

Method Statement

Planned Low Risk Activity

Provide both theoretical and practical compressed gases safety training

TASK HAZARD	METHOD OF OPERATION
SETTING UP OF PRESENTATION EQUIPMENT	Trainer will set up his own equipment in the training room in accordance with company procedures and regulations
CYLINDER HANDLING	Trainer will ensure that all precautions are taken in accordance with the Manual Handling Risk Assessment document

Site Arrival Procedure

The following site arrival procedure applies to all Proactive Gas Safety trainers delivering workshops and training modules at Client premises.

Reception/ security

PGS administration will provide the trainer with course details and dates including site directions and client company contact information. This will be presented to site security or reception if required.

- The trainer will comply with site parking arrangements.
- Trainers will carry proof of identity.
- The trainer will request the presence of the site contact.
- The trainer will sign any visitors' books on request and will comply with client's security and identity systems.

Note: some companies may have lengthy induction procedures.

PGS administration should inform the trainer if this is the case and this should be allowed for before the course start time.

Site contact

The trainer should establish the following with the site contact:

- Special site safety requirements including evacuation alarms, locations and procedures.
- Confirm the training to be undertaken
- The number of delegates
- Delegates with special needs such as reading, hearing or other impediments.
- The access to first aid treatment
- Refreshment facilities and timings
- Fire alarm tests
- Confirm the location and suitability of outdoor training activities

Training room

The trainer shall agree with the site contact the layout of the training room with regards to suitable tables and seating.

Specific attention should be given to:

- Briefing delegates on site evacuation and alarm procedures
- Fire alarm tests
- The position of those with special needs
- Heating
- Lighting
- Ventilation
- Toilet facilities
- Access to refreshments

Training equipment

- Electrical equipment used by the trainer must be tested and marked as such by an approved tester Proactive Gas Safety Administration shall hold any certification provided.
- The trainer shall visually check each item of electrical equipment on assembly.
- Trailing electrical cables shall be stored safely or taped to the floor to prevent tripping hazard.
- Equipment not in use and spare baggage shall be stored safely so as to prevent tripping hazards.
- The trainer will be equipped with standard PPE for use when presenting practical modules

Departure procedure

- All equipment shall be safely dismantled and stored.
- The training room shall be left in a clean and tidy condition.
- The trainer will pass relevant information to the site contact with regards to delegate feedback and or any issues arising.
- The trainer will follow site departure procedures ensuring that name tags or badges are returned to the appropriate person.

Generic Manual handling risk assessment



The following risk assessment is to be used by tutors of Proactive Gas Safety as the principal guidelines for manual handling operations on client premises.

The risk assessment follows the principles outlined below:

- Guidance Note 3 (GN3) 'Application of the Manual Handling Operations Regulations to Gas Cylinders' issued by the BCGA.
- The Manual Handling Operations Regulations 1992
- Health and Safety at Work Act 1974

This risk assessment uses the 4 key factors outlined in GN3 above, namely:

- The task
- The load
- The working environment
- Individual capability

Tutors will not be allowed on client premises until they can demonstrate a full working knowledge of the following manual handling risk assessment and can implement its principles on each occasion at client's sites.

The following two principles must be adhered to at all times:

- Tutor and delegates must never attempt to catch a falling cylinder
- Tutor and/or delegates must never turn their backs on freestanding unsecured cylinders

The task

Tutors are frequently required to carry out the following task to demonstrate the safe manual handling of gas cylinders.

Description

The tutor is required to demonstrate the movement of a large (up to 80 kilograms) gas cylinder from the secured area of the store into a cylinder trolley.

- This activity requires removal of the securing chain and the milk churning of the cylinder a short distance into the cylinder trolley where it is secured.
- The trolley must first be inspected and be suitable for the purpose.
- Delegates are permitted to undertake this activity
 - if the requirements of the rest of this risk assessment are complied with
 - the individual meets the requirements of the 'Individual Capability' factors section and
 - wishes to participate
- Under no circumstances must be any delegate be compelled to undertake any activity.
- Delegates not participating in the activity must be at least 2½ cylinder lengths distant from the tutor and/or the participating delegate.



