

The European Association of the Machine Tool Industries

Where manufacturing begins



Guidelines

for CE marking on
metalworking band sawing
machines

09/2011:2

Objectives of the guide

Machinery and equipment which are bound by specific European directives cannot be placed on the single market unless they bear CE marking. CE marking affixed on a product indicates that the product complies with all relevant essential requirements (e.g. health and safety requirements) of the applicable directive(s).

However, market surveillance in the EU often fails to prevent the entry of non-compliant imported machinery into the internal market and/or the circulation of non-compliant European machinery in Europe. Machines which do not meet essential health and safety standards threaten health and safety in the workplace and put workers' lives in danger.

Moreover, manufacturers and suppliers who do not comply with European regulations benefit from reduced production costs and gain an unfair comparative advantage in the market. This distorts competition and undermines the competitiveness of European manufacturers who invest a significant amount of their resources in the development of products with high safety standards which meet European regulations.

Cases of non-compliance may occur due to lack of information (or misinformation) of producers who fail to meet the

relevant standards or due to deliberate infringements by producers who want to unfairly cut their production costs.

The shortcomings of the systems need to be urgently addressed. Firstly, better communication towards economic operators on EU regulations, standards and conformity assessment procedures is required in order to improve ex-ante mechanisms designed to ensure compliance with EU law. Secondly, ex-post mechanisms (market surveillance) should be strengthened.

CECIMO believes that effective market surveillance requires close cooperation between economic operators, customs authorities and surveillance bodies.

In line with this view, this guide aims to contribute to the ongoing work led by the European Commission to enhance market surveillance in the internal market, under the *New Legislative Framework*.

We hope that this guide will be a valuable source of information for manufacturers, sellers and users of machine tools as well as customs authorities to detect non-compliant products in the internal market. Enhanced functioning market surveillance will contribute to creating a more secure working environment for workers and a more competitive European industry.

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Verifying the validity of the declaration of conformity

The declaration of conformity shows which EU directives the machine complies with. It must include at least the following:

EU directives which apply to band sawing machines

The machine should comply with **all the applicable directives** and these should be mentioned in the declaration of conformity. The infringement of a single directive results in the non-conformity of the machine to CE requirements. Therefore, it is of utmost importance to specify which directives apply to each machine and to conduct a declaration of conformity that includes all the necessary information.

Directives which apply to band sawing machines include:

- **Machinery Directive (2006/42/EC**
- 2006/95/EC Low Voltage Directive¹

- **Electromagnetic Compatibility Directive (2004/108/EC)²**

Additionally the manufacturer can refer to the harmonized standards used for the conformity assessment.

Additional information: Pressure Equipment Directive 97/23/EC for pressure equipment and assemblies with a maximum allowable pressure PS greater than 0.5 bar **applies only to components and as such, not to machine tools themselves**, for example: accumulators where hydraulic pressure is < 100 bar, Dn < 6. Therefore, PED does not appear on the declaration of conformity.

The machinery is built in a way that fulfils the provisions of the harmonized standards, as they are published in the Official Journal of the EU. Below is a list of some of the harmonized standards.

Machinery Directive	EN 13898:2003+A1:2009	Machine tools - Safety - Sawing machines for cold metal
EMC Directive	EN 61000-62:2005/AC:2005	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards -Immunity for industrial environments IEC 61000-6-2:2005
EMC Directive	EN 50370-1:2005	Electromagnetic compatibility (EMC) - Product family standard for machine tools – Part 1: Emission and Part 2: Immunity
Low Voltage Directive	EN 60204-1	Safety of machinery - Electrical equipment of machines – Part 1: General requirements IEC 60204-1:2005 (Modified)
Pressure Equipment Directive	EN14359:2006	Gas-loaded Accumulators For Fluid Power Applications

Identification of the manufacturer

The business name and full address of the manufacturer should be the same as those typed on the machine.

The name of the manufacturer must always appear – The manufacturer is not obliged to have an authorised representative, although should he chose to do so, the person must be established in the European Community and the business name and full address of this authorised representative must appear.

