LANCER | BEER SYSTEMS

Ice bank Beer System

Operation Manual

GLOBAL & GREEN
THINK THE EARTH

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1. Overview of your Ice Bank Beer System

Ice bank Beer Systems are designed as a high performance / low energy solution to draught beer.

Your installation has been based on the information provided on the number of dispense points, site conditions, and keg turnover. This ensures a balanced reticulation system capable of handling your maximum expected volume of trade.

Along with this manual we have supplied a Cellar Log Book. A maintenance program should be in place and a log book kept covering cleaning schedule & all other activities relevant to draught beer. Doing so will result in excellent beer presentation, with absolutely minimum waste. A hygienic system is a MUST!!

Included at the back of this manual are your:

- Installation Checklist
- Commissioning Sheet.
- Certificate of Compliance.
- Outlet Risk Assessment.

1.1 Keg Tapping

- The keg is tapped by connecting the coupler to the keg. The coupler is then engaged. Beer is distributed to the correct tap.
- CO2 Beverage Gas is supplied to each keg, as the energy to move the beer from the keg to the glass while maintaining the correct CO2 percentage in the beer.

1.2 Founts

Beer Founts are available in a variety of shapes and sizes. The heat load on each fount varies according to its size. The riser lines are banded to and insulated with the recirculation lines to the fount to ensure consistently cold dispense temperature.

1.3 Ice bank Chiller

The heart of the system is the Ice bank Chiller, located under the bar. It contains stainless steel beer coils submerges in an ice bath to chill the beer. A pump recirculates the iced bath water from the tank up through the font before returning to the tank for re-cooling. Ice banks are sized in Kg's of ice that builds on the refrigeration coil – e.g. 15kg, 25kg, and 35kg.

- As altering ambient conditions and keg temperatures have a dramatic effect on the cooling capabilities of the system, we allow extra tolerance when calculating "Heat Loads". This assists in offering maximum performance through the most extreme conditions.

For any issues not covered in this manual please contact Hoshizaki Lancer on 1300 551 361

2. Basic Cellar Procedures

2.1 Changing a Keg

1. Disengage the handle of the Keg Coupler on empty keg.
2. Disengage the Drop Lead from Keg Coupler.
3. Remove the Coupler from the Keg.
4. Check the integrity of the keg seal and spray with sanitizer
5. Place Keg Coupler on the new keg and fit the Drop Lead.
6. Engage the Handle.
7. Check the beer flow through the tap, pouring until it is completely full of beer. ”

2.2 End of Trade Procedures

- Disengage keg couplers handles on kegs.
- Leave drop leads connected to keg coupler.
- Turn off CO2 supply.

2.3 Gas System

- This Gas System meets AS5034 and your Certificate of Compliance is completed on Appendix C in this manual.
- The system is set up for a regulator to supply Beverage Gas CO2 into the keg. The purpose of the CO2 is twofold. The first is to provide the energy to dispense the beer and the second is to provide a blanket of CO2 on top of the beer to ensure balance of correct CO2 % is maintained in the beer. This is crucial.
- For Nitrogenous Beers and Stouts a separate Regulator will supply a Stout mix which is70% N2/ 30% CO2 - blend. Nitrogenous Beers when dispensed through a restrictor plate in the tap will produce the tight thick head associated with Stouts.

2.4 Recommended Maintenance Schedule

Lancer offers a Preventative Maintenance Program for all Quarterly, 6 month & 12 month checks. Please contact the Lancer National Service Centre on 1300 551 361 to obtain a quote. You should check over all the cellar equipment on a weekly basis. Worn O-rings and check valves can be easily replaced and will stop costly leaks or frustration with using equipment.

