

GEDS

Gas Extraction and Disposal System

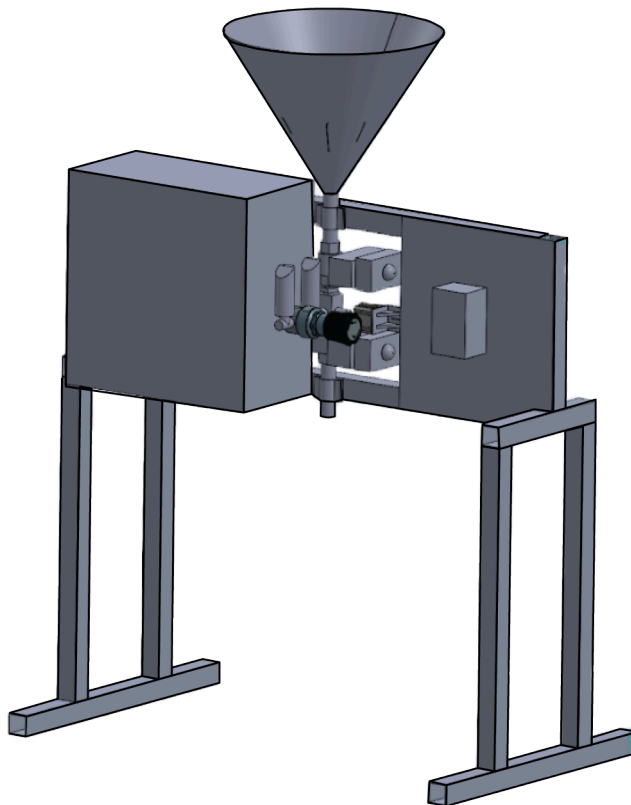
Product Sheet

Introducing the Gas Extraction and Disposal System (GEDS) — an advanced solution designed to efficiently extract and safely decompose gas from cartridges, while securely collecting the emptied units for recycling. Engineered for high-volume operations, GEDS ensures minimal leakage, maximised safety, and compliance with environmental standards, making it the ideal choice for facilities focused on responsible and efficient gas product management.

Process flow overview

The process used in the handling and processing of Nitrous Oxide tubes is simple and safe. Each step in the sequence is designed to ensure the safe and efficient management of the tubes, from their initial entry into the system to the controlled release of gas and final disposal.

Step	Description
1: Input Funnel	Nitrous Oxide tubes are oriented correctly as they enter the system
2: First Airlock	Opens to allow the tube into the cutting mechanism
3: Cutting Mechanism	The tube is punctured, and the gas released into a the volume chamber
4: Volume Chamber	The gas released into the chamber, which is 60-100 times the tube's volume, allowing for a controlled pressure reduction
5: Second Airlock	Once the pressure in the chamber drops to a present level, the tube is released into a collection bin



Evacuation and Leakage

Evacuation Process: The gas is evacuated from the volume chamber via a vacuum pump and directed toward a Central Destruction Unit (CDU).

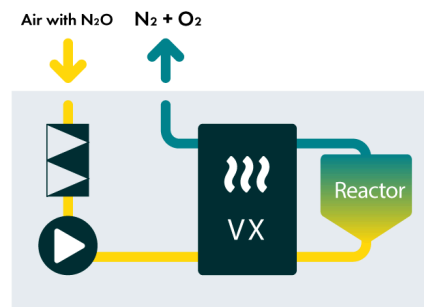
Leakage Management: The system anticipates some gas leakage when the airlocks open to admit new tubes. The acceptable leakage levels will be determined through testing.

Technical specification:

Power consumption:	2.3 kW
Voltage / fuse:	230 VAC / 10A
Cycles per hour:	350

Destruction technology

The nitrous input to the system is via a particle filter. The air is then pushed through the system by means of a fan to a heat exchanger (pre heated) where it is heated to the operational temperature by a radiator. The purified air is then passed through the heat exchanger where it is cooled down before it is let out to the atmosphere. The catalytic process decomposes the nitrous (N_2O) into oxygen (O_2) and nitrogen (N_2). Normal air contains more than 99% of these gases.



Example of destruction device

The Medclair Central Destruction Unit (CDU) is capable of decomposing 16 grams of nitrous oxide a minute, with a 99% purification degree.



Technical specifications

Power supply	400 VAC, 50Hz
Power consumption	10 A max
Rated power	3 kW
Energy consumption, warming up	2,4 kW
Energy consumption, operation	Ca: 800 - 1 100 W (depending on load)
Normal system pressure	Ca: 2500 Pa