Forkway Risk Assessment – RA 006

Task/ Activity	This assessment covers the use of ARC or MIG welding equipment.			**Persons Exposed**		
Location	Forkway locations and customer sites throughout the UK and Republic of Ireland.			**Forkway Employees**	**Customer Employees**	**Members of Public**
Name of Assessor(s)	Westley Hawkins (Regional SHEQ Advisor)	**Date of Assessment**	12/04/2024 (V2)	1 - 2	May be in area	May be in area
		Date of Next Review	12/04/2025			

Stop and Think

Before undertaking any task/ activity it is essential that you have read and understood all of the control measures in this document and are satisfied that the control measures herein are suitable and sufficient. If you find the control measures are not suitable and sufficient, contact your line manager before proceeding.

The personal protective equipment required at all times throughout the task is Safety Boots, Overalls, Nitrile Gloves and Safety Glasses. Where additional PPE is required it will be identified at the relevant points in this risk assessment, supporting risk assessments, supporting safe working methods and relevant COSHH assessments.

Hazard	Initial			Control Measures	Residual		
	Likelihood	Severity	Rating		Likelihood	Severity	Rating
1. Asphyxiation occurring in Service Vehicle due to inert gas cylinder leaking, being pierced, punctured whilst in transit;	3	5	15	Where possible transport gas cylinder in an open backed vehicle. Cylinder must never be transported in the cab of the vehicle under any circumstances. Cylinder must be fitted to a trolley or the MIG welder, stored upright and suitably secured within the vehicle using ratchet straps to prevent any movement. Pressure gauges and regulators must be removed when in transit to prevent damage. Ensure all other items in rear storage area of vehicle are appropriately secured to prevent any movement that could impact cylinder. Check on cylinder after any harsh braking or following an incident. Ensure all cylinder valves are closed and remain vigilant for any sign of leaks. Vehicles carrying cylinders must have suitable ventilation (two low level vents and one roof mounted rotator vent).	1	5	5
2. Asphyxiation occurring due to gas cylinders or associated components leaking whilst in use;	3	5	15	Pre use checks must be undertaken before use including using leak detector on all joints and connections. If any leaks are found, close off main valve on bottle and do not use the equipment until it has been rectified by a competent person. Report any leaks to line manager and site contact immediately.	1	5	5
3. Fire or explosion from using welding equipment in an explosive atmosphere;	3	5	15	Welding equipment must never be used in an explosive atmosphere. Always check with customer contact before using any welding equipment that it is safe to use it in the desired area. Complete any customer permit-to-work procedures. Never use welding equipment near a battery/ battery charging area.	1	5	5

MULTIPLY THE LIKLIHOOD AND SEVERITY TO GET THE RISK RATING

Likelihood - (5=Very Likely, 4= Likely, 3= Possible, 2= Unlikely, 1= Highly Unlikely)

Severity - (5=Very Severe, 4= Severe, 3= Moderate, 2= Slight, 1=Negligible)

0- 5 = Low Risk - No Action Required.

6-15 = Medium Risk - Ensure adequate controls are in use.

16-25 = High Risk - Stop operation and implement adequate control measures

Hazard	Initial			Control Measures	Residual		
	L	S	R		L	S	R
4. Fire from arc, sparks or molten metal making contact with flammable or combustible materials in the vicinity;	3	5	15	Always check the vicinity before starting for any materials which may be flammable or combustible and consult customer to ensure there is nothing you may have missed. If flammable or combustible materials are present nearby, either move to a more suitable area or remove the items before starting. If neither can be achieved contact your line manager before proceeding. A more specific assessment may be required.	2	5	10
5. Fire from arc, sparks or molten metal making contact with flammable or combustible items or components on the equipment under repair;	3	5	15	Remove component requiring welding where possible and take to a suitable area. If component cannot be removed check for and remove any items or components in the vicinity which may be flammable or combustible. If this cannot be achieved, make use of fire-retardant blankets and ensure a second person is on hand equipped with a suitable fire extinguisher to watch for fire.	2	5	10
6. Fire from ignition of flammable or explosive chemicals or residues on the equipment/ component under repair or in the vicinity;	3	5	15	Check with customer contact if any chemicals or residues are present. Clean contaminated equipment down before starting. If chemicals or residues are present in the vicinity move to a more suitable area free from chemicals or residues or have them removed from the area before starting. If any of this cannot be achieved contact your line manager before proceeding. A more specific assessment may be required.	1	5	5
7. Explosion of pneumatic tyres from contact with heat;	3	5	15	Avoid at or near pneumatic tyres. Remember heat can be conducted and travel along metal. If work is required near pneumatic tyres, remove the wheels before starting. If work is required on the wheel itself ensure the tyre is removed.	1	5	5
8. Explosion or fire from welding closed tanks, drums or vessels which contain or previously contained flammable substances or residues;	3	5	15	Engineers must not weld closed tanks, drums or vessels under any circumstances. Always check for the presence of closed tanks, drums or vessels before starting. Avoid working near these where possible. If work near these cannot be avoided contact line manager before proceeding.	1	5	5
9. Fire from hot components causing ignition a period of time after work has taken place;	3	5	15	Always monitor area for at least half an hour before leaving site and remain vigilant for signs of smoke or smouldering during this time. Consider using water to douse and cool areas that have been heated.	1	5	5
10. Damage to eyes from UV radiation;	3	4	12	Engineers undertaking welding and any person assisting (fire watcher, etc.) must wear a suitable welding mask at all times when welder is in operation. Person operating welder must communicate with second person and ensure their mask is down before starting. Warn others in area that welding will be undertaken beforehand and explain that they must not look in the direction of the light emitted from the weld torch. Where there are other persons operating in the area, protective welding screens must be erected to stop the UV light being emitted out into the area. Cordon off a safe work area to prevent people wandering in.	1	4	4