The name and address of the person authorised to compile the technical file must be a person established in the EU S/he can be the manufacturer himself (if established in the EU).

The purpose of this data is to allow surveillance authorities to communicate with the manufacturer. Thus, the business address should be stated in full, simply stating the name of the area or the postcode does not suffice³.

Description and identification of the machinery

- Generic denomination - Term used to designate the category of machinery,

preferably the one used in harmonised standards

- Function
- Model
- Type
- Serial number and/ or batch number, if any
- Commercial name

Signature

The place and date of the declaration; whereby the date must be earlier than that of placing the machine tool on the market.

The identity and signature of the person empowered to draw up the declaration on behalf of the manufacturer or his authorised representative.

The EC Declaration of Conformity

If the machine is CE marked and put on the market, the Declaration of Conformity should accompany the machine and should be presented to surveillance authorities. The EC Declaration of conformity must be provided in the language of the country where the machine is to be used.

¹ Electrical machinery that is not in any of the categories listed in Article 1 (2) (k) of the Machinery Directive (and that is not concerned by one of the other exclusions) is in the scope of the Machinery Directive. When such machinery has an electrical supply within the voltage limits of the Low Voltage Directive (between 50 and 1000 V for alternating current or between 75 and 1500 V for direct current), it must fulfill the safety objectives of the Low Voltage Directive. However, in this case, the manufacturer's EC Declaration of Conformity should not refer to the Low Voltage Directive. On the other hand, low voltage electrical equipment placed on the market independently for incorporation into machinery is subject to the Low Voltage Directive as such Machinery Directive guide p.52

² Ian Fraser, *Guide to the Application of the Machinery Directive*: The EMCD applies to machinery that contains electrical or electronic parts that may generate or be affected by electromagnetic disturbance. The EMCD covers aspects of electromagnetic compatibility related to the functioning of machinery. However, the MD covers the immunity of machinery with respect to safety-related electromagnetic disturbance, whether transmitted by radiation or by wire.

³ Ian Fraser, *Guide to the Application of the Machinery Directive, 2006/42*, European Commission DG Enterprise and Industry, 2nd Edition, June 2010, p.228

It is the responsibility of the manufacturer or his authorised representative to draw up and sign an “**EC declaration of conformity**” proving that the product meets the requirements.

The DoC must include: manufacturer's details (name and address, etc.); essential characteristics the product complies; any European standards and performance data; if relevant the identification number of the Notified Body; and a legally binding signature on behalf of the organization.

Exhibit 1: Sample EC declaration of conformity

EC DECLARATION OF CONFORMITY
<i>[Business name and full address of the manufacturer <u>OR</u> name and address of the manufacturer's authorised representative established in the EC and the business name and address of the manufacturer]</i>
We hereby declare that the product: <i>[Generic denomination, Function, Model, Type, Serial number, Commercial name]</i>
Is in accordance with: <i>[Machinery Directives] [other Directives which apply ⁴]</i>
Is in accordance with: <i>[Harmonised standards applied]</i> <i>NB: The application of harmonized standards is not obligatory. However, any harmonised standards that have been employed to conform to the Directive should be mentioned.</i>
The following person is authorised to compile the technical file: <i>[Name, function, business address]</i>
Place and date of the declaration:
Name, signature, function: <i>[Clear identification of the person empowered to sign on behalf of the manufacturer or its authorised representatives, plus the person's position]</i>

⁴ The European Commission: *The Declaration of Conformity should refer to the Machinery Directive and EMC Directive but not to the Low Voltage Directive. This is due to fact that the emission requirements of the EMCD are applicable in addition to those of the MD. Whereas the safety requirements of the LVD are described in the section 1.5.1 of Annex I to the MD.*

CE Marking & Warning Signs

Is the official CE mark used?

The CE marking consists only of the letters "CE" with the graphic form shown in the diagram of the Directive and in the Regulation 765/2008.



The various components of the CE marking must have the same vertical dimension, which may not be less than 5 mm. The minimum dimension may be waived for small-scale machinery

The CE marking must be affixed to the machinery visibly, legibly and indelibly in the immediate vicinity of the name of the manufacturer or his authorised representative, using the same technique.⁵

Where can the CE mark be placed?

