SAFETY

Welding equipment inspection checklist

The arc welder's check before starting: machine hook-up, work lead and clamp, frame ground, cable insulation and splices, electrode holder, leaks, the disconnect switch and the manufacturer's instructions, following OSHA 1910.254(d).

How often: **Before each use** Who: **Welder** **About 5 min** **22 items**

Site or area _____ Asset or line _____

Date and time _____ Completed by _____

Before you use it

- OSHA 29 CFR 1910.254(d) covers the operation and maintenance of arc welding equipment. Before starting operations, all connections to the machine are checked to make certain they are properly made, the work lead is firmly attached to the work, magnetic work clamps are freed of adherent spatter on their contact surfaces, and coiled welding cable is spread out before use to avoid serious overheating and damage to the insulation (1910.254(d)(2)). Grounding of the machine frame is checked, with special attention to the safety ground connections of portable machines ((d)(3)); there must be no leaks of cooling water, shielding gas or engine fuel ((d)(4)); and proper switching equipment for shutting down the machine must be provided ((d)(5)).
- Cables with splices within 10 feet (3 m) of the holder may not be used ((d)(8)). Cables with damaged insulation or exposed bare conductors are replaced, and lengths of work and electrode cable are joined only with connecting means specifically intended for the purpose, insulated for the service conditions ((d)(9)(iii)). Electrode holders not in use are placed so they cannot make electrical contact with persons, conducting objects, fuel or compressed gas tanks ((d)(7)). A machine that has become wet is thoroughly dried and tested before it is used ((d)(9)(ii)).
- Under (d)(9)(i), the operator should report any equipment defect or safety hazard to the supervisor, and use of the equipment is discontinued until its safety has been assured; repairs are made only by qualified personnel. Workers assigned to operate or maintain arc welding equipment must be acquainted with 1910.254 and with 1910.252(a), (b) and (c) ((d)(1)), and the manufacturer's printed rules and instructions are strictly followed ((d)(6)).
- Installation items that the walk-up can see: a disconnecting switch or controller at or near each machine that has none mounted as an integral part ((c)(3)(i)); the frame or case grounded, except on engine-driven machines ((c)(2)(i)); chains, wire ropes, cranes, hoists and elevators never used to carry welding current ((c)(2)(iii)); conduits not used to complete a work-lead circuit, and pipelines not used as a permanent part of one ((c)(2)(ii)); control apparatus enclosed except for operating wheels, levers or handles, and input power terminals and live parts completely enclosed and accessible only by means of tools ((b)(4)(ii)–(iii)).
- OSHA sets no interval for this check beyond "before starting operations", so run it per machine before each job or shift. The fire precautions for the welding itself, such as the 35-foot clearance, the fire watch and the permit, are in 1910.252(a) and in our hot work permit template.

Machine

NO.	ITEM	RESULT	NOTES
1	**Scan the tag on the welding machine**	☐ Visited	
2	**Machine identifier and work location**	_____	
3	**Machine type**	☐ Transformer (a.c.) ☐ Rectifier or inverter (d.c.) ☐ Engine-driven ☐ Multi-process	

Hook-up and grounding (1910.254(d)(2)–(3), (c)(2))

NO.	ITEM	RESULT	NOTES
4	All connections to the machine checked and properly made	☐ Pass ☐ Fail ☐ N/A	
5	Work lead firmly attached to the work; magnetic clamp contact surfaces free of spatter	☐ Pass ☐ Fail ☐ N/A	
6	Machine frame or case grounded; on a portable machine, the safety ground connection checked	☐ Pass ☐ Fail ☐ N/A	
7	No chain, wire rope, crane, hoist, elevator, conduit or pipeline carrying welding current	☐ Pass ☐ Fail ☐ N/A	
8	Coiled welding cable spread out before use	☐ Pass ☐ Fail ☐ N/A	

Cables and electrode holder (1910.254(d)(7)–(9), (b)(4)(iv))

NO.	ITEM	RESULT	NOTES
9	Electrode and work cable insulation undamaged; no exposed bare conductors	☐ Pass ☐ Fail ☐ N/A	
10	No splice within 10 ft (3 m) of the electrode holder; cable joints made with connectors intended for the purpose	☐ Pass ☐ Fail ☐ N/A	
11	Electrode holder insulation intact; holder parked where it cannot touch persons, conducting objects, fuel or gas cylinders	☐ Pass ☐ Fail ☐ N/A	
12	Welding lead terminals on the machine protected from accidental contact	☐ Pass ☐ Fail ☐ N/A	
13	Photo of the cables, clamp and holder	☐ Photo taken	

Machine condition (1910.254(d)(4)–(6), (d)(9)(ii), (b)(4), (c)(3))

NO.	ITEM	RESULT	NOTES
14	No leaks of cooling water, shielding gas or engine fuel	☐ Pass ☐ Fail ☐ N/A	
15	Disconnecting switch or controller at or near the machine, and it works	☐ Pass ☐ Fail ☐ N/A	
16	Control apparatus enclosed; input terminals and live parts enclosed and accessible only with tools	☐ Pass ☐ Fail ☐ N/A	
17	Machine dry; if it has been wet, dried and tested before use	☐ Pass ☐ Fail ☐ N/A	
18	Machine suited to the conditions here (corrosive fumes, humidity, oil vapor, flammable gas, vibration, dust, weather)	☐ Pass ☐ Fail ☐ N/A	
19	Manufacturer’s operating instructions available and followed	☐ Pass ☐ Fail ☐ N/A	

Result

NO.	ITEM	RESULT	NOTES
20	**Result**	☐ Safe to use ☐ Defect found: taken out of service and reported	
21	**Defect and action taken**		
22	**Welder**	Name Signature Date	

Follow-up

For each failed check or reading out of limit: what was found, what was done, and the work order raised for it.

NO.	WHAT WAS FOUND	ACTION OR WORK ORDER	OWNER	DUE

References

- OSHA 29 CFR 1910.254, arc welding and cutting
  https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.254
- OSHA 29 CFR 1910.252, welding, cutting and brazing: general requirements
  https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.252

Free to use and adapt. To run it on mobile, with checkpoint scans, readings checked against their limits as they are entered, and photos and signatures attached to the check, see vardian.io/templates/welding-equipment-inspection-checklist.