Task assessment	Required response
1. Can the load be handled close to the body?	Yes
2. Can the operative avoid stooping?	Yes
3. Is any lifting activity required?	No
4. Is pushing or pulling of the load required?	Yes
5. Is the load required to be moved more than 10 metres?	No
6. Is carrying of the load limited to one level?	Yes
7. In changing direction, does the operative turn with the load rather than twisting the body?	Yes
8. Is this activity limited to short duration?	Yes
9. Does the task allow sufficient recovery periods?	Yes
10. Is personal protective equipment required for this task?	Yes
11. Will delegates be briefed as to the task, and instructed in its performance?	Yes

The Load

Description

Gas cylinders have variable aspect ratios and as a consequence can be inherently unstable.

- Weight: The weight of cylinders ranges up to around 80 kilograms
- Shape : Aspect ratios (height of that diameter) range up to around 7
- Result: Cylinders may have a tendency to fall over if not secured

Low-pressure cylinders used for liquid products have a squat appearance and a low aspect ratio. This makes them typically more stable; however, the momentum of moving liquid content may cause initial instability. The mass of liquid contents is often much greater than the mass of the cylinder itself.

Load assessment

12. What is the maximum gross weight of load to be moved?	80 kilograms
13. Is the load likely to shift its centre of gravity?	Only in the case of liquid cylinders
14. Is the load likely to resist movement?	No
15. Is the load easy to grasp?	Yes
16. Is the load free from sharp edges?	Damaged valves may exhibit sharp edges
17. Is the load free from other potentially damaging factors?	Yes
18. Is the item free from vibration?	Yes
19. Is the load unstable?	Yes

The working environment

Description

This will be variable and depend upon the clients' premises. The tutor may find they are performing cylinder manual handling tasks indoors or outdoors. Both situations require a dynamic manual handling risk assessment to be carried out before the task is performed.

- It is essential that the area selected for the manual handling activity is clear of all obstructions such as:
 - Personnel
 - Plant
 - Equipment
 - Pipelines
 - Products
 - Standing water, ice, oil and grease
- It is also essential that the floor surface is level, dry and free from debris.
- The floor surface should be sufficiently robust so as to take the cylinder weight without distorting.
- In an emergency it must be possible for the cylinder to be allowed to fall over without coming into contact with any personnel, plant or equipment.

Working environment assessment

This will vary according to the clients' premises but the tutor will undertake a dynamic risk assessment, taking into consideration the points in the table below.

<p>20. Can the task be performed without hindrance from:</p> <ul style="list-style-type: none"> • Restricted height • Obstruction of the operator from side, front or rear 	<p>Area must be clear from obstructions</p>
<p>21. The operating area must be of sufficient size to allow adequate room to carry out the manual handling task safely.</p>	<p>Tutor dynamic risk assessment</p>
<p>22. The area must be free from obstruction, spillages and matter which may expose the tutor or delegates to risk.</p>	<p>Tutor dynamic risk assessment</p>
<p>23. The area must be free from unstable or uneven floors and surfaces.</p>	<p>Tutor dynamic risk assessment</p>
<p>24. There should be sufficient and adequate lighting levels to perform the task.</p>	<p>Tutor dynamic risk assessment</p>
<p>25. Noise levels should be such that concentration is unlikely to be affected.</p>	<p>Tutor dynamic risk assessment</p>
<p>26. The operation should be undertaken without the influence of extremes of temperature, humidity or air movement, whether inside or out.</p>	<p>Tutor dynamic risk assessment</p>

Individual capability

Description

The following applies to the tutor and delegates undertaking manual handling tasks:

The nature of manual handling training means delegates of varying experience and ability may be exposed to the manual handling task. The tutor needs to bear this in mind during practical demonstrations of the techniques being used.

