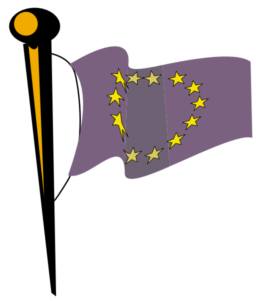
I - The European Community Directives

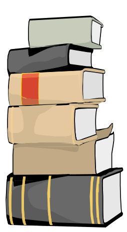


The Council of the European Union has issued a series of Directives intended to ensure the harmonization of requirements for the health and safety of individuals working with machinery. They cover all aspects of safety, including provisions covering how machinery should be designed and constructed, installed and maintained. They set out a common framework, for Member States to implement at national level, of laws, regulations and administrative procedures necessary to comply with the requirements of the Directives. The main Directives that relate to Safety are described below.

The Machinery Directive 98/37/EC

To ensure the harmonization of health and safety requirements within the EU and to remove barriers to trade, **the EC Machinery Directive** lays down essential health and safety requirements relating to the safe design and construction of machinery, and its proper installation and maintenance. This Directive has applied to all new machinery placed on the market since January 1, 1993, and to all machinery operating since January 1, 1997. Safety Components came under the Directive from January 1, 1997.

It has **technical requirements** which must be respected in the design and manufacture of machinery. These are expressed in terms of objectives and are divided into two categories:



- **common requirements** for all machinery (Annex I, Para. 1), e.g. controls and on/off circuits, mechanical risks, requirements for protectors and protective devices, maintenance, etc.
- **additional technical requirements** (Annex I, Para. 2) that apply to machinery where there are specific risks or risks linked to particular operating constraints such as food hygiene, lifting, mobility, etc.

The Machinery Directive requires:

- ☞ Appropriate measures to be taken to ensure that machinery and safety components placed on the market and put into service do not endanger the health and safety of persons.
- ☞ Manufacturers or their authorized representatives to certify their machinery as conforming to the provisions of the Directive relating to essential health and safety requirements. A technical construction file must be established to demonstrate conformity. Signing an EC declaration of conformity authorizes the manufacturer or his authorized representative to affix a mark - commonly known as the CE mark - to the machinery. (See Chapter III).
- ☞ Certain types of machinery, judged as being the most dangerous or requiring special safety components, to have independent support from a notified body via an EC type examination or a certificate of adequacy for the technical construction file. (See Chapter III).
- ☞ Manufacturers or their authorized representatives to perform a risk assessment for normal and abnormal operating conditions as part of the design process.

It also describes the steps leading to **CE certification.**

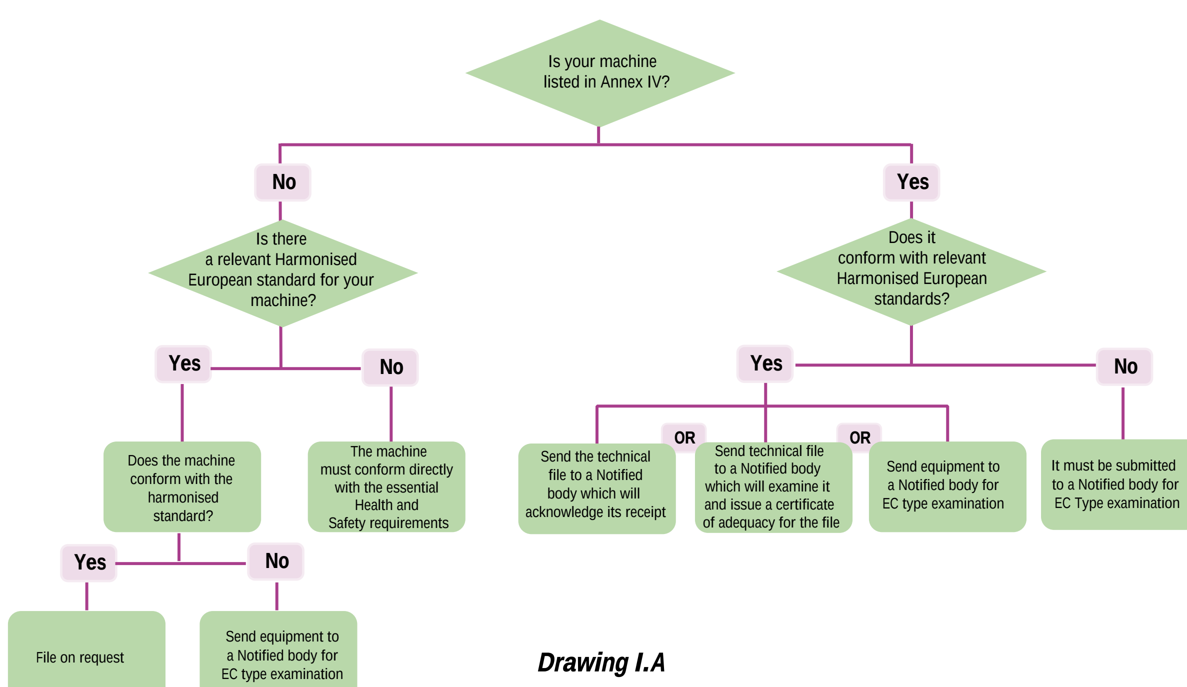
1. If the machine is not referred to in Annex IV of the Directive, the manufacturer or his authorized representative may declare that the machine being placed on the market complies with all the essential health and safety requirements applying to it. Signature of the declaration of conformity authorizes the affixing of the CE mark. Before drawing up the declaration of conformity, the manufacturer or his authorized representative is obliged to create, and maintain for inspection by national authorities, a file of documents, referred to as the **technical construction file,** relating to the design of the machinery. This technical construction file must contain the means to identify the machinery, the specification of the technical rules applicable to the risks assessed, and the means used to limit these risks. For more details on what it must contain, see Chapter III.

