MandateSystems
PRESSURE SYSTEMS SAFETY

Pressure Systems Safety Manual and Written Scheme of Examination Risk Assessment and Method Statement

Generic Risk Assessment & Method Statement

Approved by Management: Amy Kent - Managing Director

Policy operational from: 1 September 2024
Next review date: 31 August 2025

Method Cover Statement

Project: Carry out an examination of the pressure system and provide information so that a Written Scheme of Examination (WSE) can be provided to the client in accordance with the Pressure Systems Safety Regulations 2000, and/or carry out the examination in accordance with the Written Scheme.

Mandate Systems: Amy Kent
MBA, Tech IOSH, AIIRSM
Managing Director
Mandate Systems

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Method Statement / Risk Assessment

Scope of work: In accordance with Mandate Systems Written Scheme of Examination or as advised by Mandate Systems for the relevant pressure system(s).

Standard of Work: HSE – Safety of Pressure Systems Approved Code of Practice and Guidance – L122 dated 2014
Mandate Systems' Written Scheme of Examination (Current Issue)
Mandate Systems' Engineering Department Manual (Current Issue)

ANY DEVIATION FROM THIS RISK ASSESSMENT AND/OR METHOD STATEMENT MUST BE APPROVED BY THE MANAGING DIRECTOR PRIOR TO COMMENCING THE TASK

Equipment and General Items

The Mandate Systems Engineer Surveyor employed on the task must wear the recognised and required Personal Protective Equipment (PPE) at all times, which on may include clean fully covering work wear, safety boots, hard hats and 'High Vis' jacket or waistcoat, with the additional PPE, Respiratory Protective Equipment (RPE), ear and eye protection during operations where required, gloves during the manual handling and pressure venting.

The Mandate Systems' Engineer Surveyor will ensure that at the end of the working day the site is left clean and tidy. The conditions of work for the Mandate Systems' Engineer Surveyor on site will be adhered to at all times, as will this method statement.

Equipment to be used:

Non-electrical hand tools
Hand pump with analogue reference gauge*
Self-calibrating ultrasonic thickness meter*
Small torch
Electronic tablet
Mobile smart phone
Digital endoscope

**Reference checks are carried out annually and records are held by Mandate Systems. Data relating to the equipment used is published within the final report.*

Personal Protective Equipment

Standard PPE/RPE will be worn at all times and specialist PPE as instructed by the principal contractor or end client.

Standard Personal Protective Equipment:

Safety shoes
Long trousers
Short sleeved shirt
High-Vis vest
Hard hat (where appropriate)
Eye protection
Ear protection
Gloves
Respiratory Protective Equipment
Harness (where appropriate)

Mandate Systems are to be informed of any site-specific requirements:

PPE
Permit to work system
Equipment testing requirements
Any equipment limitations
CCNSG card or ID to enter site
Additional safety procedures as per instruction
Site Induction
Any additional security requirements

Environmental and Waste Management

The work place will be kept clean and tidy at all times. Minimal waste is envisaged; however, Mandate Systems will dispose of all non-contaminated waste materials, produced from the examination work. All waste will be segregated as necessary or possible for recycling purposes at our own works facility.

Personnel Responsible for Works

Mandate Systems' employees will make themselves known to the site contact. They will also agree access and egress routes together with welfare facilities and discuss all aspects of the method statement.

Method Statement/ Risk Assessments

The Method Statement and Risk Assessments relating to the works will be followed at all times. Any deviation will require prior approval from the Engineering Manager or Managing Director.

Training Requirements

All Mandate Systems' Engineer Surveyors have the relevant training for all the work to be carried out. training records are held by Mandate Systems.

Method Statement

By Whom: -

All work will be carried out by the Mandate Systems' Engineer Surveyor. In accordance with this method statement and within the scope of the Written Scheme of Examination.

The Mandate Systems' Engineer Surveyor holds the relevant certificates to carry out the work.