Spare Parts can be ordered by:

- Phone: 1300 551 361
- Email: Lancerservice@lancerworldwide.com
- Website: www.lancerbeverage.com

Daily

- Check gas system for leaks
- Check beer system for leaks
- Check operation of beer taps
- Inspect and replace as necessary all visible O-rings

Weekly

- Chemically clean beer lines and equipment as required
- Rinse any external residues from taps, couplers and fittings with hot water
- Check temperature of dispensed beer (0.5°C to 3°C is acceptable)
- Check operation of glass cleaning equipment

Quarterly

- Service beer taps, keg couplers and other dispense equipment.
- Chiller and other systems as per manufacturers recommendations
- Check water level in tank

Half yearly

- Have the gas system inspected as per AS5034

Annually

- Have the refrigeration system serviced
- Have the gas system inspected as per AS5034

3. Typical Service Issues

3.1 Beer is Pouring Heady

- Faulty Keg Coupler - If the seal on the shaft of the coupler fails it will allow CO2 past and into the drop lead, filling the line with CO2.
- Beer temperature is too warm - check the Ice bank Bath Temperature. – Refer 6.6 – Ice bank Bath temperature increase.
- Over Carbonated Beer – Check CO2 pressures are as per settings recorded on the Commissioning Sheet. The keg may have also been tapped for too long.

3.2 Beer is not Pouring

- Keg Coupler is not engaged - check the keg coupler in the cool-room to see if the coupler handle is fully engaged. Damaged handle pivots sometimes prevent this...
- Gas System turned OFF - check if the bottle is turned on and ensure there is CO2 in the bottle.
- Beer Frozen in the Stainless Steel Coils – Check the coils are clear of the Ice bank. If it is in the ice, turn off the unit and call your refrigeration mechanic. .

3.3 Beer is Pouring Flat

- **Beer temperature is too cold** - Indicated by having to really work the beer to form a head. If beer temperature in the glass is too cold, the CO2 will want to stay in solution.
- **Beer glasses are too cold** - The beer glasses are being kept in sub zero conditions - Increase temperature of the Glass Chillers.
- **Beer glasses are dirty** - The beer pours into the glass fine but the head does not last very long - check your cleaning procedure of glasses.
- **Faulty Keg** – The seal on the keg has let all CO2 out and the beer in the keg is flat.

3.4 Beer is Pouring Slow

- **Gas System is turned OFF** - check to see if the bottle is turned on.
- **Gas Bottle Empty** - Confirm there is adequate pressure in the bottle.
- **Beer may be starting to freeze** - usually only happens with the Low Alcohol Beers with ice crystals forming. Check the coils are clear of the Ice bank. If it is in the ice, turn off the unit and call your refrigeration mechanic.

3.5 Loss of Condensation on the Founts

- **Ice bank Tank has increased in Temperature** - Check power supply to chiller if OK, check the following :
    1. Check the water level in the Ice bank tank.
    2. Check for Ice In the Ice bank tank.
    3. Pump has been Turned Off - check to see if Agitator/pump is running on the Ice bank Tank. If the pump is not working & pump is turned on - contact Lancer Service on 1300 551 361 immediately.
- **Change of Environment in the Bar area** - Changing weather conditions effect the formation of condensation. Warm breezes in summer and no humidity in winter have a deteriorating effect.
- **Dirty / greasy font** - If dirty hands have been rubbing the font it may affect the formation of condensation. Clean with a dry clean cotton cloth to remove any dirt or grease.

3.6 Ice bank Tank – Temperature Increase

- No power to Tank/Ice bank control.
- Tank has recently been filled with warm water.

3.7 Using Excessive Amounts of Gas

- **Gas leak on system** - Check over gas system as per Weekly Checks/ Gas Leaks
- Higher than usual turnover of kegs - this is to be expected.

4. Cleaning the System

Regular cleaning of the whole beer system is extremely important, if this is not performed bacteria, yeast, mould, etc. will build up and quickly degrade the quality and taste of the beer.

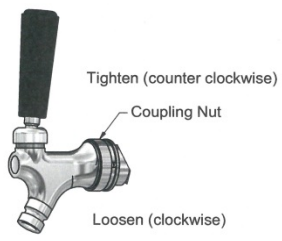
4.1 Daily Cleaning

Good food hygiene practices should be a part of the daily routine – spills wiped up, empty containers disposed of, and equipment kept neat and orderly.

Lift the keg coupler handle to disengage, but do not remove, to prevent over carbonation at the end of the trading day.

Beer Tap

Fig. 1



- With keg coupler disengaged move the beer tap handle towards you to dispense any beer remaining in the circuit.
- Disengage the tap from the fat-lock adaptor. Loosen the coupling nut of the beer tap by turning it clockwise and remove the beer tap.
- Tilt the beer tap lever towards you and run tap water through the beer tap.
- Ensure the coupling seal is in place and refit to the beer tap by turning the coupling nut counter clockwise. Engage the tap into the fat -lock adaptor.

