

CECE guidance on the classification of attachments to construction equipment for the machinery directive 2006/42/EC



1. General consideration

The attachments fitted on construction equipment may be considered in the frame of machinery directive 2006/42/EC as part of a machine, interchangeable equipment and Partly Completed Machinery (further called PCM).

This document gives criteria and guidelines to identify the status of the various type of attachment as established by directive 2006/42/EC.

- a. Basic attachment or tools
- b. Interchangeable equipment
- c. Partly Completed Machinery (PCM)

Lifting accessories have also been considered.

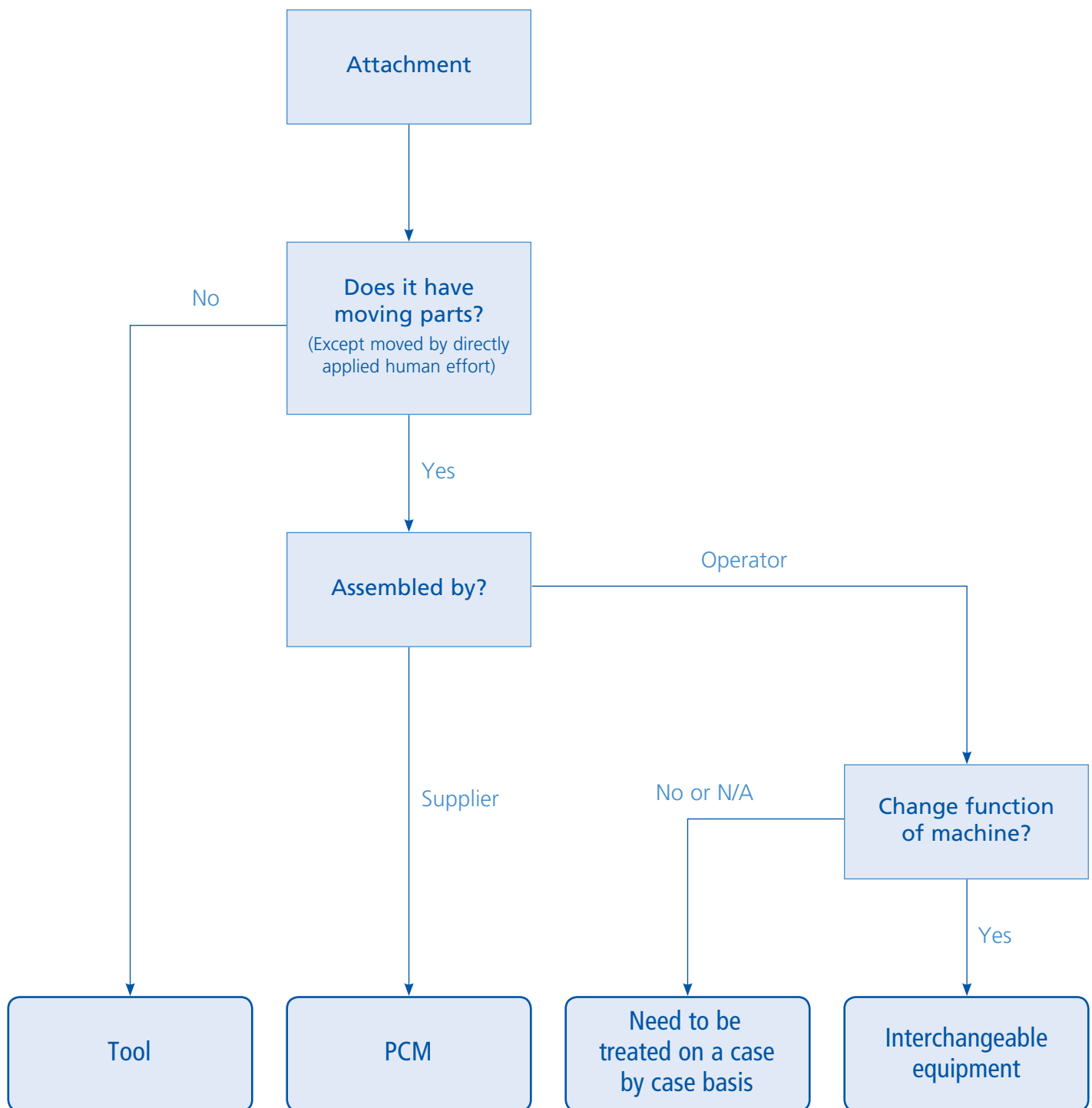
This document has been set up to ensure a common understanding between the various parties concerned and a common approach for the manufacturers.

The following diagram provides an overview to distinguish those 3 categories of attachments. More details are given in clauses 2, 3 and 4.

