



**GROVELEY DETECTION**

Anchor Works, Groveley Road, Christchurch BH23 3HB  
Tel. +44 (0) 1202 483497 web:www.groveley.co.uk

# GDU-PTV

## Performance Target Verification Kit

### Operational Manual

RELEASE NOTES				
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GROVELEY DETECTION

1	Table of Contents	
1	Table of Contents .....	2
2	Introduction .....	3
3	Safety Guidelines.....	4
3.1	Warning .....	4
3.2	Liability.....	4
3.3	Personal Protection Equipment .....	4
3.4	GDU-PTV Apparatus .....	4
4	Operational Procedure.....	5
4.1	Mechanical Illustration and Connections .....	5
4.2	Performance Test .....	6
5	Help Us to Help You! .....	7



GROVELEY DETECTION

## 2 Introduction

The GDU-PTV performance target verification kit provides an accurate method to test both functionality and performance of the Groveley GDU ultrasonic gas detector. The GDU is an omni-directional airborne leak detector that responds to pressurised gas leaks.

This detector complements traditional gas detection methods used in refineries, gas plants and offshore installations. Ultrasonic gas detectors are the only type of hazard (fire or gas) detection product where the performance target set out in the installation safety case can be verified meaningfully and safely.

The GDU-PTV generates a 'burst release' representative of that expected in the event of an incident. The GDU-PTV is portable and can be used by a single person.

## 3 Safety Guidelines

### 3.1 Warning

The cylinders of the GDU-PTV contain high pressure nitrogen. For this reason it should be ensured that the nozzle for the nitrogen release is not pointing in the direction of any personnel or equipment up to or within a range of 5 metres.

Before operation of the GDU-PTV is undertaken the operator must make certain that all connections between cylinders, hoses, regulators and valves are fully sealed and tightened accordingly. The cylinder removal retainer should also be firmly attached using all four bolts as detailed in section 4.1 of this document.

### 3.2 Liability

All liability for the correct function of the GDU-PTV is irrevocably transferred to the owner / operator to the extent that the GDU-PTV is altered or utilised incorrectly by personnel in a non conformance to its intended use.

### 3.3 Personal Protection Equipment

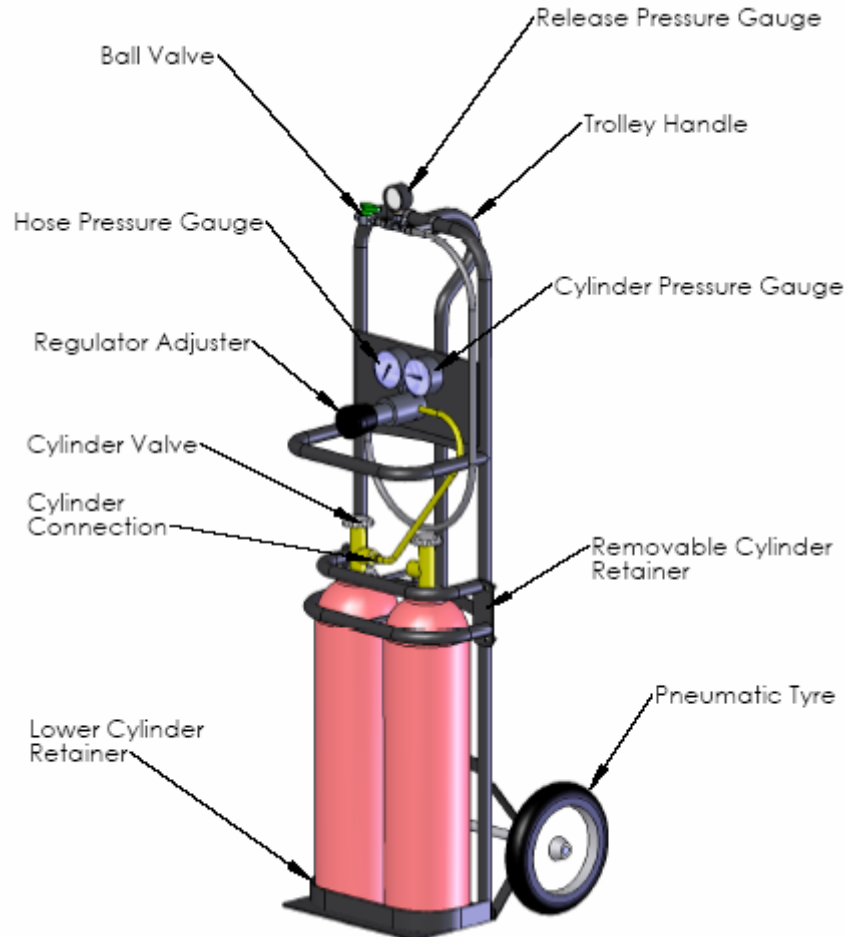
PPE covering the following, as a minimum: Thick gloves; Safety Spectacles; Ear Defenders; Hard Hat; Safety Footwear.

### 3.4 GDU-PTV Apparatus

- GDU-PTV Trolley with cylinder retainers
- 2 off 150 bar Nitrogen (N<sub>2</sub>) Cylinders
- High pressure hose from cylinders to regulator
- High pressure regulator
- High pressure hose from regulator release pressure gauge
- Ball valve and nozzle

## 4 Operational Procedure

### 4.1 Mechanical Illustration and Connections



- The GDU-PTV cylinders should be securely attached using the cylinder retainers. There are four bolts for attaching the removable cylinder retainer that must be all be in place and tightened to ensure the cylinders are locked in position.
- All hose connections must be safely secured and it must be ensured that no leaks are present.
- Pneumatic tyres must be inflated.
- The GDU-PTV should only be left free standing on a flat even surface.
- All valves must be closed when the equipment is not in use. After the regulator and cylinder valves have been closed the ball valve on top of GDU-PTV should be opened slowly to bleed off any excess pressure.



## 4.2 Performance Test

- The trolley for the GDU-PTV should be positioned at the required distance with the nozzle pointing at the detector before testing can commence. Only once the equipment is in position on a flat even surface can testing begin.
- The cylinder valve on the connected cylinder should be fully opened and the pressure observed on the cylinder pressure gauge.
- The required pressure should then be dialled up using the regulator adjuster.
- The GDU-PTV is now prepared for a gas release. Again it must be made certain that no personnel are located in front of the GDU-PTV nozzle.
- It should be noted that the type of release expected in real service would be generated from a continuous source of pressured gas. Using portable test equipment it is not possible to recreate this sound source for the whole duration of the control system time delay. For this reason all alarm delays should be removed for the duration of the test.
- The control room must then be contacted in order that the output of the correct GDU-01 can be verified. The GDU-PTV is a '**burst**' release and the **immediate** milli-ampere output of the GDU-01 should be recorded.
- Following confirmation from the control room the ball valve on top of the GDU-PTV should be opened briefly and then closed.
- It should be confirmed with the control room that an output from the GDU-01 under test has been observed and recorded.
- After performance verification testing has been completed all valves should be closed. Before the PTV can be moved to the next test location, it must be ensured that the regulator adjuster is closed and then the ball valve should be opened to bleed off any pressure left in the output hose.



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## 5 Help Us to Help You!

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