Exterior Cleaning

- Wipe the stainless steel lid, drip tray, and the fount with a soft damp cloth containing a neutral dishwashing detergent to wipe off any dirt build-up, and remove any remaining detergent with a clean soft cloth.

- Clean the exterior of the chiller whenever necessary.

At the start of the next trading day, push down on the keg coupler handle to re-tap the keg. Move the beer tap lever towards you and dispense product until you have clean product i.e. no froth.

4.2 Weekly Cleaning

As per cleaning instructions, ensure weekly sanitisation of the whole beer system is carried out, including keg coupler, beer line, chiller coils and tap.

The following instructions are for general applications, breweries may offer alternative cleaners and procedures.

Lift the keg coupler handle to disengage.

Beer lines Cleaning

	**Warning**	Only trained personnel should undertake the cleaning process for this equipment.
	**Warning**	Most commercial beer line chemicals are classified as hazardous if ingested or when in contact with skin or the eyes. **Take proper precautions when handling and wear protective clothing and goggles.** Read and understand the handling procedures for the chemicals used.

- Thoroughly rinse a washout canister and fill with potable water.
- A 5L washout canister is available from Hoshizaki Lancer. Before opening, vent the canister by pulling the relief valve ring.
- Turn the keg coupler counter clockwise and remove it from the keg.
- Check the tap is closed. Connect the keg coupler to the wash out canister and push down on the keg coupler handle to engage.
- Place a bucket under the tap, pull the tap handle towards you and allow water to run though the beer line until the water runs clear at the tap.
- Disconnect the keg coupler from the washout canister and depressurise the canister.
- Prepare the sanitising solution according to the manufacturer's directions and fill the washout canister with 3 to 4 litres of the sanitiser.
- Connect the keg coupler to the washout canister and push down on the keg coupler handle to engage.
- Place a bucket under the tap, pull the tap handle towards you and allow sanitiser to run though the beer line.
- If using Hoshizaki Beer line cleaner, the pink Hoshizaki chemical will indicate when sanitiser has reached the tap.
- Leave the sanitising solution in the beer line as per the manufacturer's recommendations.
- For Hoshizaki Beer line cleaner, leave for 2hrs, preferably overnight.
- After the recommended time has elapsed, disconnect the keg coupler from the washout canister and depressurise.
- Thoroughly rinse and refill the washout canister with clean water.

- Reconnect the keg coupler and run sufficient water through the beer line to ensure that all the sanitiser has been removed from the lines. Toggle the tap on and off while flushing.
- Disconnect the keg coupler from the washout canister and depressurise the canister.
- Connect the keg coupler to the beer keg and push down on the keg coupler handle to engage.
- Open the tap and draw through beer. Allow the system to settle for 10 minutes then open the tap again and pour off until beer is clear.
- The system is now ready for trading.

Beer Tap

- With keg coupler disengaged move the beer tap handle towards you to dispense any beer remaining in the circuit.
- Disengage the tap from the fat-lock adaptor. Loosen the coupling nut of the beer tap by turning it clockwise and remove the beer tap. (Fig. 1).
- Loosen the cap nut of the beer tap and remove the handle (Fig. 2).
- Remove the valve shaft from the beer tap (Fig. 3).
- Clean the beer tap and valve by using a neutral dishwashing detergent and the accessory cleaning brush.
- Rinse the beer tap thoroughly with clean water.
- Assemble the beer tap properly by positioning the hole in the valve shaft with the handle.
- Refit the beer tap by turning the union nut counter clockwise. Refit to fount.
- At the start of the next trading day, push down on the keg coupler handle to re-tap the keg. Move the beer tap lever towards you and dispense beer until you have clean beer i.e. no froth.

Fig. 1

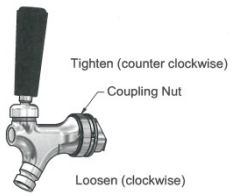


Fig. 2

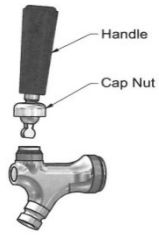
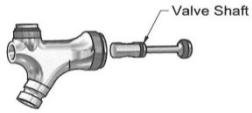


Fig. 3



Keg Coupler

Clean the keg coupler in accordance with the beer company's instruction manual.