- Delegates and tutor should be reminded to assess their own capability with regard to body size, medical fitness and experience before attempting any manual handling task with cylinders.
- The tutor should point out that pregnant females are advised not to undertake the practical demonstration.
- Under no circumstances must any delegate be compelled to undertake any manual handling activity.

Individual capability assessment

27. Does the delegate undertaking the task give consent, having due regard to their own age, size and medical fitness?	Tutor dynamic risk assessment
28. Is personal protective equipment provided?	Mandatory
29. Have delegates been briefed and trained in the task to be performed?	Mandatory
30. Is the tutor aware of the experience of the delegate undertaking the task?	Tutor/delegate assessment

Conclusions and recommendations

Tutors must undertake a dynamic risk assessment in accordance with the guidance contained within this report. This being the case, the evaluation of risk of injury from the activity being undertaken is considered **low**.

All tutors shall be trained in accordance with the findings of this risk assessment.

All tutors shall demonstrate their knowledge of this document and be able to implement its findings by way of dynamic risk assessment at client sites.

Personal protective equipment shall consist of suitable gloves, safety footwear and eye protection as required. Local PPE may also be required as dictated by local conditions or client work practices.

This risk assessment was prepared against the background of manual handling injuries accounting for a third of all reportable 'over three-day' injuries. On average each results in a loss of 20 working days.

General risk assessment for regulator fitting at Client premises



The risks posed by fitting regulators at clients' premises are considered low provided the precautions taken in the 'Before use check procedures' are employed and correct personal protective equipment is worn.

The principal risks to Tutor and Delegates are:

1. The falling over of an unsecured cylinder during the demonstration of regulator fitting.
 - a. Checking the cylinder is secured easily averts this risk.

2. The ignition of a hydrocarbon in the presence of oxygen during the pressurising of a regulator.
 - a. Checking the bullnose and cylinder valve before use averts this risk.
 - b. Where possible tutors are advised to employ the use of Inert gases for demonstration purposes.
 - c. However: the use of oxygen for demonstration purposes is often preferable where delegates use this gas.
 - It is important however they are made aware of the risks from hydrocarbon ignitions in the presence of oxygen.

Regulator fitting hazard checklist at Client Premises

Category	Identified Hazard (type of harm)	Measures	
Mechanical	Trapping	• No hazard	
	Impact	• dropped regulator	○ Safety footwear
	Contact	• No hazard	
	Entanglement	• No hazard	
	Ejection	• No hazard	
Pressure	<ul style="list-style-type: none"> • Release of energy • Compressed air • Compressed gases 	<ul style="list-style-type: none"> ○ Cylinder security ○ Before use checks procedure ○ Correct equipment 	
Stored energy	• Springs in regulators	<ul style="list-style-type: none"> ○ Before use checks ○ Regulator not to be dismantled 	
Thermal	• Oxy hydrocarbon ignition	<ul style="list-style-type: none"> ○ Before use checks procedure ○ Absence of oil and grease 	
Electrical	• No hazard present		
Radiation	• No hazard present		
Noise	<ul style="list-style-type: none"> • Gas release • Sniffling 	<ul style="list-style-type: none"> ○ Correct shut down procedure ○ Sniffling not to be undertaken 	
Stability	<ul style="list-style-type: none"> • Cylinder instability • Falling cylinder 	<ul style="list-style-type: none"> ○ Before use check procedure ○ Cylinder secured 	
Vibration	• No hazard present		
Overload mechanical failure	<ul style="list-style-type: none"> • Release of pressure • caused by regulator or hose failures 	<ul style="list-style-type: none"> ○ Before use checks procedure ○ Use of correct equipment 	
Combusting /oxidisation	<ul style="list-style-type: none"> • Oxidising and flammable gases release or explosion • Burns 	<ul style="list-style-type: none"> ○ Before use checks procedure ○ Absence of oil and grease from equipment by inspection ○ Personal protective equipment 	
Particulates or fumes	• No hazard present		
Vapours	• No hazard present		
Gases	<ul style="list-style-type: none"> • Pressure hazard • Acute and chronic effects on health from toxic gases 	○ Tutor to use only Inert gases and oxygen for regulator fitting activities	