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Hazard	Initial			Control Measures	Residual		
	L	S	R		L	S	R
11. Burns to skin from UV radiation;	3	3	9	Engineer undertaking welding must wear safety boots, flame retardant overalls, flame/ heat retardant gauntlet gloves, leather apron and welding mask at all times throughout task. Ensure no skin is left exposed before starting.	1	3	3
12. Burns or ignition of clothing from contact with flame, sparks or molten metal;	4	5	20	Only trained and authorised engineers must use welding equipment. Correct techniques must be followed as per training. Always direct torch away from person and avoid working in a position where sparks or molten metal will strike you. In addition to standard safety boots and overalls, engineers must wear flame/ heat retardant gauntlet gloves, leather apron and welding mask. Overalls must be buttoned to the top. If there is a possibility of sparks or molten metal falling from above head height a flame/ heat retardant hat must also be worn. Ensure al PPE is clean and free from any flammable chemicals or residues before starting.	2	5	10
13. Burns from contact with hot tools or components;	3	5	15	As above. Allow tools or components that have become hot to cool before handling them. Consider using water to douse areas that have been heated. Keep all parts of person clear of welding nozzle during or following use.	2	5	10
14. Musculoskeletal injuries from manual handling of gas cylinder and welder;	3	4	12	Avoid manual handling where possible through use of mechanical handling equipment or similar. Cylinder must be secured to a suitable trolley or to welder. Ensure trolley/ welder remains in good condition. All engineers are trained in the correct manual handling techniques and principles. If cylinder/ welder is too heavy, share load with another person.	2	4	8
15. Struck or crushed by falling cylinders;	3	4	12	Care must be taken when handling cylinders. Cylinders should be secured to a suitable trolley. Trolley should be placed on firm level ground when in use. During transit, ensure trolley is secured in place using ratchet straps.	2	4	8
16. Exposure to hazardous fumes;	3	4	12	Welding indoors must only be completed using a suitable LEV system. Respiratory protective equipment must be used as specified in Safe System of Work 006 and Safety Alert ref 2019-02. If components being heated are coated with lead or chromate paints or are galvanised or cadmium plated, contact your line manager before proceeding. A more specific assessment may be required. Consult customer on the nature of any chemicals or residues that may be present and ensure they are cleaned from the component being worked on and surrounding areas before starting. If welding is being carried out routinely on a daily basis or for prolonged periods, contact line manager. A more specific assessment may be required.	2	4	8
17. Electric shock from welder/ welding process.	3	5	15	Do not use welder in damp or wet conditions. Avoid contact with or standing on the workpiece/ conductive surfaces. If standing on conductive surface is unavoidable, use a sufficiently sized rubber mat to insulate yourself. Ensure hands and welding gloves are clean and dry prior to handling equipment. Ensure welder and any extension cables remain dry throughout task. A suitable RCD must be in place. Ensure welder and associated equipment is with current PAT test. Complete pre-use checks paying specific attention to the welding cables, plugs, clamps or torch/ electrode holder. If the equipment fails, or if its power supply cable or plug gets damaged, do not use it. Never try to repair powered tools yourself. Keep cables out of harm's way, and clear of moving parts.	1	5	5

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