For guidance on managing construction health risks go to
www.hse.gov.uk/construction

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Using the Diamond Drilling Machine

1. Wear protective equipment including ear defenders and goggles.
2. Check there are no hidden cables or pipes before drilling.
3. If core drilling into a slab or block of masonry that is not yet part of a fixture, it should be securely clamped or held in a vice.
4. Always grasp the machine with two hands on the handles provided. The on/off switch can be controlled with either the right or left hand.
5. Do not try to change speed or direction of rotation of the core drill or switch the hammer action on or off while the machine is running.
6. Keep the core drill rotating while drilling and when withdrawing the drill bit.
7. When withdrawing the drill bit on completion of drilling the hole, take care that the core of masonry which may inside the core drill does not fall out injuring feet.
8. Stop the machine and unplug before removing the core of masonry or any rubble from inside the core drill.
9. Keep the cable clear of the core drill and any sharp edges on the work.
10. If the cable appears to be cut or damaged in any way, switch off the machine and unplug at the mains before inspecting it. If the cable attached to the diamond drilling machine is damaged stop using the machine. Contact the hire company. If an extension cable has been damaged, do not use it again.
11. Take care not to accidentally pull the plug from the socket.
12. Switch off and remove the plug from the socket before leaving the diamond drilling machine unattended.
13. If the equipment does not work properly, do not attempt to repair it. Contact the hire company.

Keep this leaflet safe as it may be required for reference at a future date

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Diamond Drilling Machine – Hand Held

The rules and procedures in force where people are at work may require the person responsible for this equipment to carry out a specific risk assessment.

It is important to read all of this leaflet BEFORE you use the Diamond Drilling Machine

1. Electricity can be hazardous and must always be used with great care.
2. Plan how to tackle the job and try to foresee any problems that may occur in order to work safely around them.
3. This diamond drilling machine may cause injury to persons or damage property if it is not handled and used carefully and properly.
4. If you have not used a diamond drilling machine before, you should seek some instruction from a competent person, and take the time to familiarise yourself with the equipment before you start work.
5. If using water to cool the core drill and to clear the dust and particles, ensure the electrical parts and connections do not get wet.
6. This hand held diamond drilling machine is designed to drill large diameter holes through masonry, brick and concrete in walls and floors.
7. The following items of personal protective equipment must be worn:
   Impact Resistant goggles; dust mask – minimum of FFP3(s) protection; ear muffs or plugs giving protection at the ear for levels up to 80 dB(A); suitable protective gloves; rcd if using a 230/240 volt (mains) supply.
8. This machine must not be used by minors or by anyone under the influence of drugs or alcohol.
9. This diamond drilling machine is designed for operation by an able bodied adult. Anyone with either a temporary or permanent disability must seek expert advice before using the machine

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Before Starting Work...

WORK AREA

1. Do not use this diamond drilling machine where there is a danger of explosion. It will ignite fumes from petrol or gas cylinders.
2. Make sure the area is clear and safe and that no-one is close-by or could cause distraction.
3. Protect other people from the noise and debris. Warn others to keep away. Barrier off work area.
4. If the core drill is likely to break through a wall where people may be present on the other side, erect barriers around the breakthrough, zone and post a lookout to warn people of the danger.
5. Ensure there are no hidden electric cables or service pipes present where the drilling is taking place.

OPERATORS

1. The following items of personal protective equipment (PPE) are the minimum that should be worn whenever this machine is used. Particular jobs or environments may require a higher level of protection.
2. Impact resistant goggles must be worn when working with this machine.
3. This machine is likely to cause noise levels up to 80 db(A) – appropriate ear mufts/plugs must be worn to give protection at the ear.
4. If water is not being used as a coolant an appropriate dust mask (minimum FFP3(s) protection) must be worn to protect from dust particles, etc.
5. Anyone who is working close-by will also need to wear appropriate personal protective equipment.