Category	Identified Hazard (type of harm)	Measures
Contact	<ul style="list-style-type: none"> • No hazard present 	
Work at height	<ul style="list-style-type: none"> • No hazard present 	
Obstruction	<ul style="list-style-type: none"> • Tutor assessment 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Work near liquids, dust or grain	<ul style="list-style-type: none"> • Activity banned 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Lighting	<ul style="list-style-type: none"> • Insufficient for before use checks and equipment inspection 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Confined spaces	<ul style="list-style-type: none"> • Asphyxiation, explosion, poisoning • Activity banned 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Ventilation Asphyxiation	<ul style="list-style-type: none"> • Accumulation of gas 	<ul style="list-style-type: none"> ○ Tutor to ensure activity in a well-ventilated area
Manual handling	<ul style="list-style-type: none"> • Limited Hazard • Risk assessment completed 	<ul style="list-style-type: none"> ○ Tutor to be familiar with PGS Manual handling risk assessment
Work in public areas	<ul style="list-style-type: none"> • Pedestrians • Delegates 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Attack by animals	<ul style="list-style-type: none"> • No hazard present 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Attack by people	<ul style="list-style-type: none"> • No hazard present 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present
Natural hazards	<ul style="list-style-type: none"> • No hazard present 	<ul style="list-style-type: none"> ○ Tutor to ensure activity not undertaken where hazard present

General risk assessment form Regulator fitting at Client premises

No	Activity	Hazard	Personnel	Severity 1-10	Likelihood 1-10	Score Product	Measures
1	Visual check cylinder	Unsecured cylinder falling	Delegate or Tutor	7	3	21	<ul style="list-style-type: none"> • Tutor to check cylinder is secured before regulator fitting
2	Ensure correct gas	Fitting regulator to wrong gas type	Delegate or Tutor	1	4	4	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure
3	Visual check cylinder valve	Oil grease and PTFE tape contamination	Delegate or Tutor	1	1	2	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure
4	Hand tighten regulator to cylinder valve	Sharp edges from damaged valve	Delegate or Tutor	1	2	2	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure • Use of gloves
5	Turn on the cylinder and pressurise the regulator	Ignition due to contamination from oil, grease and PTFE tape in the presence of oxygen	Delegate or Tutor	8	2	16	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure • Visual check regulator bullnose fitting
		Gas leaks from damaged or loose fittings and connections	Delegate or Tutor	1	9	9	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure • Visual check regulator bullnose fitting
6	Turn off the regulator and vent gases to atmosphere	Emission of sufficient gas under pressure causing Asphyxiation or Oxidation Hazard	Delegate or Tutor	1	1	2	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure • Visual check regulator bullnose fitting • Use of personal protective equipment
7	Removal of regulator	Sharp edges from damaged valve	Delegate or Tutor	1	2	2	<ul style="list-style-type: none"> • Regulator inspection • Before use check procedure • Use of gloves

Generic Risk Assessment Form
Manifold Changeover Practical

Activity	Manifold cylinder changing
Name of Assessor	D A Openshaw (BA hons)



- Tutor lead training in the correct methods employed in the removal and replacement of full for empty cylinders on manual and semi-automatic gas manifold systems
- The methods employed are to be in accordance with local work instructions and BCGA CP4
- Where possible inert gas systems should be chosen in preference to oxygen or fuel gas systems
- The training is only to be carried out on manifolds selected by the client company and in agreement with them
- The tutor shall confirm that the client has informed and agreed with any user department that training is to take place and that interruption of gas supply to that department may occur
- The client should not chose manifolds whose continued use is essential to production or safety processes
- Simple cylinder manual handling will be required and delegates must be in possession of the appropriate PPE. (See Cylinder Manual Handling Risk Assessment)
- Manifold systems vary widely in configuration; the actions to be performed will often consist of:
 1. Closing one or more cylinders and any other appropriate isolation valves.
 2. Venting the pressure either through a purpose designed vent valve or carefully loosening the hose to cylinder connecting nut.
 3. The regulator/s are normally not required to be adjusted, however some installers require the regulator to be closed during cylinder change over. The tutor should check user work instructions.
 4. Replacing the empty cylinder with a full one and re-pressurising the system.
 5. Either leak checking with an appropriate leak detection fluid or explaining the 'pressure drop leak test' where this is more appropriate. (Normally where sensitive analysis equipment may detect the ingress of leak detector fluids for example)
- The system will be left in the configuration agreed with the client on completion of training