Criteria	Attachment		
	Tools	Interchangeable equipment	PCM
Moving parts other than parts moved by directly applied human effort	NO	YES	YES
Assembled by	operator	operator	supplier
Changes function of machine	NO	YES	not applicable
CE Mark + Declaration of Conformity	NO	YES	NO
Declaration of Incorporation	NO	NO	YES

Note: When an adapter (plate to adapt a tool) is on the machine, it should not be considered as interchangeable equipment or PCM, it is part of the machine.

The following flow chart gives a view on the way to identify the classification of an attachment.



2. Tools

There is no definition in the machinery directive.

The minutes of the Council meeting on “Internal market” of 20 June 1991 state that the Council and the Commission declare that a tool means a terminal part of a machine, in direct contact with the part or material to be worked, such as drill or concrete-breaker bits, grinding wheels or saw blades.

In addition a tool is a wearing part of a machine.

Generally tools do not have inherent risk nor moving parts (other than parts moved by directly applied human effort) and do not modify the basic function of a construction equipment to which they are intended to be fitted e.g. buckets. They are generally included in the machinery itself and covered by the Declaration of Conformity (DoC) of the construction equipment.

The basic functions of construction equipment are defined by the manufacturer. They are generally indicated in the instruction handbook.

It is recommended that the manufacturers of the tools, independent from the manufacturers of the machines, provide the necessary information to the user to install and use the tools safely.

Tools are not to be CE marked. The compatibility, including safety aspects, between the tool and the machine has to be evaluated with the information included in the instruction handbooks of the construction equipment and where applicable information provided with the tool (mainly case when the supplier of the tool is different from the supplier of the construction equipment)

Examples of tools:

- ▶ bucket;
- ▶ bucket teeth;
- ▶ front mounted bucket used on loader, excavators, backhoe, skid steer loader;
- ▶ forks;
- ▶ chisel for hydraulic hammer;
- ▶ blade on motograder;
- ▶ ripper shank;
- ▶ concrete skip manually operated...

Illustrations are given in annex A.

3. Interchangeable equipment

Definition from the machinery directive 2006/42/EC

'Interchangeable equipment' means a device which, after the putting into service of machinery or of a tractor, is assembled with that machinery or tractor by the operator himself in order to change its function or attribute a new function, in so far as this equipment is not a tool.

The 2 main criteria which characterize interchangeable equipment are:

- ▶ it changes or attributes a new function to the machine;
- ▶ they are installed on a basic machine by the operator.

Generally they are made up of parts connected together, at least one of which moves. They may be fitted with power circuits but they cannot be used alone or independently.

The interchangeable equipment may be put on the market together with a machine or used with a machine put into service earlier or later than the interchangeable equipment itself.

Interchangeable equipment put on the market together with a machine shall not be considered as part of the machine except if it is intended to be used only in this specific combination

If the interchangeable equipment is considered as part of the machine, the instruction hand book shall indicate clearly that this interchangeable equipment shall be used only with this machine

Interchangeable equipment is covered by the machinery directive 2006/42/EC:

- ▶ to take into account the hazards due to the wide variety of equipment that can be attached afterwards by the operator on a basic machine (tractor, construction equipment ...) to transform it into a ploughing, harvesting, excavating, lifting or loading/unloading machine, etc...
- ▶ to ensure a similar level of safety for machinery and interchangeable equipment
- ▶ to make available the necessary information to the users to select the combination of the machine and the interchangeable equipment adequately.

The compatibility between the interchangeable equipment and the machine has to be evaluated by the operator/user based on the information included in the instruction handbooks of the construction equipment and of the interchangeable equipment.

Note: The concept of interchangeable equipment must not be taken literally from a purely technical point of view. It is a legal concept specific to the machinery directive 2006/42/EC.

To comply with the machinery directive 2006/42/EC interchangeable equipment requires amongst other a **CE marking** and a **declaration of conformity** and an **instruction handbook**.

When a machine is placed on the market with interchangeable equipment, both machinery and interchangeable equipment shall be CE marked and accompanied with their individual DoC and instructions. Nevertheless, when the manufacturer of the interchangeable equipment is the same as for the machines on which it can be installed, the DoC and/or the instruction handbook may be combined.

Some example of interchangeable equipment:

- ▶ grab;
- ▶ concrete skip externally powered operated;
- ▶ trencher;
- ▶ fully controlled platform;
- ▶ fork with push off;
- ▶ sweeper;
- ▶ hydraulic hammer/breaker;
- ▶ crusher;
- ▶ earth drill;
- ▶ waste compactor;
- ▶ patch planer;
- ▶ chipper;
- ▶ concrete mixer;
- ▶ fence installer;
- ▶ snow blower;
- ▶ long boom arm used in demolition with a shear or crusher...*

Illustrations of interchangeable equipment are given in annex B.