MANDATE SYSTEMS PERSONNEL RESPONSIBLE FOR SAFETY ON SITE

Name:	Amy Kent
Position:	Mandate Systems, Managing Director
Emergency Tel. No.	01274 691091

MandateSystems
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METHOD STATEMENT

Prepared by: A Kent, Managing Director, Mandate Systems **Assessor qualifications: MBA, Tech IOSH, AIIRSM**	**Work area:** As agreed with Client and / or defined by Written Scheme of Examination
Brief description of task being assessed: Mandate Systems are instructed to prepare or review a Written Scheme of Examination, and examinations in accordance with the Written Scheme on the pressure system and associated equipment as described in this document. **Operation:** Examination of pressure vessels, pressure systems and associated safety accessories by Mandate Systems' Engineer Surveyor	

Stage 1	**Access to site:** ● The Mandate surveyor will report to site and will report to the site contact. ● The Mandate surveyor will partake in any required site inductions prior to the work starting as deemed necessary. ● Where the pressure system to be worked upon is less than 10 Bar working pressure, is classed as low risk. ● If required, the Mandate surveyor is to be escorted to the area of work. ● Working area to be segregated as agreed with the site contact for the safety of all personnel using the area.
Stage 2	**Delivery of equipment and materials:** ● The Mandate surveyor carrying out the work will be transporting the parts and tools to site and clearing site on completion of the work.
Stage 3	**Preparation for the work:** ● The Mandate surveyor is to familiarise themselves with the system. ● Ensure the working area is safe and any delicate client's equipment has been removed or protected.
Stage 4	**Visual appraisal of the compressed air systems:** ● Carry out a visual appraisal of the pressure system, while the system is working and pressurised. Ask the users and operators if they have had any issues before carrying out the isolation process.

Stage 5	**Isolation:** Carry out the isolation process and drain down the system in a safe controlled way to conform to the client's requirements, make sure the pressure gauges are at zero before breaking into the system. The system will be electrically isolated for mechanical purposes only.
Stage 6	**Testing pressure gauges** • Locate Pressure gauge(s) • Remove pressure gauge/s using appropriately sized spanner • Apply PTFE tape to gauge thread to provide seal • Test pressure gauge using appropriate testing calibrated gauge pump • Test 3 rounds against calibrated gauge, to ensure accurate readings • Take readings at 4 points on the pressure gauge. Should be within 10% be found to be satisfactory for operation. Pressure gauge readings should correspond to readings on calibrated gauge • Take note of reading in report • Check pressure gauge external condition • Check for damage, cracks, corrosion on pressure gauge • Re-apply PTFE tape to gauge thread (if necessary).
Stage 7	**Testing pressure relief valves** • Locate safety valve(s) • Remove safety valve/s using appropriately sized spanner • Apply PTFE tape to valves thread to provide seal • Test safety valve using appropriate testing calibrated gauge pump • Test 3 rounds against calibrated gauge, to ensure accurate readings • Safety valve should lift at set pressure. To be found to be satisfactory for operation • Take note of reading in report • Check safety valve external condition. • Check for damage, corrosion and discolouration (due to heat) • Re-apply PTFE tape to valves thread (if necessary) • Secure safety valve back onto vessel (If acceptable and functional for use) • If the safety valve is unacceptable for service, replace it immediately. Inform on report • Carry out manual lift test on safety valve to ensure full operation of safety valve seat during operation • Record findings and make notes • Take all into account to determine the overall condition of the safety valve.
Stage 8	**Testing pressure switches** • Locate pressure switch • Check pressure switch (where possible) for signs of damage, condensation, wear • Check and ensure pressure switches operate at the safe working limit of the unit. (System cuts off at set pressure) • Record findings and make notes • Take all into account to determine pressure switch condition.