Hazard Category	Harm	Possible in this activity
Mechanical	Trapping (crushing, sheering injuries)	Yes
	Impact	Yes
	Contact (Cutting, Friction or abrasion)	No
	Entanglement (rotating cylinder guards)	Yes
	Ejection (of work piece or part of a tool)	Yes
Electrical	Shock	No
	Ignition sources	No
Pressure	Release of energy	Yes
Oxidation	Oxygen ignition	Yes
Flammable gas ignition	Fire explosion	Yes
Toxic gas release	Acute and chronic effects on health	Yes
Asphyxiation	Acute and chronic effects on health	Yes
Stored energy	Falling materials	No
Thermal	Burns/ fires / scalds/ frostbite	No
Stability	Crushing	Yes
Radiation	Ionising	No
	Non ionising	No
Noise	Hearing loss/ tinnitus	No
Vibration	Vibration white finger or a whole body effects	No
Chemical	Burns / toxic and corrosive effects	No
Gases	Acute and chronic effects on health	Yes
Particles	Lung effects	No
Fumes	acute and chronic effects on health	No
Vapours	acute and chronic effects on health	No
Dust	acute and chronic effects on health	No
Mists	acute and chronic effects on health	No
Pedestrian	Slips trips falls	Yes
Walking at height	Falls	No
Stacking storing	Materials falling from height	No
Work over liquids	Falling into substances	No
Emergencies	Being trapped/obstructed exits	No
Light	Eyestrain/ sufficient for a task	No
Temperature	Heat stress/ cold	Yes
Confined spaces	Asphyxiation	No
Ventilation	Gases /fumes	Yes
Manual handling	Moving/ lifting /carrying / churning	Yes
Attacked by animals	Bites /stings/ crushing	No
Attacked by people	Criminals/ mentally ill/ drug-abuser/drunk	No
Work in public areas	Injury to public	Yes

Hazard checklist

Likelihood		Severity	
0	Zero to very low	0	No injury or illness
1	Very unlikely	1	First aid injury or illness
2	Unlikely	2	Minor injury or illness
3	Likely	3	'Three day' injury or illness
4	Very likely	4	Major injury or illness
5	Almost certain	5	Fatality, disabling injury

Score	Action to be taken
0-5	No further action needed
6-10	Appropriate additional control measures should be implemented
12-25	Work should not be started or should cease until appropriate additional control measures are implemented

Hazards Involved:

Substance/ item of equipment/procedure or physical location	Associated hazards	Cause and Effects		A. Severity	B Likelihood	A x B Risk
		Existing Control Measures	Additional control measures			
Mechanical	Trapping Impact	Delegate moving a cylinder into position against a manifold stanchion or retaining wall trapping hand or finger. Gloves to be worn		1	3	3
	Entanglement	Delegate moving a cylinder with guard catches glove during churning action. Tutor supervision and training		1	2	2
	Ejection	Over pressure causes ejection of a component System design, specification and maintenance		4	0	0
Pressure	Release of energy	Delegate opens cylinder incorrectly or removes a hose under pressure. Tutor supervision and training		4	1	4
		Failure of installed system during training System design, specification and maintenance		5	0	0