The CE mark has to be in an obvious place and it has not to be confused with CE marks of components. With regards to the size of the machinery, marking should be easily readable. Marking should not be effaced during the lifetime of machinery under its expected conditions of use. If the marking is displayed on a plate, it should be permanently fixed to the machinery, preferably by welding, riveting or bonding.⁶

Which components might need CE marking?

The Machinery Directive applies to completed machines and assemblies and not to components.⁷ However, there are some components that might need CE marking according to other directives. In such cases manufacturers of the components are obliged to comply with the formalities of the relevant directive(s) and mark the products accordingly. The manufacturer of the machine will indicate in the instructions which marks have been affixed pursuant to other directives and any obligations they may involve (such as compulsory periodical testing, inspection or replacement).⁸

Safety components and lifting accessories must apply to all obligations specified in the Machinery Directive as they are considered as 'machinery' in the broad sense and must meet all essential health and safety requirements of the Directive.

⁵ Ian Fraser, *Guide to the Application of the Machinery Directive, 2006/42*, European Commission DG Enterprise and Industry, 2nd Edition, June 2010, p. 122

⁶ Refer to footnote 4 source, p.227

⁷ For example, roller conveyors or other devices to get a higher automation level belong to the machine and don't need an extra CE marking if they are a component of the sawing equipment Directive 2006/42/CE

Items of pressure equipment or pressure assemblies should bear CE marking in case they fall under the provisions of article 3 of the PED Directive.⁹ Otherwise, they should only bear marking to permit identification of the manufacturer or the authorized representative.¹⁰

Who can affix the CE marking?

It is the responsibility of the manufacturer or his authorised representative to affix the CE marking.

An authorised representative is the natural or legal person mandated by the manufacturer in writing. The written mandate entitles the representatives to perform all formalities and obligations on behalf of the manufacturer for the machine in question.

What should be included on the nameplate?

- The business name and full address of the manufacturer and, where applicable, the authorised representative
- Designation of the machinery
- The CE Marking
- Designation of series or type
- Serial number and/or batch number
- The year of construction, that is the year in which the manufacturing process is completed
- This data should be in one official EU language. More data can be included, but these are the minimum requirements by the machinery directive.¹¹

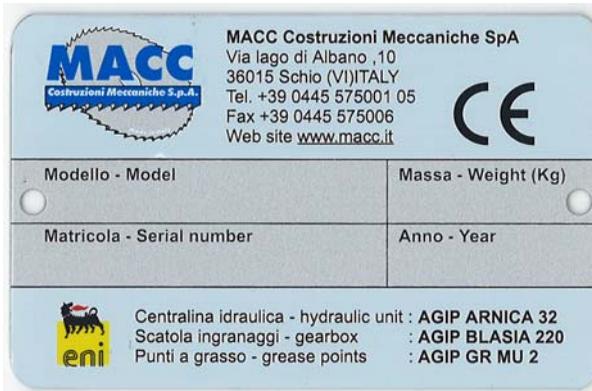


Exhibit 2:
Example of a nameplate used to identify the product

⁸ http://ec.europa.eu/enterprise/sectors/mechanical/files/machinery/facts_en.pdf

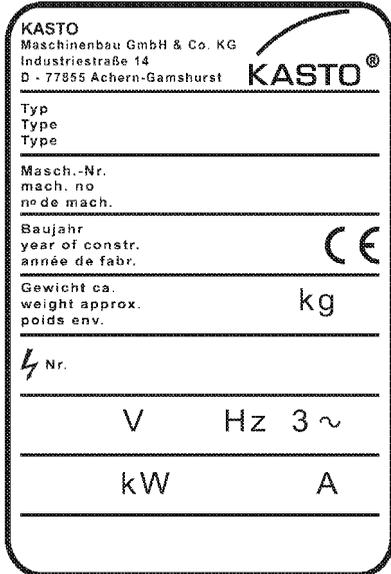
⁹ The Pressure Equipment Directive (97/23/EC), Art. 15

¹⁰ The Pressure Equipment Directive (97/23/EC), Art 3.3

¹¹ The Machinery Directive 2006/42, Annex I 1.7.3

¹² <http://eur-lex.europa.eu/LexUriServ/site/en/consleg/1958/R/01958R0001-20070101-en.pdf>

Exhibit 3: Example of a nameplate used to identify the product



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original CE marking. Neither should the CE marking be covered by other signs.