DIAMOND DRILLING MACHINE

1. Check the drilling machine, cable, plug and all other equipment. If anything is found to be damaged do not use the diamond drilling machine – contact the hire company.
2. Check the plug on the machine matches the supply. Do not try to force connections or improvise them.
3. Machines with a cylindrical yellow industrial plug fitted are designed to run off a special 110v supply. The hire company will have provided a portable transformer if required to power the machine from a normal mains 230v supply. If a portable transformer has been supplied, take care not to injure yourself when trying to move it about – it may be heavier than it looks. Machines designed to run directly from 230v mains will have either a normal square pin plug fitted or a blue industrial plug.
4. Most hand-held diamond core drilling machines operate at more than one speed. Some have a speed sensitive trigger that allows the core drill to rotate slowly if the trigger is squeezed gently in order to start the drilling. More pressure on the trigger will increase the rotational speed of the core drill.
5. Though higher speeds can be used with smaller core drills, a slower speed should be used when using larger diameter core drills.
6. The hand held drill is suitable for use with core drills up to 150mm (6"). Do not attempt to drill large holes unless confident the machine can be controlled with the increased torque.
7. Most hand-held diamond core drilling machines can be set to rotate clockwise or anti-clockwise. Ensure the settings are correct before commencing work.
8. On some diamond drilling machines there will either be a dust extraction head or water coolant adaptor that fits between the machine and the core drill bit.
9. Ensure you understand the controls. Before switching on the diamond-drilling machine, know how to stop it.

CORE DRILLS

1. Switch the diamond drilling machine off and unplug it before changing the core drill.
2. Diamond core drills are designed either for 'dry' use or for use with water as a coolant. Use only the correct grade core drills as recommended by the hire company for the material being drilled. See the section headed "Water as a coolant" below.
3. Larger core drills use a pilot drill within the core bit to keep it central while starting.
4. The pilot bit should be removed from the core bit once the hold has a good start. The rest of the core can be drilled without the pilot bit.
5. The pilot bit may have a taper shank and will require a special drill tool to remove it.
6. The pilot bit may have a larger diameter boss on the shank, with a drive peg that locates in the slot in the core bit; this pilot bit can be just pulled from the core bit.
7. Ensure the core drill is long enough to go right through the wall or floor to be drilled. Remember the 'core' of the brick or masonry remains inside the core drill until drilled right through. Core drills are available up to 400mm (16") long.
8. Extension bars can be used to extend the overall length of the core drill/machine combination. This does not increase the depth that the core drill can penetrate.

WATER AS A COOLANT

1. Hand held diamond drills are designed primarily to be used 'dry', that is, used without water as a coolant, usually with a vacuum dust extraction system.
2. If using water as a coolant, ensure an adequate supply of clean water either from the mains or a water tank.
3. Ensure the wastewater will not cause damage. Check the water can drain away safely. If the hire company supplied water collection equipment, use it.
4. Ensure adequate water flow to the core drill when drilling.
5. Do not disconnect any water hose until the drill has been switched off, unplugged and any water supply turned off (water tap/valve turned off)..

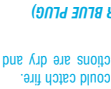
ELECTRICAL SAFETY

The machine will only operate on one voltage: 110v or 230v. 110v machines will have a yellow industrial plug fitted. 230v machines will have either a normal square pin plug fitted or a blue industrial plug.
Read the instructions below for the machine.

110 VOLT EQUIPMENT (YELLOW PLUG)

1. If using a portable transformer plug the transformer directly into the 230 volt socket. Do not use any 230v extension cables.
2. If an extension cable is required, follow any special instructions given by the hire company. If the hire company have not given any special instructions, a suitably rated heavy duty 110v extension cable should be used, not longer than 50 metres (160 feet). The extension cable must only be used between the transformer and the machine.
3. Lay the extension cable out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped and places where vehicles might run over it. Unroll it fully or it will overheat and could catch fire.
4. Ensure any extension cable connections are dry and safe.
5. Ensure any extension cable connections are dry and safe.

230 VOLT EQUIPMENT (SQUARE PIN OR BLUE PLUG)



1. Use a residual current device ("RCD") plugged directly into the 230 volt socket. Plug the machine into the RCD, this will help protect against electric shock if the cable or machine is damaged.
2. Use the "TEST" button to check the RCD is working each time it is used. Reset the RCD according to the instructions given by the hire company.
3. If an extension cable is required, follow any special instructions supplied with it.
4. Lay it out carefully avoiding liquids, sharp edges, doorways or windows where it might be trapped and places where vehicles might run over it. Unroll it fully or it will overheat and could catch fire.

RCD.

5. Ensure any extension cable connections are dry and safe.

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