

Safe Operating Procedure #06 – Angle Grinder (5" / 9")

Activities	Procedures	Hazards/Risks	Controls
1	Check electrical safety Ensure that the grinder cord and any extension lead are tagged with a current test tag and not damaged. Ensure that you are connected to power supply that has RCD protection. Ensure that the working area is not wet.	Possible electric shock, electrocution, burns, fire.	Ensure RCD protection and cord/leads are in proper condition and area is not wet. In the event of a fault, do not proceed until Supervisor instructs you to however Supervisor must document fault in Works Diary. Repair to be arranged and alternate safe-to-use equipment to be provided. Ensure that a fire extinguisher is nearby.
2	Check safety of work area	Clear area of trip or slip hazards and ensure that others in the area cannot come enter your work zone or be affected by noise, sparks	Burns or damage to hearing or injuries due to disc shattering. Combustion of flammable substances
3	Select the size of grinder to be used	Assess the type of work to be undertaken, and whether a larger 9-inch grinder is required or if a smaller one is able to complete the task sufficiently. A larger grinder is typically only required for more intensive, heavy-duty work tasks.	9-inch grinders are larger and heavier, have increased risk of loss of control, often have a greater risk of kickback and generate greater noise levels. 9-inch grinders have a greater risk of deeper cuts when making contact with bare skin.

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			9-inch grinders have greater risks associated with repeated, long-term hand-arm vibration.	
4	<p>Check condition of grinder grinding/cutting disc or install new disc</p>	<p>Check that grinder is in safe condition with switched working, auxiliary handle, air vents are clear, guard in place.</p> <p>Check also that there are no cracks or splits, and ensure that the disc is not worn, that it is the correct disc for the material to be worked on and that it is installed in the correct direction of travel.</p> <p>Check that the disc is rated at or less than the RPM speed of the grinder and that it is installed securely and not loose.</p>	<p>A damaged grinder body can cause possible electric shock, electrocution, burns, fire.</p> <p>Clogged vents can cause a short circuit to occur.</p> <p>Using the wrong disc for cutting causing kickback or shattering of the disc.</p> <p>Flange and centre hole must be the same size and the nut must not be damaged or disc can shatter or kickback.</p> <p>Never use a worn disc from a larger grinder, in a smaller grinder as it can shatter.</p> <p>If the speed of disc and grinder do not match or the flange or nut are in poor condition or the disc is not</p>	<p>Use the right size grinder for the job and not any one larger or smaller than necessary.</p> <p>Ensure grinder is not damaged and that air vents are clear. If it has one, ensure that the grinder cut-off (dead man) switch is in proper working order.</p> <p>Use correct type of disc, e.g. abrasive discs for grinding</p> <p>Make sure hole and flange and nut are in proper condition and the same size</p> <p>Always ensure that the disc is in good condition and the correct one for the grinder to be used.</p> <p>Ensure speed of disc (RPM) and speed of grinder (RPM) are the same or that the disc RPM is faster than the grinder RPM.</p> <p>Ensure guard is properly attached unless grinder is small enough to</p>

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			attached properly and in the right direction – kickback or shattering can occur.	be safely controlled with one hand, ensure that it has an auxiliary handle for two-hand operation.
5	Secure work to be cut/ground and ensure it is suitable for the grinder	Ensure that the metal to be worked is secure and cannot move and that any offcuts cannot drop onto the electrical cord or your feet. Ensure it is not too thick or an unusual shape that can force the grinder to twist or be used at an unsafe angle.	Metal including any offcuts can heat up and cause burns or burn leads on the ground. It can move and make the grinder kickback or disc shatter. If the grinder is twisted while in contact with the metal it can kickback or shatter the disc.	Secure work and ensure it can safely be ground with the equipment chosen. Ensure that any offcuts fall in a safe area. Ensure other persons are kept away In the event of a problem, do not proceed until Supervisor instructs you to.
6	Ensure disc is properly secured	Cutting discs need the flat washer	Disc can break or shatter and cause injuries	When changing from grinding to cutting and back ensure the washer is the correct one – flat washer for cutting
7	Operate grinder	Operate grinder. Ensure that you can work between shoulder height and knee height and that you do not face over the work or position yourself behind the grinder.	Kick-back. Sparks fly back causing fire, injuries to eyes or burns, fumes from disc, poor control of grinder if it sticks, kicks or needs urgent stopping.	Wait till grinder reaches normal operating speed before cutting/grinding. Position yourself with work at the right height and so that you are not in line or behind the grinder but to one side. Do not exert pressure on the tool.

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		<p>Do not use excessive pressure or twist the grinder while the disc is in motion.</p>	<p>Excessive pressure can cause disc shatter or kickback. Noise can damage hearing and fumes can affect respiratory system.</p> <p>Excessive repeated vibration can lead to disrupt circulation and can cause damage to nerves, tendons, muscles, bones and hand and arm joints.</p>	<p>Wear leather gloves, eye protection and hearing protection. Also wear steel capped footwear and ensure that there is adequate ventilation.</p> <p>Take regular breaks to avoid extended periods of exposure.</p> <p>Use a smaller grinder whenever possible. See point 3 about selection of type of grinder.</p> <p>Ensure the tool is in good condition and operates smoothly to reduce an unnecessary amount of vibration.</p>
8	Switch off grinder and retrieve work	<p>Stop the grinder when finished.</p> <p>Switch off grinder and wait till it stops spinning before placing it down. Ensure that the work has cooled before handling it.</p>	<p>Grinder can cause injury or damage to electrical cords if in contact whilst still spinning.</p> <p>Work can still be hot and cause burns</p>	<p>Wait until the grinder stops operating before placing it down and keep it away from the cord or extension lead.</p> <p>Stay with the work until it cools and do not handle it until it is cool. Check for any smouldering materials in the vicinity.</p>

- Personal Protective Equipment that must be used: hearing protection, leather gloves, respiratory protection if not in well-ventilated area, steel capped footwear



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This SOP has been developed in consultation with me and I agree to follow it and carry out tasks in a safe manner, reporting any problems to my immediate Supervisor.



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