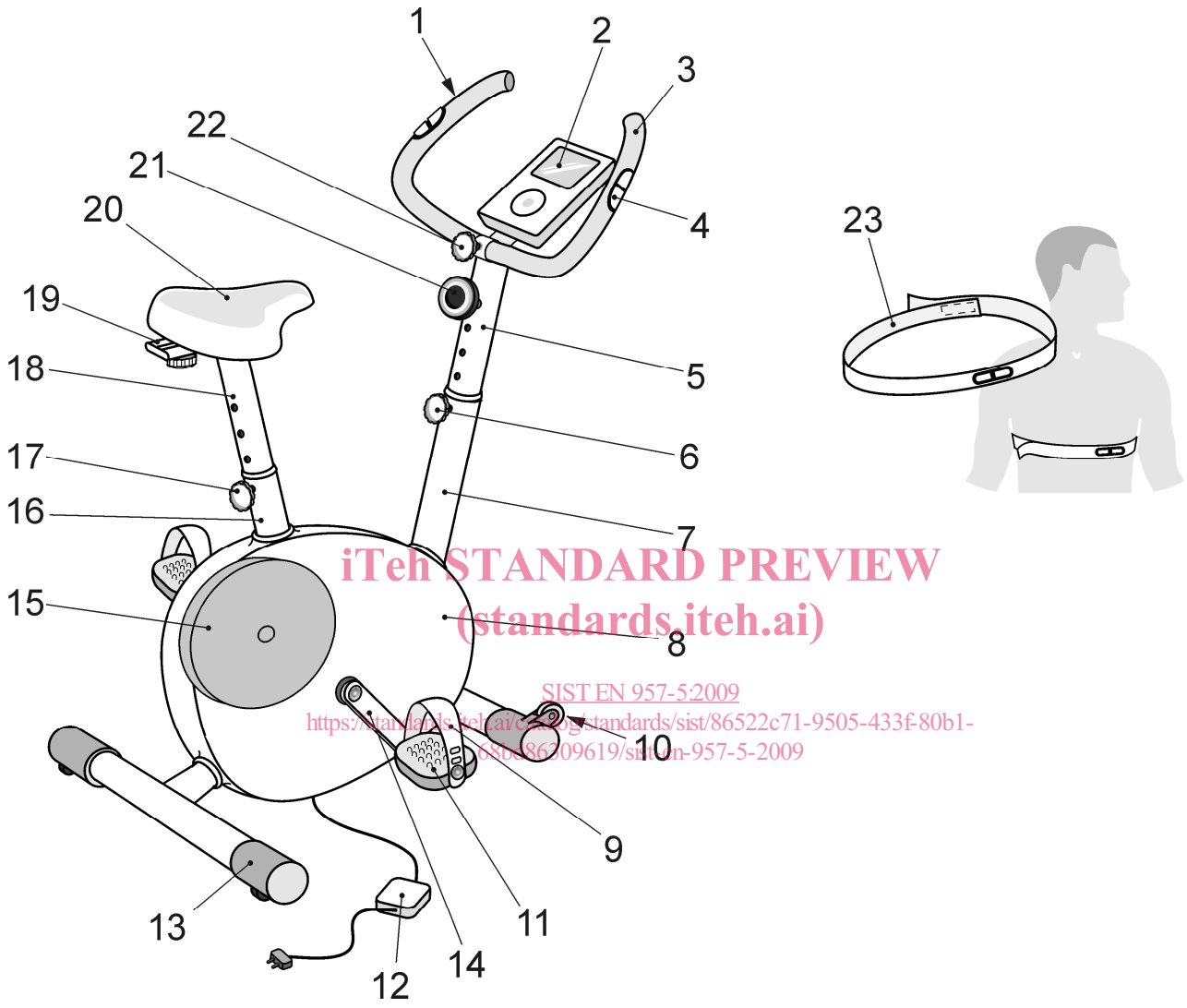
3.14
adjustable handlebar
handlebars which can be adjusted for different training positions

3.15
heart rate control mode
programme that allows the user to maintain training with a predetermined pulse level by adjusting the resistance automatically

4 Classification

Clause 4 of EN 957-1:2005 applies.