Stage 9	**Air receivers** • Check access to vessel is unrestricted • Check vessel external condition • Checks for signs of damage, dents, oil leaks, corrosion, paint scratches • Check external longitudinal and end welds are in good condition • Open vessels inspection plugs (where applicable) • Apply PTFE tape to threads to provide seal • Check vessels internal condition, using appropriate equipment • Check for condensation and oil levels • Check corrosions levels • Check condition of internal longitudinal and end welds • Ensure welds are fully penetrated • Close vessels inspection plugs • Check thickness of vessel walls • Take ultrasound thickness readings using appropriate tool • Take note of smallest reading in report • Record findings and make notes • Take all into account to determine the overall condition of the vessel.
Stage 10	**Separator tanks (welded pressure vessels)** • Check access to vessel is unrestricted • Check vessel external condition • Checks for signs of damage, dents, oil leaks, corrosion, paint scratches. • Check external longitudinal and end welds are in good condition • Open vessels inspection plugs (where applicable) • Apply PTFE tape to threads to provide seal • Check vessels internal condition, using appropriate equipment • Check for condensation and oil levels • Check corrosions levels • Check condition of internal longitudinal and end welds • Ensure welds are fully penetrated • Close vessels inspection plugs • Check thickness of vessel walls • Take ultrasound thickness readings using appropriate tool • Take note of smallest reading in report • Record findings and make notes • Take all into account to determine the overall condition of the vessel.

Stage 11	**Isolation valves** • Operate isolation valves and pressure control valves.
Stage 12	**Temperature switches** • Locate temperature switch • Check temperature switch (where possible) for signs of damage, condensation, wear • Record findings and make notes • Take all into account to determine the temperature switch condition.
Stage 13	**Air aftercoolers** • Initial visual inspection for signs of damage • Drain cocks should be checked for operation and to ensure they are not blocked • In the case of water-cooled units, check the water-cooling apparatus.
Stage 14	**Air dryer refrigerant, but not the refrigeration circuit.** • The general condition should be inspected and reported • Where a pressure vessel is fitted as part of the dryer, it should be examined as a storage vessel • Drain cocks should be checked for operation and to ensure they are not blocked • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 15	**Air dryer desiccant** • The general condition should be inspected and reported • Where a pressure vessel is fitted as part of the dryer, it should be examined as a storage vessel • Drain cocks should be checked for operation and to ensure they are not blocked • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 16	**Piping** • Walk the system and look and listen for signs of leaks • This is best done when the site is quiet. Where pipes run at low level, or in areas of high traffic, check for external damage • Observe particularly that the pipe supports are sound • If possible, look for vibration in the pipework when the system cycles in pressure, this may require further pipe fixings to be used.
Stage 17	**Condensate management system** • Corrosion should not be apparent • Failure is usually due to mechanical damage or work hardening • Deep scratches are given special consideration as they may provide an initiation point for a crack • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 18	**Filters**

	• Corrosion should not be apparent • Failure is usually due to mechanical damage or work hardening • Deep scratches are given special consideration as they may provide an initiation point for a crack • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 19	**Filter drains** • Corrosion should not be apparent • Failure is usually due to mechanical damage or work hardening • Deep scratches are given special consideration as they may provide an initiation point for a crack • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 20	**Condensate traps.** • Corrosion should not be apparent • Failure is usually due to mechanical damage or work hardening • Deep scratches are given special consideration as they may provide an initiation point for a crack. • The body should be examined for scratches, dents and corrosion • Threads should be examined for wear and signs of elongation.
Stage 21	**Pressure regulators** • Check that the component is functioning correctly, and that no leaks are apparent • The system should be designed such that there is a gauge indicating outlet pressure • The regulator should be adjusted through its range.
Stage 22	**Completion** • Make sure all LOTO devices and signs have been removed from the compressed air system and all valves have been returned to the normal operating position. • Inform the user, site contact or Authorised Person (mechanical) that the system can be used again (if safe to do so) reporting any issues encountered during the inspection visit and the urgency of their repair if needed and discuss any questions the user or site contact may have.
Stage 23	**Documentation** • Before leaving the site make sure all documentation and work sheets have been completed satisfactorily, passes and keys have been returned to the issuer.