* Demolition boom and arm equipment are often supplied by the base machine manufacturer who will have considered all the risks, such as falling objects and visibility. When buying demolition boom and arm from a third party it is critical to ensure that the supplier has considered all the risks and has provided appropriate solutions as part of the package sold. In case of doubt the base machine supplier should be consulted.

4. Partly completed machinery

Definition from the machinery directive 2006/42/EC

'Partly Completed Machinery' means an assembly which is almost machinery but which cannot in itself perform a specific application. A drive system is partly completed machinery. Partly completed machinery is only intended to be incorporated into or assembled with other machinery or other partly completed machinery or equipment, thereby forming machinery to which this machinery directive 2006/42/EC applies.

The main criteria which characterise partly completed machinery are:

- ▶ it is an assembly or subassembly to be incorporated in the construction equipment;
- ▶ the construction equipment with the partly completed machinery form a new machine which needs to be CE marked as a whole and accompanied with a DoC;
- ▶ whoever (manufacturer, user..) incorporates a partly completed machinery into a machine becomes the manufacturer of the new machine;
- ▶ the partly completed machinery does not necessarily modify or attribute a new function to the construction equipment into which it is installed.

To comply with the machinery directive 2006/42/EC they require amongst other a **declaration of incorporation** and an **instruction/installation handbook** but **no CE marking**.

Some examples of partly completed machinery:

- ▶ engines;
- ▶ drive system/device from the crank of the engine to the elements including the traction means (wheels, tracks...).

Illustrations of partly completed machinery are given in annex C.

5. Lifting accessories

Definition from the machinery directive 2006/42/EC

'Lifting accessory' means a component or equipment not attached to the lifting machinery, allowing the load to be held, which is placed between the machinery and the load or on the load itself, or which is intended to constitute an integral part of the load and which is independently placed on the market; slings and their components are also regarded as lifting accessories.

Illustrations of lifting accessories are given in annex D. This annex is the outcome of the Machinery Working group (doc WG 2006-13 rev 2).

To comply with the machinery directive 2006/42/EC they require a **CE marking**, a **declaration of conformity** and an **instruction handbook**.

Annex A

Example of tools

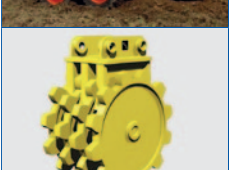
The examples given here after are supposed to be installed on machine for their primary use.

Note: Tools are without moving part or manually operated.

	Bucket used on backhoe or excavator
	Bucket teeth
	Front mounted bucket used on loader, excavators, backhoe, skidsteer loader
	Forks used on rough terrain variable reach trucks – Manually operated
	Chisel for hydraulic hammer
	Blade of a motograder
	Ripper shank
	Concrete skip – Manually operated

Annex B

Example of interchangeable equipment

	Grab
	Concrete skip – Externally operated and hydraulically powered
	Trencher
	Fully controlled platform
	Fork with push off
	Sweeper
	Hydraulic hammer/breaker
	Crushers
	Earth drills
	Waste compactor

	Planers
	Chipper
	Concrete mixer
	Fence installer
	Snow blower
	Long boom arm used in demolition with a shear or crusher...*

* Demolition boom and arm equipment are often supplied by the base machine manufacturer who will have considered all the risks, such as falling objects and visibility. When buying demolition boom and arm from a third party it is critical to ensure that the supplier has considered all the risks and has provided appropriate solutions as part of the package sold. In case of doubt the base machine supplier should be consulted.

Note:

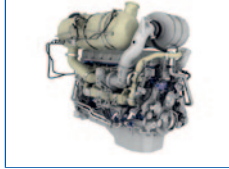
The classification of quick couplers is still in discussion in the European Commission's Machinery Working Group.

Annex C

Example of partly completed machinery



Drill rig on construction equipment

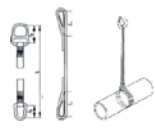


Engines

Annex D

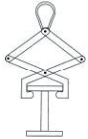
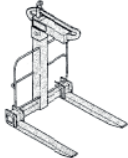
Classification of equipment used for lifting loads with lifting machinery

This classification (December 2009) was approved by the Machinery Working Group as a basis for a consistent application of the term 'lifting accessory' as defined in Article 2 (d) of the Machinery Directive 2006/42/EC. The document gives examples of equipment that are considered as lifting accessories and other examples of equipment used for lifting loads that are not considered as lifting accessories.