What about the obligations for the importer/ distributor?

It is the responsibility of the importer and distributor to make sure that only products complying with legislation and bearing the CE marking are placed on the market.

In cases where a metalworking band sawing machine is produced in third countries and the manufacturer is not represented in the EEA, the importer must make sure that the machine placed on the market by them complies with the EU requirements and does not present a risk to health and safety. The importer must verify that the manufacturer outside the EU implemented the necessary steps to ensure compliance and that the documentation is available upon request.

In which language should the data accompanying CE marking be?

This data should be at least in one of the official EU languages¹² (Bulgarian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hungarian, Irish, Italian, Latvian, Lithuanian, Maltese, Polish, Portuguese, Romanian, Slovak, Slovene, Spanish and Swedish).

What should the machine not bear?

The machine should not bear any misleading signs similar to CE marking, even if these are additional to the

Are the CE marked metalworking band sawing machines tested and approved by the authorities?

The assessment that band sawing machines conform to the legislative requirements applying to them is the sole responsibility of the manufacturer. Thus it is the manufacturer himself who affixes the CE marking also it is the manufacturer who drafts the EC Declaration of Conformity. However certain machine tools require conformity assessment by a third party, i.e. a notified body.¹³

Which warnings should be included on metalworking band sawing machines?

The manufacturer is not expected to mark on the machinery all of the information for safe use provided in the instructions. However, information concerning essential aspects of safe use must be marked on the machinery. The information to be marked on the machinery is usually specified in the relevant harmonised standards¹⁴ and has to be in the language of the member state in which the machinery is placed on the market and/or put into service and may be accompanied, on request, by versions in any other official Community language or languages understood by the operators.¹⁵

If the apparatus does not comply with the compatibility and electrical safety requirements for residential areas, this restriction of use should be clearly indicated where appropriate on the apparatus and packaging.¹⁶

Possible warnings on a band sawing machine:

- Instruction about machine transport at the machine (instead of material)
- Maximum dimensions of workpieces
- The maximum dimensions of the tools to be used

Exhibit 4: Examples of possible safety signs affixed to the machine



Source: MACC Costruzioni Meccaniche S.p.A.

¹³ The European Commission, FAQ, CE Marking

¹⁴ Ian Fraser, *Guide to the Application of the Machinery Directive, 2006/42*, European Commission Enterprise and Industry, 2nd Edition, June 2010, p.231

¹⁵ Machinery directive Annex I point 1.7

¹⁶ Electromagnetic Compatibility (EMC): Directive 2004/108/EC 9.4

Verifying the conformity of the machine

There is a list of safety requirements that may be checked by visual inspection of the metalworking band sawing machines. This list provides a number of questions that need to be answered in order to check the conformity of a metalworking band sawing machine. However this list does not claim to be exhaustive and it does not include specific requirements for certain types of metalworking band sawing machines, which can be found in the respective directives and harmonized standards.¹⁷ Therefore conformity with the checklist does not demonstrate full compliance with the Directive 2006/42/CE. It rather indicates whether health and safety requirements have or have not been met.

Checklist

A combination of fixed and movable interlocking guards should prevent access to the moving saw blade (exceptions see cl. 5.4 of the standard EN 13898:2003+A1:2009).

The interlocking devices connected to the guards should have at least one well-tried electromechanical detector switch designed to act as break contact.

Does opening an interlocking guard initiate a stop function of category 0 or 1?¹⁸

- Stop category 0: Stopping of the machine motion by immediate removal of electrical power to the machine actuators.
 - Stop category 1: A 'controlled stop' with power available to the machine actuators in order to stop the process and then removal of power afterwards; such a 'controlled stop' is defined as stopping with electrical power maintained at the machine actuators during the stopping process.
-

Where it is possible to touch the saw blade due to the saw blade overrun, the guard should be equipped with guard locking (c.f. EN 1088).