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RISK ASSESSMENT

Prepared by: A Kent, Managing Director, Mandate Systems **Assessor qualifications: MBA, Tech IOSH, AIIRSM**	**Work area:** As agreed with Client and / or defined by Written Scheme of Examination
Brief description of task being assessed: Mandate Systems are instructed to prepare or review a Written Scheme of Examination, and examinations in accordance with the Written Scheme on the pressure system and associated equipment as described in this document. **Operation:** Examination of pressure vessels, systems and associated safety accessories by Mandate Systems' Examiners	

Hazard?	Persons affected? Damage Anticipated?	Risk Rating			Controls	New Risk Rating			Actioned/Monitored by whom?
		L	C	R		L	C	R	
Stored energy as compressed fluid Cold burns from release of compressed fluid Hot burns or scalds from release of compressed fluid/steam Ingress of compressed fluid into body and blood stream. Ingress of compressed fluid into eyes while draining down Dust and debris being blown into the body/eyes while draining down the compressed fluid.	Mandate Systems' Engineer Surveyor, site staff working in vicinity, other sub-contractors / visitors to site and this area of work	4	5	20	• Confirm what the system pressure is prior to starting work • Confirm isolation valves can isolate and hold the system pressure before working on the equipment • Confirm there is no back pressure from the process when the system is drained down. Check for any isolated legs • Carry out isolation procedures before starting work. Others may also introduce their own locks if deemed necessary. Any lock off procedures **MUST BE** to the Site Sponsor requirements • Use a silencer to dissipate the compressed fluid if necessary, to reduce noise or dust and inform others who may be in the area so they can use ear defenders or leave the area • Use all available means to ensure pressure is dissipated before breaking into the system	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

					• Do not start working on the system until it is fully drained and depressurised, and the components are near ambient temperature • After the work is complete, reintroduce the pressure slowly in small increments, checking for leaks at each stage from the disturbed components and valves on the system • Once the system is back to full working pressure ensure all isolation valves are returned to their original position • Standard PPE to be used at all times to include suitable ear protection.				
Lone working	Mandate Systems' Engineer Surveyor	2	4	8	• Before starting, the surveyor must report to security to sign in and receive visitor pass and any other relevant documentation for the task • Onsite inductions and work permits must be completed before any works can take place if required by site • If possible, the engineer must carry his mobile phone to be able to contact the site contact or Mandate Systems office if any incidents may occur • Mandate Systems maintain routine policy / actions for lone working staff • On completion the engineer must report to the person in charge to complete any paperwork and sign out any registers.	1	4	4	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Onsite processes	Mandate Systems' Engineer Surveyor	3	5	15	• Use the correct access way to get to work areas. Follow marked out walkways within the car parks and area of work • Make sure areas of work are clean and safe before, during and on completion of work	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

					• Be aware of the other on-site processes in your area of work, ask the site contact if in doubt of additional risks • Wear the correct PPE for your task and the area of the site.				
Electricity up to 415vac	Mandate Systems' Engineer Surveyor	5	5	25	• No electrical maintenance or repair work to be undertaken of any kind. The isolation is for mechanical purposes only • The system must be isolated electrically before removing the compressor or dryer cabinet panels • Do not open any electrical cabinets unless necessary as part of the written scheme of examination • After the work is complete, remove any isolation devices and reinstate electrical supply • The correct PPE to be worn at all times to conform to the site and tasks requirements.	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Slip, trips and falls	Mandate Systems' Engineer Surveyor	4	3	12	• Use the designated access ways to safely get to the work area • If necessary, barrier the area of work • Make sure the area of work is clean and clear of any trip hazards during and on completion of the task • Dispose of all waste with the least impact to the environment • If the waste is liquid form make sure this is contained and stored and disposed of correctly • The correct PPE to be worn at all times to conform to the site and tasks requirements.	1	3	3	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Noise	Mandate Systems' Engineer Surveyor, site staff working in vicinity, other sub-contractors /	4	4	16	• Wear the appropriate hearing protection when working on the machines	1	4	4	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

