
**Automatic milking installations —
Requirements and testing**

Installations de traite automatique — Exigences et essais



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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

ISO 20966 was prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*.

Automatic milking installations — Requirements and testing

WARNING — Some of the tests specified in this International Standard involve procedures which could lead to a hazardous situation. The attention of any person performing tests in accordance with this International Standard is drawn to the need to be appropriately trained in the type of work to be carried out. It is left to the responsibility of the user to check all national regulatory conditions and health and safety requirements applicable for the relevant country.

1 Scope

This International Standard specifies requirements for the construction of automatic milking installations (AMI), including specific safety and hygiene aspects and minimum performance requirements and testing, in addition to those described in ISO 5707 and ISO 6690.

It does not contain requirements for the design of the building in which the milking installation is installed.

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 3600, *Tractors, machinery for agriculture and forestry, powered lawn and garden equipment — Operator's manuals — Content and presentation*

ISO 3918, *Milking machine installations — Vocabulary*

ISO 4413, *Hydraulic fluid power — General rules relating to systems*

ISO 4414, *Pneumatic fluid power — General rules relating to systems*

ISO 5707, *Milking machine installations — Construction and performance*

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

ISO/TR 11688-2, *Acoustics — Recommended practice for the design of low-noise machinery and equipment — Part 2: Introduction to the physics of low-noise design*

ISO 12100-1:2003, *Safety of machinery — Basic concepts, general principles for design — Part 1: Basic terminology, methodology*

ISO 12100-2:2003, *Safety of machinery — Basic concepts, general principles for design — Part 2: Technical principles*

ISO 13852:1996, *Safety of machinery — Safety distances to prevent danger zones being reached by the upper limbs*

ISO 14159, *Safety of machinery — Hygiene requirements for the design of machinery*

IEC 60204-1:2005, *Safety of machinery — Electrical equipment of machines — Part 1: General requirements*

IEC 60227-1, *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V — Part 1: General requirements*

IEC 60245-1, *Rubber insulated cables — Rated voltages up to and including 450/750 V — Part 1: General requirements*

IEC 60529:2001, *Degrees of protection provided by enclosures (IP code)*

IEC 60825-1:2001, *Safety of laser products — Part 1: Equipment classification, requirements and user's guide*

IEC 60947-4-1, *Low-voltage switchgear and control gear — Part 4-1: Contactors and motor starters — Electromechanical contactors and motor starters*

IEC 60947-5-1, *Low-voltage switchgear and control gear — Part 5-1: Control circuit devices and switching elements — Electromechanical control circuit devices*

IEC 61800-1, *Adjustable speed electrical power drive systems — Part 1: General requirements — Rating specifications for low-voltage adjustable speed d. c. power drive systems*

EN 1088, *Safety of machinery — Interlocking devices associated with guards — Principles for design and selection*

EN 13732, *Food processing machinery — Bulk milk coolers on farms — Requirements for construction, performance, suitability for use, safety and hygiene*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3918 and the following apply.

3.1

control system

assembly of hardware and software components to start, operate and stop the AMI

4 Safety and hygiene requirements

The safety requirements given in Annex A apply.

The hygiene requirements given in ISO 14159 apply.

5 Functional requirements

5.1 General

The milking machine shall fulfil the requirements specified in ISO 5707.

It shall be possible to operate the AMI both for milking and testing purposes.