4.3 Monthly Cleaning and Checks

Cleaning the condenser

Disconnect the machine's electrical plug from the mains outlet before cleaning the condenser. Use a brush to remove any dust or foreign matter, which may prevent air from circulating around the condenser fins.

Caution: always wear protective gloves for this operation.

Overflow

Check that the hole and the overflow and drip tray outlet pipes are not blocked with dirt or ice.

Check the tank water level, fill if necessary.

Checking efficiency

Check that the condenser motor fan is free from any obstructions and dust. Check that the agitator blade has no scaling due to the limestone in the water. Remove any scaling by

carefully scrubbing or use of a descaler. Check agitator and condenser fan operate without noise or obstructions.

Gas and beer Hoses

Check the gas and beer hoses for damage, deformation, and water leak marks (stains). If any problem is found, contact 1300 551 361 Lancer - National Service Centre.

4.4 Yearly Cleaning

Clean the water bath tank

- Disconnect the machine's electrical plug from the mains outlet.
- Thaw the ice bank formed in the water bath tank. Do not transport the machine with the formed ice bank to avoid breaking the capillary tube on the refrigeration system.
- Never use sharp or cutting objects to remove ice from the evaporator; use only warm water so as not to damage the evaporator or the water bath tank; empty the water with a suction pump or draining pipe.
- Clean the stainless steel coils and the evaporator using a soft brush, rinse the tank and coils with clean water.
- Fill the tank with sufficient clean water to cover the evaporator.
- Check that the overflow pipe and the piping are free from any obstructions.

5. Gas System

5.1 Safety with CO2:

⚠	**IMPORTANT**	**Gas Equipment should be serviced by Authorized Personnel Only**
⚠	**CAUTION**	• **Advise someone of your intention to enter an area where CO2 is used.** • **Remember the symptoms of excessive CO2 intake.** • **CO2 in a confined space can kill.** • **Never degas in a confined area.** • **Practice team lifting when manoeuvring cylinders.** • **When connecting up new cylinders always check that the seal is in place on the ezifit handle** • **Use safety chains on all cylinders.** • **Never tighten or adjust any equipment on the gas board with the gas bottle/ bulk gas turned on.**

⚠	**CAUTION**	**Always employ safe working procedures when handling Gas and Gas Equipment.**

WARNING	**CO2 (Carbon Dioxide) supply. CO2 is a heavier than air, colourless, non-combustible gas with a faintly pungent odour.** **Personnel exposed to high concentrations of CO2 gas will experience tremors, which are followed rapidly by loss of consciousness and suffocation.** **All Non Naturally Ventilated Area's (keg Coolroom) are required to have a CO2 monitor as per AS5034.**

5.2 Leak Detection

This section outlines the procedure you should follow when checking for gas leaks on all gas dispensing systems.

5.2.1 Drop Test

1. Lift all the keg tap handles to the 'off' position.
2. Disconnect the gas valves from all the kegs.
3. Turn the gas cylinder on and record the dispense pressure on the gauge at the position indicated by the needle. This is the pressure in the system.
4. Turn the gas cylinder off and wait for 30 minutes. Check the position of the gauge needle.
5. If the needle has held its position, there is no leak in the isolated gas system (from the cylinder, through the gas regulators to the gas valves).
6. If the needle drops away from the marked point, there is a leak in this part of the system.
7. If no leaks are found in the tested system, this indicates that the gas leak may be outside the tested area. Refer to the next section: "Finding the Leak"

5.2.2 Finding the leak

1. Ensure the gas cylinder has been turned on.
2. Leaks can be easily found using a concentrated soapy solution (10:1 water to detergent). Use a brush or atomiser spray to apply the solution.
3. To check gas valves, immerse them in a jug of water, any bubbles will indicate a leak.
4. To check the keg coupler, fit a washout cup, immerse the engaged coupler in a bucket of water with the product and gas lines connected. Any continuous bubbles will indicate a leak.