The manufacturer is required to carry out any necessary research or tests on components, fittings or the completed machine, to determine whether by its design or construction the machine is capable of being erected and put into service safely.

2. If the machine is referred to in Annex IV and totally conforms to the applicable standards, the manufacturer should draw up and submit the technical construction file to a notified body for verification that the applicable standards have been correctly applied. The notified body will then draw up a certificate of adequacy for the file, and the manufacturer can complete the declaration of conformity. Alternatively, the manufacturer can submit a model of the machinery for an EC type examination.

3. If the machinery is referred to in Annex IV, and if it does not completely comply with a harmonized standard, or if such a standard does not exist, the manufacturer should submit a model of the machinery for an EC type examination carried out by a notified body. The notified body can certify that the model satisfies the provisions of the Machinery Directive that apply to it. Only then can the manufacturer complete the declaration of conformity and affix the CE mark.

Steps to Compliance with the Machinery Directive 98/37/EC



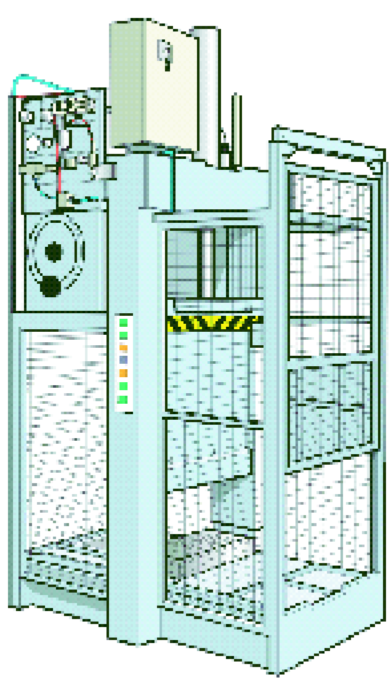
Drawing I.A

Definition of "Machinery" according to Article 2 of the Machinery Directive

Such a definition is essential as it sets the limits of both designers' and manufacturers' responsibilities. "Machinery" means an assembly of linked parts or components, at least one of which moves, with the appropriate actuators, control and power circuits, etc., joined together for a specific application, in particular for the processing, treatment, moving or packaging of material. The term also covers an assembly of machines which, in order to achieve the same end, are arranged and controlled so that they function as an integral whole.

This original definition was expanded to include a list of equipment considered to be machinery, among which are:

- multi-purpose equipment, for example a removable load carrying truck
- safety components



Drawing I.B

There is a list of equipment excluded from the scope of the Directive, because they are - or will be - subject to more specific regulations. They include machines for medical use, lifting equipment, mobile equipment, special equipment for use in fairgrounds and/or amusement parks, etc.

The Use of Work Equipment Directive 89/655/EC as amended by 95/63/EC

This Directive, sometimes referred to as the Social Directive, requires employers to take measures necessary to ensure that work equipment is suitable for safe use by operators. It requires them to obtain and / or use equipment that complies with the provisions of any applicable relevant Directive. This applies to new machinery provided to operators from January 1, 1993 and to existing machinery from January 1, 1997.

It sets out the general framework for a series of **preventive measures** to be taken in the workplace, covering how machinery should be used, what safety devices or systems should be employed on the machinery, the employers responsibilities for maintenance and ensuring conformance, and what training and information be made available to operators.

It also sets out an obligation on employers to minimize risk **through risk analysis and assessment**. A summary of how an employer may do this, and what EC standards apply, is given in Chapter V.

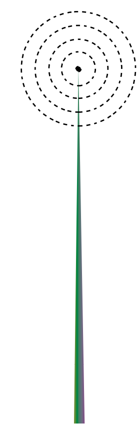
Other essential Directive that manufacturers and user have to be aware of include:

The Low Voltage Directive 73/23/EC

This requires that electrical equipment be designed and manufactured to protect against danger which may come from electrical equipment, or which may be caused by outside influences on electrical equipment, subject to correct usage conforming to their purpose and proper maintenance. It applies to any electrical equipment destined to be used at a minimum voltage between **50 and 1000 Vac for alternating current and 75 and 1500 Vdc for direct current**.

It came into force on January 1, 1997. Compliance with this Directive is through self-certification to harmonized standards.

The Electromagnetic Compatibility Directive 89/336/EC as amended by 91/263/EC, 92/31/EC, 93/68/EC and 93/97/EC



This aims to ensure a machine's intrinsic immunity against magnetic interference and limits use so as to allow radio and telecommunications instruments to function properly. This Directive applies to all devices that may create magnetic interference - i.e. equipment and fixtures which contain electric or electronic components. Adherence to this Directive has been mandatory since January 1, 1996. Compliance with this Directive is through self-certification to harmonized standards, and/or to EC type examination certificate.