The guarding system, including guards and protective devices, should also be mechanically protected if the working environment includes loading and unloading of work materials by cranes or trucks or other mechanised handling equipment.

Automatic and semi-automatic band sawing machines should be equipped with the 'production mode' and a 'setting mode' ('set-up' mode).

In order to change the mode of operation, equally secure means should be available, for example: key switch, access code or other.

In the production mode, guards should be closed unless there is another function for protection in place (such as electrical controlled guards).

During set up mode, only necessary power-operated machine movements should be possible. Such movements are only allowed to be operated by a hold-to-run control. Possible movements include: power motion of the saw blade, powered movement or clamping of the work material, powered chip removal by conveyors. No more than one control panel is allowed to be active in the set-up mode.

The start/ restart controls should be located outside the working area and should impede operation after all interlocking guards are closed.

The emergency stop function should be in place. Exemptions: band sawing machines with hold-to-run controlled saw blade drive systems and manual head feeds.

The emergency stop controls should be in place at all control stations of the machine (e.g. main control unit, material feed stations or workpiece unloading stations), as well as at any area not visible from the operating panel position where a risk can occur.

A mode selector switch should be in place ensuring that only one mode of operation is active at a given time.

The entire length of the saw blade should be covered by fixed, adjustable or interlocking guards, except at the point of operation (see *Exhibit 5 on page 14*).

Interlocking moving saw band wheels should be protected by moveable guards.

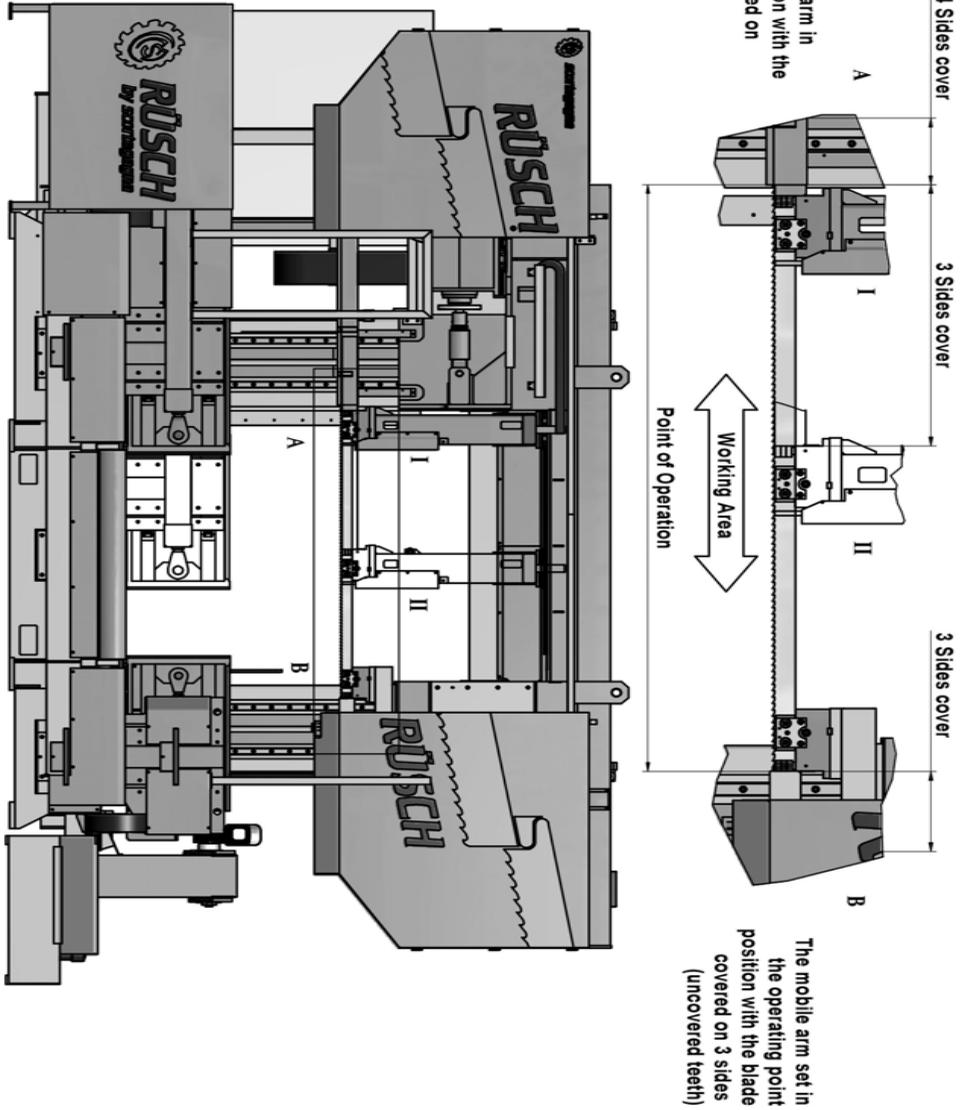
The saw blade during sawing should be supported with an adjustable guard which follows the motion of the guard.¹⁹