NOTE	**Gas boards and gas equipment can be very dangerous when under pressure. When adjusting or tightening any components ensure that the bottles are turned off and all pressure released from the system for safety.** **If this process fails to detect the leak, please contact Lancer Service on 1300 551 361 for assistance.** **For repairs - please contact Lancer Service on 1300 551 361 for assistance.**

6. Gas Types

⚠	**IMPORTANT**	**REMEMBER SAFETY FIRST**

6.1 Carbon Dioxide (CO2)

The purpose of CO2 is to provide a blanket of gas on the surface of the beer in the keg at a slightly higher pressure than the equilibrium pressure. This prevents the CO2 percentage in the beer from changing, which would alter the taste and appearance of the beer from that intended by the brewer.

6.2 Mixed Gases (CO2/N2)

These gases are a mixture of Carbon Dioxide and Nitrogen (N2) in varying proportions. They should be used on high pressure systems to help prevent over carbonation. Stout mix is a 70%N2/30%CO2 mix required to dispense Nitrogenised Beverages.

6.3 Cylinder Pressure

The pressure in a cylinder of C02 is approximately 5-6,000kPa (800psi)

The pressure in a cylinder of mixed gas approximately 12-13,000kPa (1700psi).

⚠	**CAUTION**	**Always employ safe working procedures when handling Gas and Gas Equipment.**

7. AS5034 CO2 Safety Equipment

All cool rooms that have a CO2 system in them require a CO2 monitor and alarm. Our “Site Risk Assessment” (Appendix D) will have highlighted and addressed any issues.

7.1 Carbon Dioxide (CO2)

⚠	**DANGER**	**CO2 in a confined space can be lethal. In high enough concentrations it can paralyse the respiratory centre, which could result in death. Some symptoms of CO2 exposure can be shortness of Breath, rapid heartbeat, nausea, and dizziness.**

7.2 Properties

⚠	**NOTE**	**CO2 is a colourless, odourless and tasteless gas. It is non-combustible and heavier than air. Because it is heavier than air it will be concentrated and therefore most dangerous at ground level.**

8. Certificate of Warranty

It is the policy of Hoshizaki to provide to its current customers, warranty for all equipment supplied and installation work performed within a specified period.

Parts and Equipment

Hoshizaki Lancer provides a warranty period of twelve (12) months from the date of original invoice for all manufactured parts and the associated labour. Repair or replace of defective parts will be at the sole discretion of Hoshizaki Lancer.

Changeover parts will be invoiced to the customer at the customers normal purchase cost and upon return of the warranty item and validation of the claim, the invoice will be credited.

Installations

Hoshizaki Lancer provides a warranty period of twelve (12) months from the date of final invoice for workmanship after the completion of any installation work, provided the parts and labour are completed by Hoshizaki Lancer or its sub-contractor.

Labour

Hoshizaki Lancer will not normally cover any labour costs associated with a warranty claim. Subject to the approval of the Divisional Sales Manager, Hoshizaki Lancer may choose to reimburse the customer for some or all labour costs associated with a warranty claim. Any claim for labour costs must be authorized by Hoshizaki Lancer prior to the work being undertaken

Exclusions

Hoshizaki Lancer will not accept any liability or cost associated with any consequential losses (such as loss of syrup or beer), loss of profit or damage to property as a result of faulty product.

Warranty shall not apply:

a. If in the opinion of Hoshizaki Lancer, the equipment has been used in a situation the equipment has not been designed for;
b. If in the opinion of Hoshizaki Lancer, the equipment has been subject to abuse, negligence or accident;
c. If connected to improper, inadequate or faulty power, water or drainage service or operated using incorrect, insufficient or contaminated lubricants, coolants, refrigerants or additives;
d. Where the product is installed, maintained or operated otherwise than in accordance with the instructions supplied by Hoshizaki Lancer;
e. Where the product has been damaged by foreign objects;
f. Where the product has been serviced, repaired, altered or moved otherwise than by Hoshizaki Lancer or its nominees or using other than Hoshizaki Lancer approved replacement parts.

