

# Equipment & tools

Many different tools might be used for ice work. Most of them are standard working tools that do not need special attention in terms of work safety, because they are not particularly dangerous. Others require a closer look and were defined as potentially dangerous. The equipment which is often used for ice work and that needs special attention in terms of work safety will be listed below. Special tools that will be used by certain groups only need to be analysed in a designated risk assessment, as this can be evaluated by the respective teams only.

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- Ladders

Only step-ladders are allowed on the ice. Before mounting a ladder, the snow coverage needs to be removed from the ice to get a stable underground. To prevent the ladder from sinking into the ice, crossbars have to be on both lower ends, if possible combined with spikes or pins to prevent the ladder from sliding.

Always remember to stabilize the step-ladder by one person as long as somebody is standing on it and prevent it from being accidentally knocked over.

Do not lean over the sides, do not step on the last three rungs and wear proper shoes with stable soles and free of snow and ice.

Do not carry objects of more than 10kg weight and use belts or shoulder bags to transport your tools in order to have your hands free to hold yourself while climbing the ladder.

Operation instructions for the use of ladders on the ice can be found here:



- Ice saws

Ice saws are dangerous due to their various sharp saw teeth. To avoid snags always fold up the wooden handle on the saw teeth when the ice saw is not in use. Never keep the saw stuck in the snow or lying on the ground unfold. While sawing always hold it with both hands, vertical and teeth facing towards you.

- Tripods

When using tripods on the ice to lower equipment into the water they need to be approved for the respective weight that is planned to be attached to it. Consider also the safe working load of the rope you are using. The snow cover needs to be removed beforehand to ensure a stable stand on the ice surface. Always protect the tripod against tipping by fixing all legs with ice screws or else. When lowering or heaving equipment by rope, make sure that it is not rubbing on sharp edges and can move freely. Wear gloves to protect your hands when handling ropes with weight hanging on them as they might slip and cut into your skin.

- Corer/auger

There are different types of drills and corers that will be used on the sea ice for different tasks. Manual and electrical ones will be used likewise. When working with drills, corers and augers remember to remove all loose parts and bands from your clothing beforehand as they might get entangled. Be careful with the sharp ends of the corers and augers when handling them. When coring through thicker ice and using more than one auger, remember to attach one auger after another while coring. Do not handle a corer with several augers attached to it, as this might bend the auger and can hurt you and others around while handling it. The same applies when the corer is taken back out of the ice: remove one auger after another while pulling them out. Always remember to get assistance from somebody to grasp the auger and hold it to ensure that it will not fall into the hole. (Hinweis auf Gefährdungsbeurteilung)

- Chain saws

Are only to be used by specially trained personnel. You need to provide a training certificate or a proof of ability for motor saw handling before joining the expedition, otherwise you are not allowed to handle one. Cut protection clothing, including eye protection, has to be brought and used by those who plan to use chain saws.

- winches

Winches need to have a stable stand on the ice to prevent them from sinking, tipping or sliding. A solid and even flooring needs to be available. Wear gloves and helmet when winches are operated. Be aware of wires and ropes with tension and stay clear from the snap back area, so that you can't be hit if wire or rope break.

- Nets

If you lower nets into the water you have to wear gloves to protect your hands against injuries. Never wrap the rope around your hands as it might get entangled. Wear a helmet to protect your head from being hit by parts of the net that are moving especially during times of stronger winds.