	visitors to site and this area of work				• Cordon off the area to reduce the noise risk to others in the plant room area.				
Hot components	Mandate Systems' Engineer Surveyor	4	3	12	• Allow the system to cool down to a safe working temperature before starting work • The correct PPE to be worn at all times to conform to the site and tasks requirements • Use of a remote sensor if required.	1	3	3	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Manual handling	Mandate Systems' Engineer Surveyor	2	3	6	• Carry out manual handling assessment before moving any possible heavy or large items • Avoid lifting from floor level or above shoulder height • Reduce the amount of twisting, stooping and reaching • Plan route before moving object.	1	3	3	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Fire	Mandate Systems' Engineer Surveyor, site staff working in vicinity, other sub-contractors / visitors to site and this area of work	1	5	5	• If not advised during the induction, please make yourself aware of the evacuation procedure if there was to be a fire or fire drill • If the fire alarm sounds please leave the building by the nearest available fire exit as indicated or shown by your host. Do not re-enter the building until you have been given the go ahead by the site contact • The process of carrying out the WSE does not require heat of a naked flame or HOT work permit, so is low risk with regards to causing / starting a fire • Do not obstruct a fire exit or passageway with your work • Do not use a fire exit as a "normal doorway" unless instructed by the site host	1	3	3	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

					• Remove all waste from the site to reduce the amount of combustible around the system.				
Rotating parts / entanglement	Mandate Systems' Engineer Surveyor	3	5	15	• Carry out LOTO so the plant cannot be started inadvertently • Never run any plant with the guards removed or safety switches overridden • Do not wear loose clothing which could get caught in the rotating equipment.	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Asbestos	Mandate Systems' Engineer Surveyor	1	5	5	• Before starting work, if necessary, ask the site contact to see the asbestos register for the area of work • If there is a risk of asbestos contamination, stop work immediately and report to the site hosting your concerns • Complete asbestos awareness training courses.	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Working at height	Mandate Systems' Engineer Surveyor	2	5	10	• When working at heights ensure training courses have been completed and all necessary safety precautions are taken • Limit time at height to reduce likelihood of an incident. Most works should be able to be carried out from ground level • Do not work at heights without an additional person present • Use of harness, when supplied by Client • Complete working at height awareness course.	1	5	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Using hand tools and test equipment	Mandate Systems' Engineer Surveyor	3	4	12	• Make sure the hand tools and test equipment are suitable for the task to be carried out and in good working order • Make sure where applicable the hand tools and equipment have all the correct and in date calibration certificates.	1	4	5	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

					• The operator of the tools and equipment must be fully trained and competent in their use where applicable • Heat gun only used in the appropriate environment and with approval from the site.				
Vibration	Mandate Systems' Engineer Surveyor	2	1	10	• Minimal vibration from hand tools. Potential to have machine vibrations for short bursts when in the vicinity of the machine • Reduce time near working machinery.	1	1	1	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director
Products used during the visit	Mandate Systems' Engineer Surveyor, site staff working in vicinity, other sub-contractors / visitors to site and this area of work	2	3	6	• There will be minimal contact with any dangerous products when carrying out this task (PTFE Tape, U/S gel) • If there is a concern when carrying out the task refer to the MSDS and COSHH assessment • The correct PPE must be used when handling the parts removed and parts to be fitted to reduce the risk of exposure, e.g. suitable gloves and eye protection • On completion of the work all waste products must be disposed of with minimum impact on the environment. They will be disposed of in the correct waste streams at our main works.	1	3	3	Mandate Systems' Engineer Surveyor Amy Kent, Mandate Systems, Managing Director

Author:

A Kent
MBA, Tech IOSH, AIIRSM
Mandate Systems Managing Director

Signature:

Amy Kent

Amy Kent
MBA, Tech IOSH, AIIRSM
Managing Director

SUMMARY

Mandate's policy of training / experienced and qualified staff ensures that the above safety and control measures minimise the exposure to risk to our employees, clients and members of the public and are reasonable in the circumstances of the case.

Mandate employees will also comply with the customer site risk assessment and we request that any special considerations are provided to us at the time of booking. It is expected that a site specific and local work induction will be delivered to the examiner prior to commencing work, such that the examiner is aware of emergency procedures, welfare facilities and the contact details for the site sponsor.

RISK ASSESSMENT

MEDIUM RISK

RECOMMENDATIONS AND NOTES

All work to be carried out in accordance with the appropriate Written Scheme of Examination and to Mandate Systems & Clients health and safety policy. Any deviation must be requested from the Engineering Manager and/or Managing Director prior to continuing.