9. Install Technicians Checklist

BAR AREA	YES
Silicone around all Drip Trays.	
Core Holes filled with foam, trimmed and silicone	
Checked for Beer leaks and Recirculation Leaks prior to insulating	
All Recirculation and Beer Lines insulated	
Flow rate tested to 5 secs per 285ml glass	
All beer taps pouring correctly	
Temperature of 3rd Beer taken and within range of .5 – 3 degrees C	
CELLAR EQUIPMENT	
All cellar equipment greased - leads, keg couplers, adaptors.	
All cellar equipment tightened - leads, keg couplers, adaptors.	
Each Beer Line tested for correct position and leaks	
Water Bath full	
Tank down to set temperature in normal operational time	
WASH OUT SYSTEM	
Check for leaks on Washout system.	
A Line Clean completed prior to pulling up Beer.	
GAS SYSTEM	
Gas System AS5034 Compliant	
Completed Certificate of Compliance.	
Are the regulators set to the correct pressure for style of system	
Correct gas being used for System	
Risk Assessment Completed	
MISCELLANEOUS	
Has the complete JOB AREA been cleared of Rubbish	
Work area wiped down	
Ice bank Tank Cleaned	
Does any other work need to be completed to obtain sign off	
Training given	
Customer asked if anything else you can do?	
Commissioning Sheet filled in	

10. Commissioning Sheet

OUTLET
INSTALLED BY
COMMISSIONED BY

Flow Rate For 285ml Glass Of Beer	
Beer Temperature – 3rd glass	
Gas System Settings	
Regulator 1	
Miscellaneous	
Training & Manual Given	

Installer_____ Signed_____ Date_____

Installation has been completed to my satisfaction and is fully operational

Customer _____ Signed_____ Date_____

11. Compliance Certificate

Installation and Use of Inert Gases for Beverage Dispense (AS5034)

Lancer Technician Name: _____

Date of Compliance: _____

Venue Name: _____

Suburb: _____

Description of work:

_____

_____

_____

_____

Scope of Compliance:

☐ New Beer Gas Distribution System
☐ Addition or alteration to existing system
☐ New Beer Gas Board
☐ Repair to existing system

	Gas Distribution Board	Gas Distribution Tubing									
		Line 1	Line 2	Line 3	Line 4	Line 5	Line 6	Line 7	Line 8	Line 9	Line 10
Proof Test		☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Drop Test	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
No of Points	___	___	___	___	___	___	___	___	___	___	___

12. AS5034 Onsite Risk Assessment

AS5034 Onsite Risk Assessment
To be completed by competent person

Version1.3 May 2013

LANCER | BEER SYSTEMS

Venue Name:	**Customer No:**
Venue Address:	**Site Contact Name:**
	Site Contact Number:
Location Assessed:	
Assessed By:	**Date of Assessment -**

LOCATION

	Yes	No
Is the equipment being installed in a "Naturally Ventilated Area"?		
If yes, proceed to section 2 of risk assessment		
Are the CO_2 gas cylinders and postmix equipment in the same location ?		
If not, each location must be assessed on a separate form. **Assessment Form**		of

Room Dimensions Height ____ m x Width ____ m x Depth ____ m = $_{(tv)}$ ____ m3

Maximum Height Allowed 2.4m

Allowance $_{(al)}$ - approx % area of goods stored $_{(al)}$ ____ **Vol Room** $_{(vr)}$ = ____ m3

Note: Volume Room $_{(vr)}$ equates to free airspace less stored goods at time of inspection / survey **(vr = tv - al)**

GAS

1. Carbon Dioxide (CO_2) 2 Cyl x CO_2 Gas ____ kg X 0.54 = **Vol Gas** $_{(vg)}$ ____ m3 Result

Multiply existing qty of gas in use x 2

CO_2 Gas Concentration % = (vg / vr) x 100 = **CO_2 Concentration** ____ % **1**

Oxygen Level %=((vr-vg)/vr)x21 = **Oxygen Level** ____ % **3**

2. Mixed Gases 2 Cyl x Mixed Gas ____ kg X = **Vol Gas** $_{(vg)}$ ____ m3

Multiply existing qty of gas in use x 2 **(Vol X .75)X .543) + (Vol X 0.25) X .683) =**

Note: Volume of gas $_{(vg)}$ refers to any gas present Eg: Argon, Nitrogen, or a mix such as Cellarmix.

