

Title:	Workshop Welding Equipment Power Supply																	
Priority	Red – Major Non-Conformance																	
Legislation:	PUWER, Management Regs, HASWA S2, 3, 7, 8																	
Brief Description:	Workshop welding equipment and other similar high current items should be inspected to ensure the power supply is sufficient and safe to operate.																	
Equipment Affected:	Workshop welding equipment and other high current work equipment																	
<p>During HAE SafeHire audits at a number of locations auditors have identified significant issues with welding equipment and other high current draw and / or three phase equipment e.g. large heaters.</p> <p>Equipment is in use with supplies that do not have the capacity to power the equipment. As an alternative to getting suitable power supplies in place, existing supplies have had fuses and other protection systems bypassed.</p>																		
<p>1 – Fuse Bypass 220 to 305 amp mig welders – drawing well above 13 amps from supply</p>																		
<p>2 – Single Phase Conversion S2 wire not connected</p>		<p>3– Mig Welder – 16A socket connected to machine. 16A to 13A male plugs on fly lead – exposing live pins if 13A plug is connected first</p>																
<p>Recommended Actions:</p>		<table border="1" style="float: right;"> <tr> <td></td> <td colspan="2">50A/16.5V to 305A/29.2V</td> </tr> <tr> <td>X</td> <td>20%</td> <td>60%</td> </tr> <tr> <td>I_z</td> <td>305A</td> <td>176A</td> </tr> <tr> <td>U_z</td> <td>29.2V</td> <td>22.8V</td> </tr> <tr> <td>U₁ = 230V</td> <td>I_{1 max} = 65A</td> <td>I_{1 eff} = 29A</td> </tr> </table> <ul style="list-style-type: none"> • Immediate action - review welding equipment and other high current work equipment, remove unsafe equipment from use e.g. as per items above • Review user guides / data plates and identify the required input voltage and capacity e.g. 230 volts 32 amp supply is often sufficient. For larger equipment 63 amp or 125 amp sockets and plugs may be required • Arrange to have suitable supplies installed in work areas where use of extension leads or similar can be reduced or eliminated • Ensure work equipment is subject to a combined inspection and test at a period not exceeding 12 months – base test frequency on risk – 6 months may be advisable • Ensure all engineers own equipment in use at your premises is treated as above – combined inspection and test plus a suitable supply. Remove from use if not 			50A/16.5V to 305A/29.2V		X	20%	60%	I _z	305A	176A	U _z	29.2V	22.8V	U ₁ = 230V	I _{1 max} = 65A	I _{1 eff} = 29A
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Circulation:	Management / Workshop Teams																	