

SEVERN
TRENT



Dŵr Cymru
Welsh Water

United
Utilities

vessex
water
a VTL company

southwestwater.

YorkshireWater

anglianwater

NORTHUMBRIAN
WATER

Southern
Water

Thames
Water

SCOTTISH
WATER

THE LINDE GROUP
Linde

Cylinder C



ChlorGuard

Emergency
Valve
Shutoff
System

Drum Motor DM



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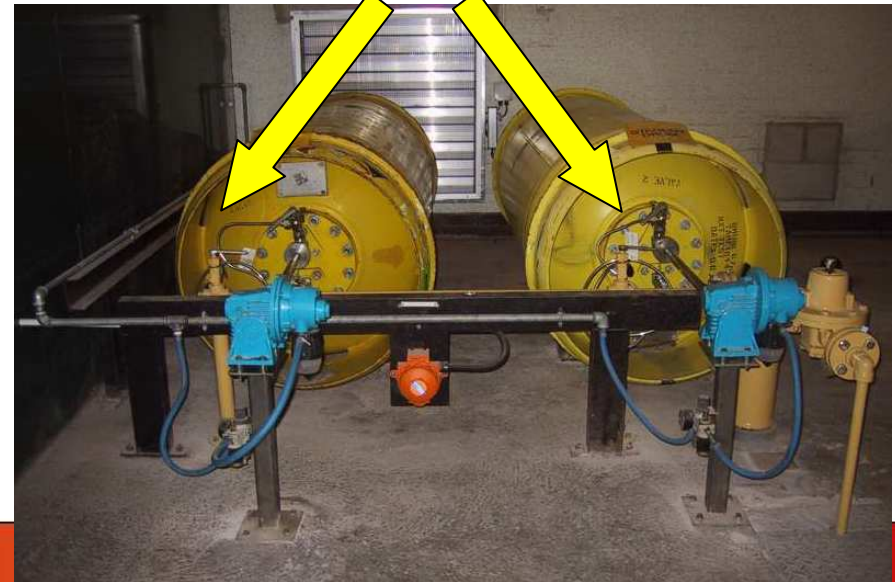
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Introduction

- PSI Ltd Company Profile
- Product Overview
- Scope of Supply
- Testimonials
- Technical Information for Parts
- Competition
- Advantages over US Electrical Systems
- Advantages over traditional gas scrubbers

99% Gas Leaks



IMPROVE THE SAFETY OF YOUR GAS CHLORINATION SYSTEM WITH ChlorGuard



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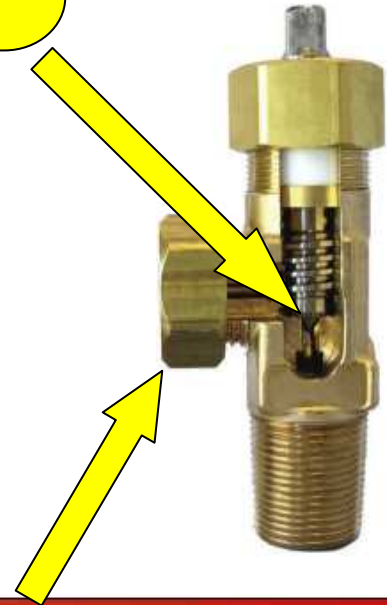




Product Overview

- Protects personnel from toxic gas – insurance for end users
 - 99% of all leaks occur at valve take off
 - ChlorGuard shuts off at source
- Originally designed by ICI Watercare in the early 1990's
- No requirement for scrubber systems
- Proven track record with 1000 installations worldwide
- Patented Design
- Adaptable & compatible system for many cylinder/drum valves
- User friendly equipment designed with maintenance in mind
- Low running & maintenance costs
- Telemetry feedback available
- For use with compressed air or Nitrogen
- Remote rapid shutdown
- System test function available

Shut Off



99% Gas Leaks



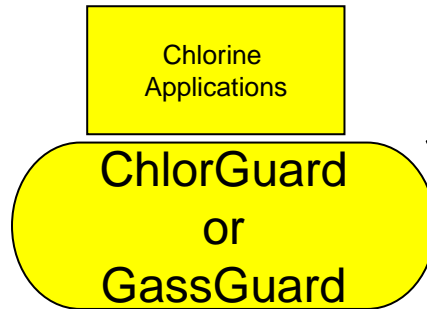
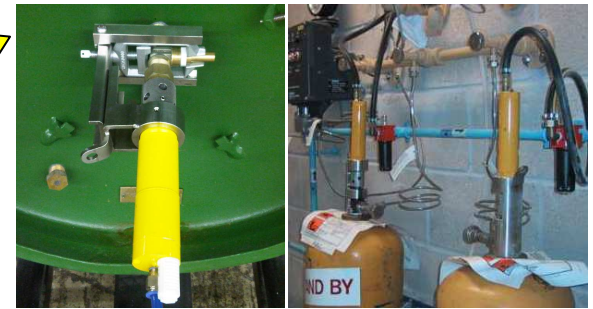


Scope of Supply

Control Panel



Pneumatic Air Drive Assembly



Chlorine Applications

ChlorGuard or GassGuard

Other Dangerous Gas Applications

Compressor Assembly



Gas Detection



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TESTAMONIALS

- Anthony Waite, Mane Consultancy, Consultant to South West Water

“ChlorGuard is a flexible and cost-effective control measure that provides peace of mind for the end user in a 24/7 business. It also provides a very necessary level of control between the operational needs of the water provider and consumer needs”