CO_2 Gas Concentration % = (vg / vr) x 100 = **CO_2 Concentration** ____ % **2**

Vol Room $_{(vr)}$ ____ **Vol Gas** $_{(vg)}$ ____ **Oxygen Level** ____ % **4**

Oxygen Level % = ((vr - vg) / vr) x 21

If result 1 or 2 are above 3% CO_2 Concentration = Fail ____

If result 3 or 4 are below 19% Oxygen Level = Fail ____

SITE CLASSIFICATION

	Yes		No	
Would the quantity of gas stored / used in the area raise the gas concentration levels above the short term exposure limit (STEL) of 3% or reduce oxygen below accepted level of 19% in the event of a total gas leak ? **Note**: When Bulk Gas Vessels are used the answer is **Yes**		8		0
In the event of a gas leak or a problem, is there potential for gas to pool or otherwise become trapped and remain in area ?		8		0
Is the area in question an enclosed space, cramped, have limited natural air circulation or have limited access ? (eg: cellar, cool room or other form of storage area)		6		0
Are cylinders or gas equipment located in an area which (by definition) is NOT considered a primary place of work, even though on occasion a person may enter the area to carry out a range of tasks ?		2		0
Are cylinders / supply or gas equipment (regulator boards, postmix or FCB machines) located in an area that is outside or has equivalent natural ventilation ?		1		0

Site Classification Score ____

GENERAL AREA

	Yes	No
Are all relevant warning signs and labelling in place ?		
Is lighting sufficient to clearly read warning signs, operating instructions, equipment and gas ?		
Are all CO_2 gas bottles secured to prevent them falling over ?		

CONTROLS

	Yes		No	
Staff trained in hazards and procedures associated with gas equipment ?		6		0
Are appropriate emergency procedures in place ?		2		0
Are there appropriate means of dispersing gas leak (eg: door) ?		2		0
Is gas detection monitoring equipment installed ?		8		0
Is there an appropriate safe system of entry and work ?		2		0
Are safety relief valves pipelined to discharge to a safe area ?		2		0
Is there mechanical ventilation present ?		4		0

Control Score ____

Risk Score Assessment

To be completed by competent person

Step 1 - Determine Site Classification Category

Based on information from Onsite Risk Assessment, determine Site Classification Category from table below.

Score	Category	Consequence
20 or above	A	Major
16 - 19	B	Moderate
7 - 15	C	Minor
6 or less	D	Insignificant

Score

Category

Consequence

Step 2 - Determine Likelihood Category

Based on information from Onsite Risk Assessment, determine Likelihood of injury happening Category from table below.

Circumstances of Likelihood	Likelihood
Is expected to occur in most circumstances	Almost Certain
Will probably occur in most circumstances	Likely
Might occur at some time	Possible
Could occur at some time	Unlikely
May occur only in exceptional circumstances	Rare

Likelihood

Step 3 - Determine inherent Risk Rating

Using information from Site Classification and Likelihood Categories above, plot into matrix below to determine Inherent Risk Rating

Consequence / Likelihood	D Insignificant	C Minor	B Moderate	A Major
Almost Certain	Moderate	High	High	Extreme
Likely	Moderate	Moderate	High	High
Possible	Low	Moderate	High	High
Unlikely	Low	Low	Moderate	Moderate
Rare	Low	Low	Moderate	Moderate

Inherent Risk Rating

Step 4 - Determine Existing Controls Rating

Based on Controls Score from Onsite Risk Assessment, determine Control Rating using table below.

Score	Existing Control Rating
20 or above	Excellent
10 - 19	Good
7 - 9	Poor
6 or less	Not satisfactory

Existing Controls Score

Existing Controls Rating

Step 5 - Determine the Residual Risk

Using the below matrix, determine the Residual Risk Rating, using the Inherent Risk Rating from Step 3 and the Existing Controls Rating determined in Step 4.

	Inherent Risk Rating			
Existing Control Rating	Low	Moderate	High	Extreme
Not Satisfactory	Low	Moderate	High	Extreme
Poor	Low	Moderate	High	Extreme
Good	Low	Low	Moderate	High
Excellent	Low	Low	Low	Moderate

Residual Risk Rating

Comments ***(please note any site specific comments or discussions held with site contact)***

Please retain records of completed sheets