Oxygen ignition	Rapid metal burning and small explosion	Contamination from hydrocarbon oils or grease with rapid opening of a cylinder valve. Tutor supervision and training. System design, specification and maintenance	5	1	5
Flammable gas ignition	Fire or explosion	Gas leak is ignited due to static or other ignition source. Flammable gas manifolds are best avoided for general training purposes	4	1	4
Toxic gas release	Acute chronic health effects	Toxic gas manifold must not be used for general training purposes	4	1	4
Asphyxiation	Acute chronic health effects	Large release of gas in an uncontrolled manner caused by delegate or tutor malpractice Manifolds to be in well ventilated areas preferably outside. Inside areas must have sufficient forced or natural ventilation to conduct the training	5	0	0
Substance/ item of equipment/procedure or physical location	Associated hazards	<p style="text-align: center;">Cause and Effects</p> Existing Control Measures Additional control measures	A. Severity	B Likeli- hood	A x B Risk
Stability	Crushing blow from falling cylinder	Delegates may be required to move unstable cylinders weighing up to 80Kg Tutor supervision and training Delegates may decline the activity for any reason defined under 'Individual capability' within the Manual handling regulations Delegates not involved in the activity must be a minimum of two cylinder lengths from the delegate with the cylinder Delegates must have undertaken cylinder-handling training prior to the activity	4	2	8

Gases	Acute chronic health effects	Large release of gas in an uncontrolled manner caused by delegate or tutor malpractice Manifolds to be in well ventilated areas preferably outside Inside areas must have sufficient forced or natural ventilation to conduct the training	5	0	0
Pedestrian	Slips Trips Falls	Delegates should undertake the activity in stores with properly maintained floors with no debris, wetness, ice or other slippery surface	4	1	4
Temperature	Heat exhaustion Heat stress Cold Hyperthermia	Training will mainly be out doors with delegates exposed to the prevailing elements and weather conditions for a period rarely exceeding one hour. The weather needs to be fair to good for the training to be effective. Tutor and delegate decision	1	0	0
Ventilation	Gases	Training is mainly outdoors but if indoors tutors must satisfy themselves ventilation is good Manifolds to be in well ventilated areas preferably outside Inside areas must have sufficient forced or natural ventilation to conduct the training	5	1	5
Work in public areas	Injury non delegates	Access to the area may not be exclusive to delegates Tutor to agree with client segregated area where possible If this is not possible tutor to monitor access and stop the activity if the area becomes insecure	0	2	2
Manual handling		see separate risk assessment			

Persons Potentially at risk:

The tutor and delegates attending the training session and members of the public (defined as any non delegate) inadvertently or otherwise accessing the training area.

Additional Control measures which will need to be applied to reduce the risk to an acceptable level

Control measure	Date of Implementation	Implemented by:	Level of Risk with controls
One item was scored as requiring additional measures namely Stability. This relates to the nature of gas cylinders in the hands of potentially novice users.	20th September 2005	D A Openshaw	4

Action in event of an accident or emergency

- Evacuation of immediate area in accordance with local procedures
- Account for all delegates and personnel
- Raise the alarm in accordance with local procedures calling for the appropriate emergency services
- Isolate the system if appropriate and safe to do so under the control of the and in accordance with client company procedures
- Brief the emergency services where and when appropriate

Arrangements for Monitoring Effectiveness of Control:

- Tutors must continually assess the effectiveness the controls and feed back any delegate or client response or comments to the controls immediately to the Technical and Safety Director at PGS Training.
- Comments made to other PGS Training staff must also be directed in writing to the Technical and Safety Director

Receipt of the Risk Assessment:

This assessment has been issued to and read by:

Name of Recipient:	
Date of Receipt	
Signature	

Review of the Risk Assessment:

Have the control measures been effective in controlling the risk?	Yes	✓	No	
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Have there been any changes in the procedure or in information available, which affect the estimated level of risk from the listed substances?	Yes		No	✓
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What changes to the control measures are required?

None required at this time.

Date of review:	06 January 2020
Date of next review:	06 January 2021
Name of reviewer:	D A Openshaw – Technical & Safety Director
Signature:	