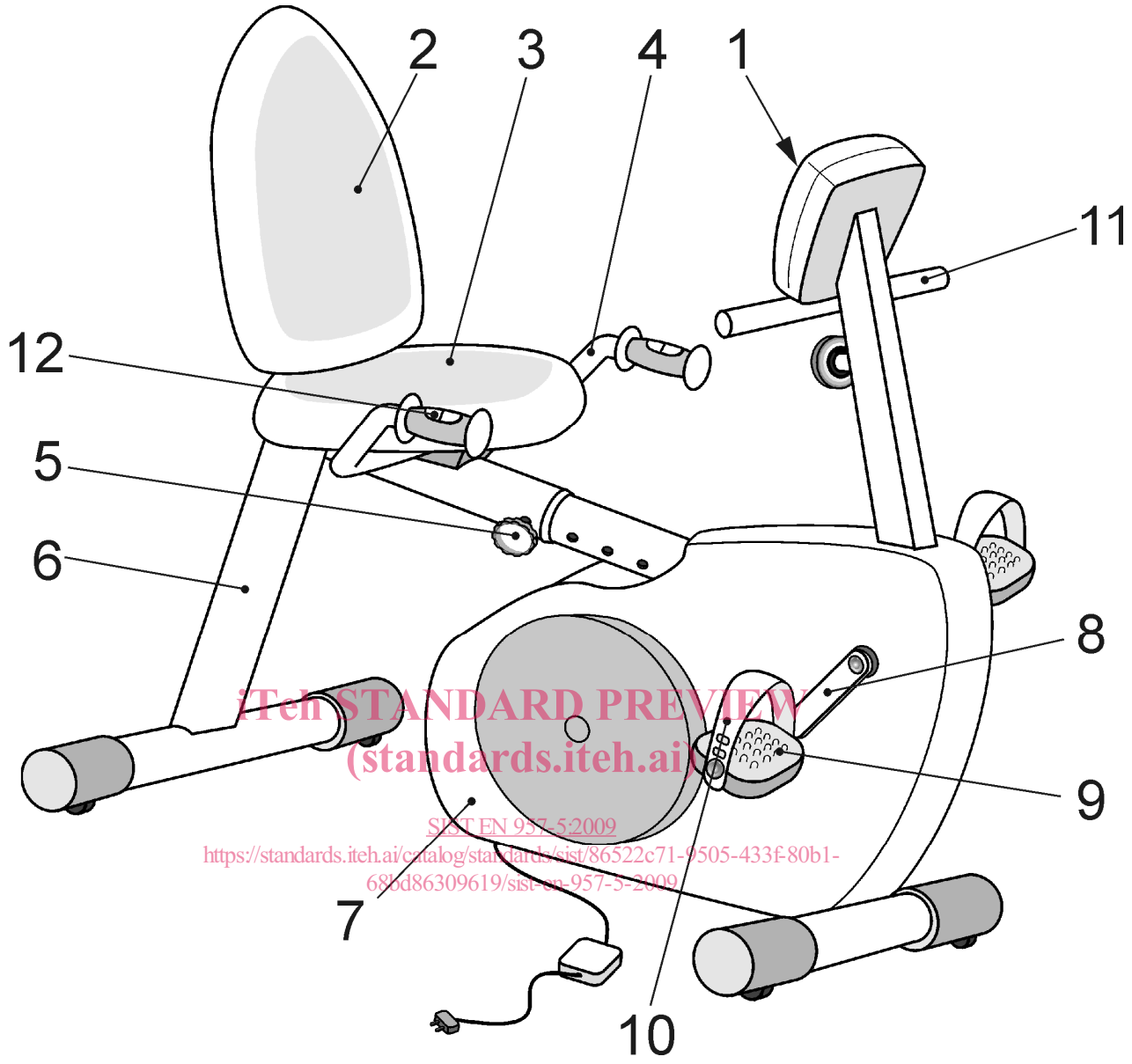
NOTE Figures 1 to 3 are intended only to give examples and to illustrate the names of the components.



Key

1 Handlebar
2 Power display
3 Hand grip
4 Hand pulse
5 Handlebar stem
6 Handlebar height adjustment
7 Frame
8 Protective cover
9 Pedal strap
10 Displacement wheel
11 Pedal
12 Power supply
13 Foot
14 Crank
15 Flywheel
16 Seat tube
17 Seat height adjustment
18 Seat pillar
19 Horizontal seat adjustment
20 Seat
21 Load adjustment
22 Handlebar adjustment device
23 Heart rate belt

Figure 1 — Example of pedal crank training equipment



Key

1 Display console
2 Seat back rest
3 Seat
4 Seat handlebar
5 Seat adjustment
6 Frame
7 Protective cover
8 Crank
9 Pedal
10 Pedal strap
11 Front handlebar
12 Heart rate hand sensor

Figure 2 — Example of recumbent training equipment