General introduction - Safety Instructions

Introduction

- Personal safety is extremely important when operating any kind of machine, and the use of cnc equipment is no exception. Please read the sections about safety carefully! Make sure you know how to react in all possible circumstances! Also become familiar with those functions you intend to use! If you intend to use new functions for the first time, make sure you read and understand the relative sections of this manual.
- Store this manual in a safe place, or in your pc and make a shortcut on your desktop. Make sure it is always within reach for consulting purposes.
- Neither Ketele N.V. nor their distributor assume any responsibility for loss or damage, directly or indirectly, resulting from the use of this product, or resulting, directly or indirectly, from a product failure. Neither Ketele N.V. nor their distributor assume any responsibility or liability for either loss or damage, directly or indirectly, caused by an article or object, made with this machine.

Safety symbols in this manual and on the machine

List of safety symbols

• **Yellow triangular signs with a black border** indicate important instructions, warnings or potential dangers.

	The operator has to pay particular attention to the described situation.
	Electrical hazard.
 }	Physical hazard, specifically a hand or finger which might get stuck between moving machine parts.

 }	Physical hazard, specifically a hand or finger which might get cut.
	Danger of hot objects.

• **Blue circular signs** indicate an important mandatory instruction, or subjects which require the user’s attention.

	The information described in this paragraph contains a useful hint or suggestion.
	In the situations described, it is mandatory to wear ear protection.

	In the situations described, it is mandatory to unplug the machine from the wall outlet.
	An earth connection which corresponds to the described characteristics, is mandatory.

• **Red circles with a red diagonal line** are prohibition signs.

	This sign indicates a prohibited action or a prohibited situation.
	A general prohibition to disassemble a machine or to open machine covers.

	Prohibition to place or use the machine in a humid or in a wet environment.
	Do not make fire in the vicinity of the machine.



- **OK sign**

General safety instructions

	Make sure you follow the operation procedures exactly as they are described in this manual. Make sure that only qualified people, who have read and understood this entire manual, operate the machine. Improper or incorrect use of this machine may lead to accidents and personal injury.

	Always operate this machine in optimal environment conditions. Make sure to give it sufficient space, put it on a stable flat table or surface and make sure the complete operating environment is clean and sufficiently illuminated.
	Whenever you plan to clean the machine, or when the machine will not be used for several days, or when covers or other parts have to be disassembled, always unplug the machine from the wall outlet.
	Never use or operate the machine when under influence of alcohol, drugs or medication.
	Never use this machine for a purpose which it is not intended for. Make sure you never try to exceed the capacity of this machine.

	Always make sure the machine gets power from an outlet with a proper earth connection. If you are not sure, have a qualified electrician measure the resistance of your wall outlet earth connection.
	Always store your tools in the tool calibration stand. By doing so you avoid potential injuries because of cutters lying around.
	Only use original Cyborg parts and accessories, such as cutters, cutter knobs, power cords, timing belts, limit switches, etc. The use of parts which were not approved by Cyborg may result in damage, fire, or personal injuries.
	On spots where you see the pictogram on the left, be careful to remove your hands when the machine is in an automatic operation cycle.

	Always pay attention when handling engraving tools! They can be extremely sharp and can easily cut you.
	Avoid wearing necklaces, shawls, or other loose hanging garments or jewelry when operating this machine. If you have long hair, bind it together in a ponytail.
	Do not ever allow children to use or operate this machine. Make sure children can not reach the machine, nor the tools or accessories used in combination with it. Specific parts and accessories could harm them, cause injuries, burns, or they could be poisonous.
	Never place or operate the machine in a wet or humid environment. Failing to respect this prohibition, may result in personal injuries, severe electrical shocks, and damage to the machine and its electronics.
	Never try to modify, disassemble or repair a machine, unless you are a qualified and trained technician. Unqualified people trying to modify, disassemble or repair this machine, may get injured, or get severe electrical shocks.

	Do not lean, sit or lie on this machine. Not only could this lead to injuries, but also different machine parts might get damaged. Do never pose any load on this machine.
	Never use dull cutters. They may result in the creation of excessive heat, which in turn, might lead to fire in specific materials.
	Although the noise level of this machine is relatively low, users with sensitive ears or with damaged ear-drums are advised to wear ear protection.
	Do not operate this machine in the neighbourhood of open fire. Engraving powder, chips, some plastics, woods and even some metals may catch fire.

	To remove the dust and the engraving chips which were not removed by the vacuum boot, always use a vacuum cleaner, never use compressed air. To get rid of dust in narrow spaces, use a small soft brush, such as a toothbrush.
	Every Cyborg X-300 is equipped with a dust removal boot on the depth regulator nose assembly. Always use a vacuum cleaner to remove the engraving dust and chips. Make sure this vacuum cleaner is explosion free.
	Never try to cut or engrave flammable materials, such as magnesium.
	Before launching a cutting or an engraving job, always make sure your material and the cutter are securely fastened, and that no tools or accessories are lying around in the zone of the automatic machine moves.

	Warning, some parts of the machine may become very hot, among which the cutters, the spindle, the spindle motor and the stepper motors.
	Make sure that you connect the machine to an electrical outlet which corresponds with the machine rating. These ratings can be found on the machine plate on the right side of the machine (see the image on the right and below)! Before powering the machine, make sure that it has been set up correctly for the incoming voltage! You can find information about changing this setting in the chapter about the Installation environment.
	If the power cord which is supplied with the machine is too short to reach the power outlet, and you need to use an extension cord, make sure you use one which is adequate for the machine’s rating (voltage, frequency, current). When using a cable reel, make sure to completely unwind the cable from the reel. Be careful as excessive cable lengths may cause the cable to heat.
	In case you see, smell or hear sparks, smoke, a burning odour, abnormal or unusual sounds, you must immediately unplug the power cord. Do not attempt to continue using the machine without having it checked by an authorised technician.

	Never use cutting oil or any other fluid to engrave or cut, without taking proper precautions to prevent the fluid from entering the electronics cabinet! Although the electronics are well protected, they are not completely isolated and fluids could enter the electronics cabinet.

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