- Chris Dolman, Product Manager Gases, BOC

“As legislative pressures increase on toxic and other gas users, ChlorGuard offers a very flexible safeguard to prevent leaks and increase site safety”

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ISO 9001
UKAS
QUALITY
MANAGEMENT
005

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ChlorGuard Control Panel

- Fail-Safe system Normally Open Solenoid Valves (NO)
- Up to 6 banks each with 3-way control
 - Isolate – Isolates compressed air
 - Manual – Shuts bank down immediately
 - Automatic – Shuts bank down from remote stop, gas detectors or key test
- 110V or 230V
- Telemetry available for the following:
 - Low pressure
 - Mains power failure
 - Bank lever not in automatic
 - Low battery
 - Alarm

- 8 hours battery back up for both systems 24V (10 Ah)
- Key test to enable frequent function testing



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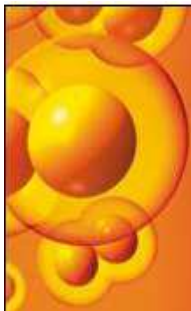
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Receiver/Compressor Unit – for US market

- ASME approved receiver
- Receiver size: 60 Gallon (270L)
- Compressor: 230V,60Hz, 3.5HP
- Max working pressure 11 bar
- Compressor cut in pressure – 8 bar
- Compressor cut out pressure – 10 bar

This specification may vary depending on clients site



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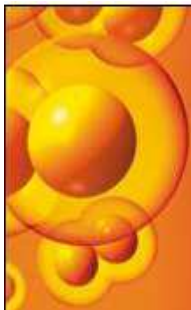
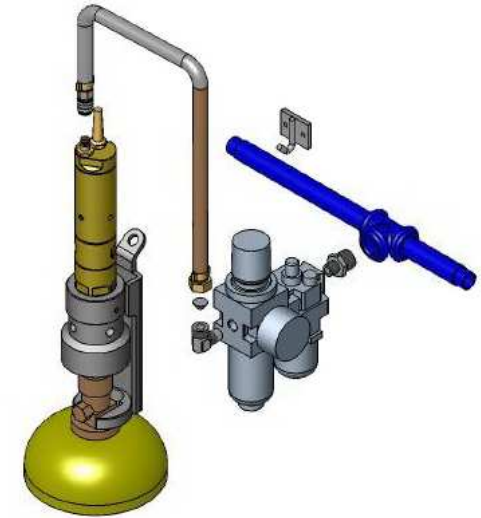


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ChlorGuard Cylinder “C” Drive

- Rotating pneumatic air motor
- Stainless steel fabrications
- Adaptable to fit non-standard cylinder valves
- Torque requirements are preset for specific applications and can be manually – up to 40-50 Ft/lbs
- Torque adjusted via pressure regulation (FRL)
- Up to 6 motors supplied from one 6-way control panel
- Flexible hose connection into main line



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ChlorGuard Drum Motor “DM” Drive

- Rotating pneumatic air motor
- Drive mechanism is clamped onto the drum valve
- Stainless steel fabrications with optional stand
- Adaptable to fit non-standard cylinder valves
- Torque requirements are preset for specific applications and can be manually – up to 40-50 Ft/lbs
- Torque adjusted via pressure regulation (FRL)
- Up to 6 motors supplied from one 6-way control panel
- Flexible hose connection into main line



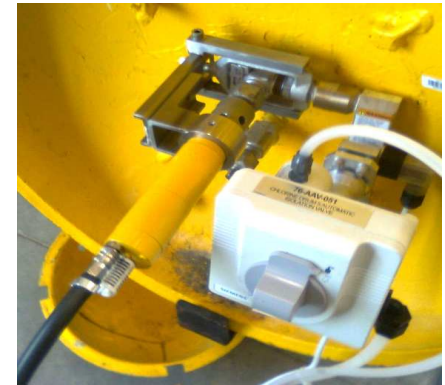
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Competition:

- Halogen – US manufactured system using electrical drives
- Robo Control – US manufactured system using electrical drives
- Gas scrubber systems – neutralises gas as the leak occurs



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Advantages over Halogen & Robo Control Electrical Drive Systems:

- Simple and cost effective to maintain with only mechanical parts at the motor.
- Less can go wrong with pneumatic drives.
 - No danger of overheating when the motor stalls out.
 - Pneumatic drives are generally more robust and reliable with systems in the field nearly 20 years old.
 - Compressed air is always stored to run the motors in the event of mains power/battery drain. Don't have to rely on electrics which can malfunction.
 - Control panel does not have to be installed in gas room as with electric drives due to voltage drop across cables.
 - Competitive pricing.
 - Installed into thousands of applications worldwide for complete product confidence.
 - Vast range of safety diagnostics for the end user.



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Advantages over Gas Scrubber Systems:

- ChlorGuard shuts off gas supply within 4/5s of gas leak. With a gas scrubber system the gas is still leaking and operators have to don BA kit to resolve the leak situation.
- With gas scrubber systems, it can take up to 2 hours for the gas levels in the room to reduce to a safe level.
- ChlorGuard is more quick and efficient to respond.
- ChlorGuard has much less footprint than scrubber system which can be large in size.
- ChlorGuard is easier to service and maintain.
- ChlorGuard is more cost effective to procure and service.
- ChlorGuard is easy for the end users to work around.



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