¹⁷ Maschinenbau- und Metall- Berufsgenossenschaft Geissler/ Huening, 'Checklist for visual inspection and functional test'

¹⁸ 9.2.2 IEC60204 Safety of machinery – Electrical equipment of machines

¹⁹ *ibid*

Exhibit 5: Horizontal band sawing machine – column type, illustration of the point of operation as defined in the checklist and in accordance with EN 13898:2003+A1



Source: UCIMU – RÜSCH by Scortegagna

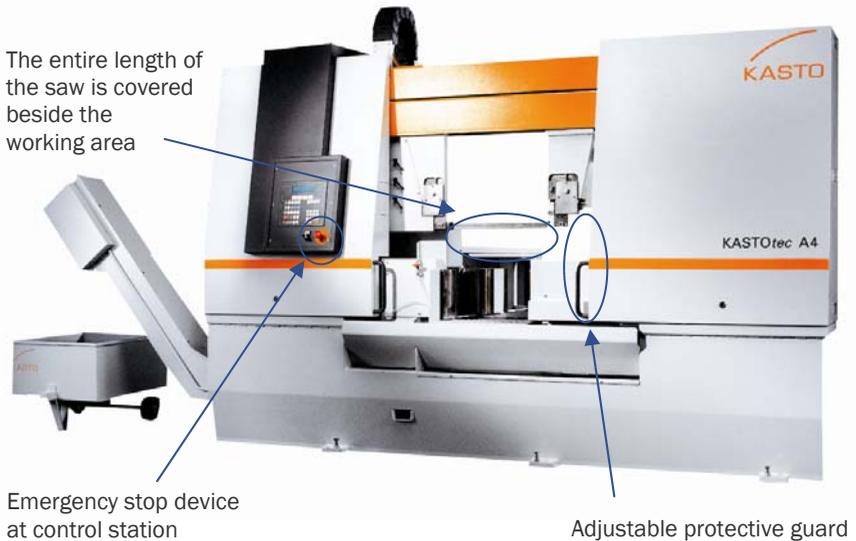
As defined by EN 13898:2003 band sawing machines are equipped with toothed cutting. We divide these types of machines into manual, semi-automatic-cycle machines and automatic machines. Such machines are used to cut metal

workpieces. Band sawing machines produce a uniform cutting action as a result of an evenly distributed tooth load. The pictures below show two different types of band sawing machines.

Exhibit 6: Horizontal band sawing machine - pivot type



Exhibit 7: Horizontal band sawing machine - column type



Accompanying Instructions

“All machinery must be accompanied by (a booklet of) instructions in the official Community language or languages of the Member State in which it is placed on the market and/ or put into service. The instructions accompanying the machinery must be either ‘original instructions’ or a ‘translation of the original instructions’, in which case the translation must be accompanied by the original instructions.

