WTIA Guidance Note 7: Recommended Welding Machine Daily Inspection and Pre-Start Check List

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ITEM	DESCRIPTION OF INSPECTIONS TO BE CARRIED OUT	STANDARD
Power supply	Disconnect and isolate the power supply to the welding machine prior to performing these pre-start checks.	
Mains Supply Socket & Switch	Inspect for any obvious damage and defects to the switch or socket. Ensure the correct size plug is fitted for the rated current and duty cycle of the welding machine	**AS/NZS 3000**
Plug & Primary Supply Cable to the Welding Machine	Check the primary power supply cable is of the correct rating for the welding machine. Ensure the cable is securely anchored onto the welding machine and the plug. Check for any damage to the plug or cable. Special attention should be given to any cuts, burns, abrasions, and fraying or other damage to the cable insulation, which could expose live wires. Ensure the supply cable is located away from welding cables and connections.	**AS/NZS 3100**
Welding Machine / Welding Power Source	Inspect the welding machine for obvious damage to the cabinet, power switches, indicator lights or controls. Ensure any unused or exposed terminals have insulation in place. For outdoor use, ensure the welding machine has at least an IP23 rating.	**AS 60974.1 or AS 60974.6**
Welding Cable Connections (Electrode and Work Return Cables)	Ensure that welding cable connections to the welding machine are in good condition; contact surfaces are clean and are properly tightened. If terminal posts are used ensure only brass washers and the correct insulated type brass nut is used. Ensure that all connections are fully insulated and cables are firmly anchored to fittings. For a.c. welding machines check that electrode and work return cables respectively are correctly connected to the welding machine. For d.c. welding machines check polarity and ensure electrode and work cables are correctly connected for the procedure in use and that any other d.c. welding machines in the vicinity are connected with the same polarity unless appropriate controls are in place.	**AS 1674.2 and IEC 60974-12**
Welding Cables	Examine all welding cables (leads) for damage such as cuts or abrasions, burns, damaged insulation or frayed wires or any other damage that may expose live wires. Electrode and work return cables should be of similar length. Electrode and work return cables should be of the same current carrying capacity and rated for the maximum current rating and duty cycle of the welding activity. Building steelwork shall not be used as a work return path.	**AS 1995 and AS 1674.2**
Welding Cable Extension Connections	Check that both the male and female connections are fully insulated with clean contact surfaces and all fittings are tightened properly with no conductors exposed.	**AS 1674.2**
Welding Hand Pieces	Check the welding hand piece is the correct type, in good condition and fully insulated. The hand piece must be rated for the maximum current rating and duty cycle of the welding activity. Cracked or damaged hand pieces shall be taken out of service immediately.	**AS 60974.11**
Work Return Clamp	Check the work return clamp or connection is securely connected to the work return cable and to the job close to the welding activity.	**AS 1674.2**
Engine Drive Welding Machines	Check exhaust fums are dispersed away from the work area and any other personnel working in the immediate vicinity. Do not use engine drives below ground level, in an enclosed or poorly ventilated area or within closed buildings.	
Hazard Reducing Device (HRD) – Switch or Voltage Reducing Device (VRD)	If a hazard reducing device (HRD) such as a switch or voltage reduction device (VRD) is used ensure that the indicator lights or voltmeter are functioning and indicating "Power-off" or "low voltage" (Safe ⇒ green) and high or welding voltage (Unsafe ⇒ green flashing or red) conditions as the welding machine is operated in a normal welding cycle. Note: This check is done with power on.	**AS 1674.2 and AS 60974.1**
Electrical Inspection Tag	Check that a current electrical inspection tag, traceable to your equipment maintenance register, is attached to the welding machine.	

Notes

- Electrical inspections should be carried out in accordance with AS 1674.2 Section 5. Note: Requirements for inspection: Annual for fixed power sources; three monthly for portable power sources; monthly for ancillary equipment
- If on completion of this pre-start checklist you are unsure of the safety of any part of this equipment - DO NOT USE. Isolate the equipment and notify your supervisor immediately, in order that remedial action can be taken.
- Fumes are generated by hot work. Take adequate precautions to limit exposure to fumes from welding consumables or surface coatings and contaminants.
- Ensure that you have all necessary Personal Protective Equipment in place, in good order, correctly fitting and dry, before turning on the welding power source.

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