

Safety requirements when operating the machine

The following notes are an excerpt from the manual. Please consider the entire manual when operating the machine.

1.1 Dental machines

1.1.1 Dry machining

In dry machining, the material is machined without the cooling spray function.

ATTENTION

During machining, the dusts that are released have to be suctioned off by a suitable vacuum cleaner. Check the compatibility of the vacuum cleaner and the material to be machined. If the dusts are not suctioned off, the machine can be damaged.



WARNING

Danger due to hazardous dusts!

During dry machining of materials, dusts can be released which are hazardous to health and must be vacuumed. Observe the information in the substance-specific data sheets here.

The following dental materials are dry machined:

- Zirconium oxide
- PMMA/wax
- Nano-Composites

1.1.2 Machining with the minimum quantity lubricating system

The material is machined with the use of the cooling spray function.

The cooling spray function is used for the following dental materials:

- CoCr
- Titan



ATTENTION

Only use the cooling lubricant recommended by DATRON, since this is optimally suited for the system. Non-recommended cooling lubri-

cants can lead to poor results and damage of the machine. Observe the safety data sheets of the used cooling lubricants.

When using liquid lubricants which have not been explicitly recommended by DATRON, observe the manufacturer specifications with regard to fire and explosion hazards. If in doubt, consult a safety professional.



ATTENTION

Danger of blockage in the vacuum cleaner!

No vacuuming is allowed during machining with the cooling spray function.

1.1.3 Handling of different materials

For every machining operation, only load the machine with materials which are **either** dry **or** are machined with the minimum quantity lubricating system. Do **not** mix these two milling technologies during **one** machining operation.

Clean the machine thoroughly before you change from dry machining to machining with the minimum quantity lubricating system and vice versa. Also empty the chip tray.



ATTENTION

When switching from the machining of metallic materials to flammable materials (e.g. PMMA, wax, plastics, etc.), and vice versa, the machine must be thoroughly cleaned.

Empty the chip tray in this case as well.

Observe the safety information of the coolant and material manufacturers! Keep fire blankets and fire extinguishers of classes A, B, C, D ready for extinguishing fires. Metal fires can start, especially when machining aluminium, titanium and magnesium. Metal fires are to be extinguished with a class D fire extinguisher. Do not extinguish fires with water under any circumstances. This poses a danger of explosion!

1.1.4 Machining titanium

Make sure you observe the following when machining titanium:



WARNING

When machining titanium or other reactive materials, there is a general fire hazard due to the kind of material. DATRON therefore recommends that you install a suitable automatic extinguishing system if you machine titanium. Be sure to consult a safety professional or someone who has been trained accordingly to evaluate the fire haz-

ard and the specific situation at your site. A corresponding extinguishing system can be purchased from DATRON.

1.1.5 Unmanned production

When operating the machine without supervision, make sure you observe the following safety information:



WARNING

This constitutes a fire hazard under unfavourable conditions!

When the tool wears out or breaks, this can cause nests made of flammable materials to ignite in the chip tray. DATRON therefore urgently recommends that a suitable automatic extinguishing system is installed for unsupervised machine operation. Be sure to consult a safety professional or someone who has been trained accordingly to evaluate the fire hazard and the specific situation at your site. A corresponding extinguishing system can be purchased from DATRON.

1.1.6 Maintenance

Every time the machine is loaded, make sure that the workpiece holders, workpiece holder plates, grippers and the holder at the multi-rotary axis are **free of contamination**.

Clean the machine daily.

Empty the chip tray regularly, especially when it is more than half-full.

Clean the machine thoroughly and always empty the chip tray when you

- switch from dry machining to machining with the minimum quantity lubricating system, and vice versa.
- switch machining from metallic materials to flammable materials (e.g. PMMA, wax, plastics, etc.), and vice versa.

1.2 CNC Milling Machines

1.2.1 Use of coolant/lubricant

Canisters with cooling liquids must be labeled.



WARNING

This constitutes a fire hazard under unfavorable conditions!

- After a tool-breakage the machine can start sparking and ignite the cooling agent if the broken milling cutter jams in the material and the rotating collet chuck subsequently comes in contact with it.
- Do not leave the machine running unsupervised. In the case of unsupervised operation, there must be suitable automatic fire protection installed (clarify with the safety officer).
- Keep fire blankets and fire extinguishers of classes A, B, C, D ready for extinguishing fires.
- Please also adhere to the safety instructions of the cooling agent and material manufacturer! Metal fires can especially occur when machining aluminum.

Metal fires are to be extinguished with a class D fire extinguisher. Do not extinguish fires with water under any circumstances. This poses a danger of explosion!

Ethanol



WARNING

Fire hazard due to spark formation!

- When machining steel or other metals where sparks are formed during machining, pure ethanol may not be used as a coolant/lubricant. Use another suitable coolant/lubricant (e.g. fatty alcohol).
- If ethanol is being used as a coolant: No more than 5 l of ethanol may be stored in a flame-resistant canister for operational use at the machine.

Chip suctioning



WARNING

Danger of explosion in the vacuum cleaner!

- Suctioning chips is not allowed when ethanol is being used as a coolant.
- Only use extraction equipment which is suitable for extracting swarf from the material to be machined.
- When you clean the machine, wait until the alcohol has evaporated and use a vacuum cleaner which is free of ignition sources.