By way of exception, the maintenance instructions intended for use by specialized personnel mandated by the manufacturer or his authorised representative may be supplied in only one Community language which the specialised personnel understand”²⁰

It should contain the basic elements of the EC declaration of conformity along with other details (the following is not an exhaustive list):

- The business name and full address of the manufacturer and of his authorised representative.
- A general description of the machinery and the designation of the machinery as marked on the machinery itself, except for the serial number.
- The drawings, diagrams, descriptions and explanations necessary for the assembly, use, maintenance and repair of the machinery and for checking its correct functioning.
- Warnings concerning ways in which the machinery must not be used that experience has shown might occur.
- Recommendations that the operator does not carry out actions which could reduce the protection offered by the safeguards (like the removal of a safety component)
- remove safety components himself, only to make them visible again after an accident.
- At least all the warnings that are placed on the machinery.

²⁰ The Machinery Directive 2006/42 Annex I, 1.7.4

Transportation Information

Metalworking band sawing machines must be capable of being handled and transported safely and must be packaged or designed so that they can be stored safely and without damage. Machinery and its components and fittings must be stable enough to avoid overturning, falling or uncontrolled movements during transportation/ assembly/ dismantling and any other possible movements. The machine tool must be packaged for transport to the user's premises and designed and constructed so that it can be safely loaded, transported, unloaded and moved to the place of installation.²¹

As the weight and size of metalworking band sawing machine tools prevent them from being portable by hand, such machinery or each component part (not portable by hand and transported

separately and not being incorporated into the machinery) must:

- Either be fitted with attachments for a lifting gear;
- Or be designed so that it can be fitted with such attachments;
- Or be shaped in such a way that standard lifting gear can easily be attached.

Examples of lifting gears include gears with crane blocks, wire rope blocks, sheaves, swivels, sockets, turnbuckles and hooks.

Safety signs on transportation related information are not obligatory to be put on the machine, but could be recommended.

Exhibit 8: Instruction for machine transport at the machine

ACHTUNG!

ATTENTION!

ATTENTION!



Vor Anheben der Maschine Spannstöcke so in Position fahren, dass die Maschine waagrecht hängt.

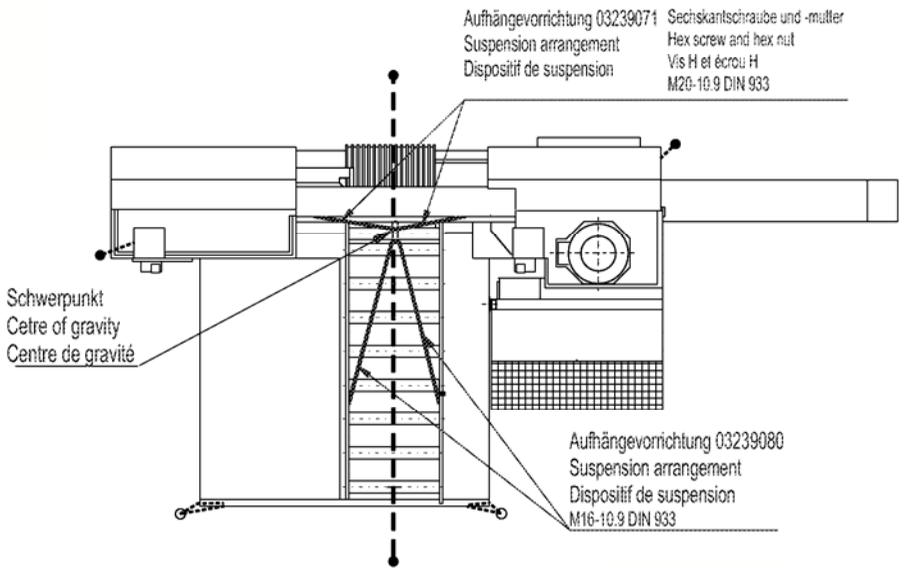
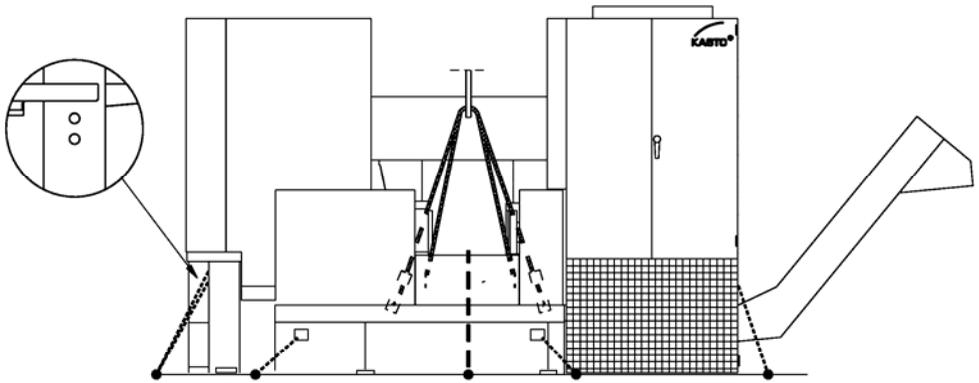
Before lifting the machine move clamping devices into right position - the machine must hang horizontally when picked up.