Picture examples	Designation	Description	Standard / Reference	Lifting accessory covered by directive 2006/42/EC	Work equipment not covered by directive 2006/42/EC
	Textile slings and their components	Assembly of one or more sewn webbing components for attaching loads to the hook of a crane or other lifting machine	EN 1492 parts 1, 2 & 4	X	
	Steel wire rope slings and their components	Assembly of one or more steel wire rope legs or an endless sling for attaching loads to the hook of a crane or other lifting machine	EN 13414 parts 1, 2 & 3	X	
	Chain slings and their components	Assembly of one or more chains for attaching loads to the hook of a crane or other lifting machine	EN 818 parts 1 to 8	X	
	Lifting eyelets	Eyelets intended to be placed on the load by threading for lifting it*		X	
	Lifting eyelets	Eyelets intended to be placed on the load by welding for lifting it*		X	
	Lifting ear	Steel plate with a hole intended to be welded to a load for lifting it*		X	
	Lifting anchor	A device intended to be integrated into a structure (e.g. a concrete units, concrete panel) in order to provide an anchorage for lifting the structure*	Machinery Working Group Doc. 2000.21rev1, item 4	X	
	Rope eyelets	Rope eyelets intended to be attached to prefabricated building elements for lifting them*		X	
	Corner fittings	Corner fittings intended to be integrated in ISO containers by welding for lifting them*		X	

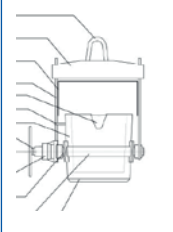
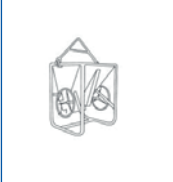
* Such equipment is considered as a lifting accessory when it is independently placed on the market

** Such equipment is considered as a lifting accessory when it is not permanently attached or fixed to the lifting machinery, in other words, when the machinery can be used to lift loads without the equipment or with other lifting accessories

Picture examples	Designation	Description	Standard / Reference	Lifting accessory covered by directive 2006/42/EC	Work equipment not covered by directive 2006/42/EC
	C-hook	Equipment in the form of a 'C' used for lifting hollow loads e.g. coils, pipes etc.**	EN 13155	X	
	Clamp	Equipment used to handle loads by clamping on a specific part of the load – also known as tongs**	EN 13155	X	
	Lifting beam	Equipment consisting of one or more members equipped with attachment points to facilitate the handling of loads which require support at several points**	EN 13155	X	
	Container spreader beams	Container spreader beams placed between lifting machinery and the load in order to attach it**	Machinery Working Group Doc. 2003.13rev.1	X	
	Lifting forks	Equipment consisting of two or more arms fixed to an upright with an upper arm, essentially to lift palletised or similar loads**	EN 13155	X	
	Plate clamps	Non powered equipment used to handle steel plates by clamping them between jaws**	EN 13155	X	
	Lifting magnet	Equipment with a magnetic field creating sufficient force for gripping, holding and handling loads with ferro magnetic properties**	EN 13155	X	
	Vacuum lifter	Equipment which includes one or several suction pads operating by vacuum**	EN 13155	X	
	Cargo/ liftnet				X
	Reusable big bag	Big bag specifically intended for lifting bulk material or debris and not used for packaging, storage or transport			X

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** Such equipment is considered as a lifting accessory when it is not permanently attached or fixed to the lifting machinery, in other words, when the machinery can be used to lift loads without the equipment or with other lifting accessories

Picture examples	Designation	Description	Standard / Reference	Lifting accessory covered by directive 2006/42/EC	Work equipment not covered by directive 2006/42/EC
	Single use big bag	Big bag used for packaging bulk material for transport and storage that can be lifted in order to unpack the material, for single use (one trip)			X
	Foundry crane ladle	Tiltable vessel with a manual or motorised tilting mechanism intended for containing, transporting and discharging molten material with lifting machinery			Powered foundry crane ladles are subject to the Machinery Directive
	Concrete bucket	Bucket that is hung from a crane to transport and distribute concrete on a construction site			Powered concrete buckets are subject to the Machinery Directive
	Lifting wheel barrow	Wheel barrow with lifting eyelets intended for transport and application of concrete and mortar within a building site			X
	Debris bucket	Bucket specifically intended for transporting debris on a construction site with a crane and to unload debris without detaching it from the crane			X
	Container	Container provided with eyelets for lifting operation, used for transport and storage of goods	Machinery Working Group Doc. WG 2005.41		X
	Eyelet for container	The lifting eyelets for the above container*		X	
	Bulk container	Container used for collecting e.g. waste products in one place and then lifted on to a vehicle and transported to another location where it is unloaded (The chain sling in the picture is not part of the container)			X
	ISO-container				X
	Load pallet for forklift trucks				X

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** Such equipment is considered as a lifting accessory when it is not permanently attached or fixed to the lifting machinery, in other words, when the machinery can be used to lift loads without the equipment or with other lifting accessories



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