Avant de lever la machine, positionner les étaux de telle façon pour que la machine soit suspendue à l'horizontal.

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²¹ Ian Fraser, *Guide to the Application of the Machinery Directive, 2006/42*, European Commission DG Enterprise and Industry, 2nd Edition, June 2010, p. 156

Exhibit 9: Optional instructions for machine transport at the machine



-  Bows
-  In truck: taut-band
-  In container: fasten machine with ropes at four points on the floor

Source: KASTO Maschinenbau GmbH & Co. KG

The document provides the reader with general guidance for good practice and should only be taken as suggestions or observations for consideration when addressing issues relating to CE marking on band sawing machines.

This document is also available on the CECIMO website: www.cecimo.eu

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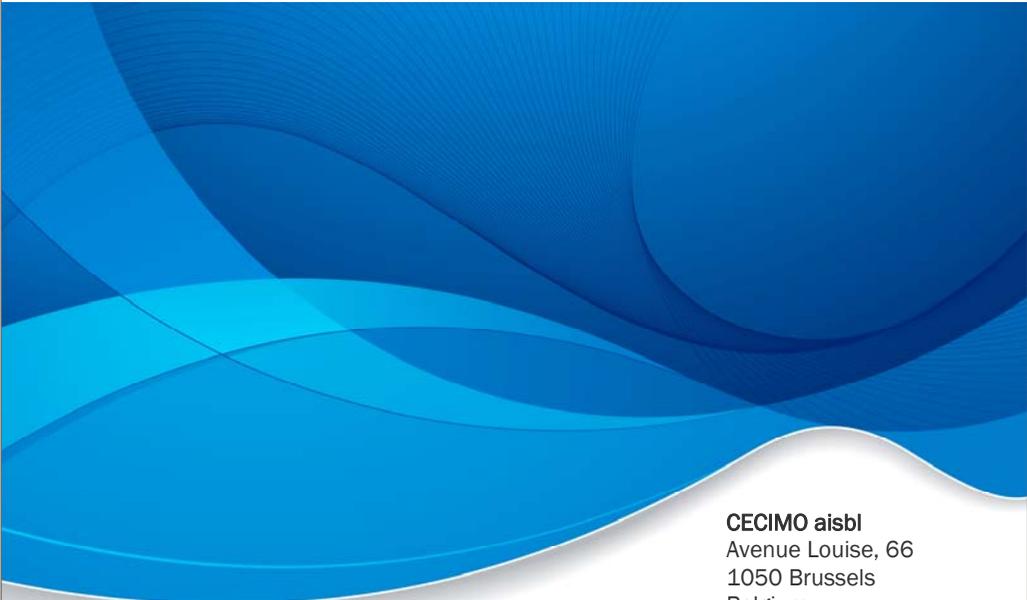
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A decorative graphic consisting of several overlapping, wavy bands of different shades of blue, ranging from light to dark. The bands flow from the left side towards the right, creating a sense of movement and depth. The graphic is positioned in the lower half of the page, partially overlapping the contact information.

CECIMO aisbl
Avenue Louise, 66
1050 Brussels
Belgium

Tel: +32 (0)2 502 70 90
Fax: +32 (0)2 502 60 82

information@cecimo.eu
www.cecimo.eu