

LECTRODRYER

PROTECTING YOUR GENERATING ASSETS SINCE 1932

GENERATOR FAST DEGAS CO₂ SYSTEM



The Purging Process is Inevitable in Hydrogen Cooled Generators: Mitigate Risk, Protect Operators, and Automate the Process with Lectrodryer's Generator Fast Degas CO₂ System

*** H₂ → CO₂ OR AIR → CO₂ IN 20-40 MINUTES ***

INTRODUCTION

The Lectrodryer Generator Fast Degas CO₂ System (GFD) is a state of the art system used to expedite the degassing of hydrogen or air from Hydrogen Cooled Generators using CO₂ as the inert gas. Due to the cryogenic nature of CO₂, this process historically has taken 4 to 12 hours depending on the site. The GFD is proven to purge most generator capacities in 20 to 40 minutes by preventing lines from clogging with dry ice due to the expansion of the CO₂. The GFD helps reduce the time and cost involved during scheduled and forced outages by allowing the generator to be purged and brought back online much more rapidly. This system is also used as a risk mitigation tool to evacuate hydrogen during dangerous upset conditions.

FUNCTION

The Lectrodryer Generator Fast Degas CO₂ System will deliver 236 SCFM (379 NCMH) of CO₂ to the generator to quickly, efficiently and safely purge the hydrogen or air from the generator. The CO₂ System controls the CO₂ pressure and heats the gas. This system is designed to maintain a set temperature for purging protecting generator components from extreme temperature shock

The GFD can be located indoors and outdoors near the existing CO₂ bottle/bulk supply system.

BENEFITS

- Risk Mitigation - Faster Emergency hydrogen degas under dangerous upset conditions.
- Efficiency / Unit Availability - Less time required during outage for purging. More operator availability.
- Safety - Eliminate the need for a generator purge to last through a shift change, thereby minimizing the risk of mis-communication.
- Suitable for Indoor or Outdoor Installation.
- CO₂ Flow Totalizer—monitors CO₂ consumption.
- Approximate Weight: 1600 lbs / 726 kgs
- Dimensions: 40"W x 34"D x 82"H / 102 cms x 86 cms x 208 cms
- Optional Automatic Transfer Switch for alternative backup power supply.

FEATURES

- The GFD can be stand alone used with existing purge piping and existing manual valves.
- Heater designed to provide consistent flow rate under extreme weather and operating conditions.
- Operates with gas or liquid CO₂ feed.

AUTOMATED OPTION

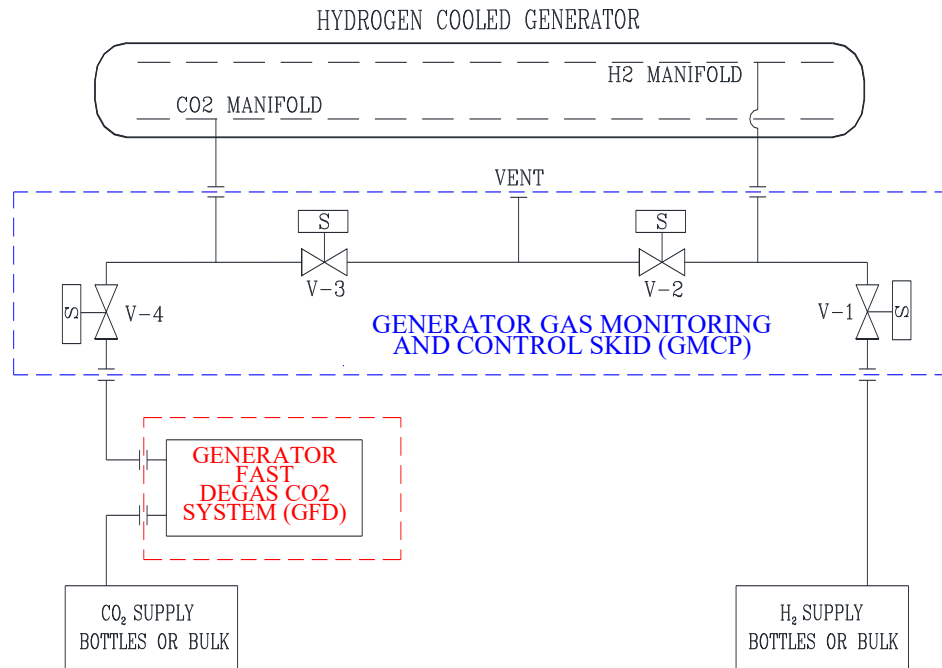
Optional fully automated purging process when purchased with Lectrodryer's Generator Gas Monitoring and Control Skid (GMCP). The generator can be purged and brought to a safe condition without ever leaving the control room.



Stand Alone Generator Fast Degas CO₂ System (GFD)



Automate Your Purging Process with Lectrodryer



BENEFITS

All of the benefits from the GFD previously listed, plus:

- Emergency Purge from Control Room - quickest and safest way to purge your generator without operator involvement.
- Safety - Complete automation minimizes the opportunity for human error.
- Dependability - Manual Bypass for every automated valve to ensure purge functionality even during complete power or instrument air black out.
- Efficiency / Unit Availability - Even faster purge times, resulting in even shorter outages.
- Automatic Hydrogen Make-up - Solenoid Valve and Regulator to maintain Generator Hydrogen Pressure due to leakage.

FEATURES

- The Generator Gas Monitoring and Control Skid (GMCP) also includes monitoring of the Generator Case Pressure, Generator Fan Differential pressure and Generator Gas Purity.
- Approximate Weight: 2,000 lbs / 907 kgs
- Dimensions: 70.25"W x 34"D x 82"H
178 cms x 86 cms x 208 cms
- Optional Hydrogen Totalizer - Used to determine hydrogen usage and leakage rates.



Generator Gas Monitoring and Control Skid (GMCP)



LECTRODRYER POWER SECTOR PRODUCTS



BAC-50 HYDROGEN DRYER

- Fully Automatic Dual Tower Dryer
- Hydrogen Purity Improvement
- Continuous Drying of Hydrogen Even During Turning Gear
- Generator Dew Point at Case Pressure
- No Hydrogen Purge Loss
- Additional Options Include:
 - Outlet Dew Point Sensor
 - Water Discharge Monitor
 - OVF-6 Oil Vapor Pre-filter

GENERATOR GAS MONITORING SKID

- Integration of Gas Purity, Case Pressure and Fan
- Differential Pressure Information
- Real Time Purity Reading of the Generator Gases
- Facilitates Purging, Purge Gas Cost Reduction and Saves Time While Ensuring Safe Operation
- Purity Measurement can be by Density With No Hydrogen Loss or Thermal Conductivity
- Redundancy Options Available

GENERATOR CONTROL PIPING SKID

- Facilitates Gas Handling for a Safe and Efficient Generator Degass and Refill
- Ensures that Only One Type of Gas is being Supplied to the Generator
- Additional Options Include:
 - Hydrogen Auto Make Up System
 - Degass and Refill Automation
 - Hydrogen Totalizer
 - Liquid Level Detectors

GENERATOR FAST DEGAS CO₂ SYSTEM

- Eliminates Dry Ice Formation in Pipeline
- Allows the Generator to be Purged and Brought Back Online Rapidly during Scheduled or Forced Outages
- Mitigates Risk by Rapidly Evacuating Hydrogen During Dangerous Upset Conditions
- Provides a Flow Rate of Up to 236 SCFM (379 NCMH)
- CO₂ Totalizer Available to Quantify CO₂ Usage



CONTINUING THE TRADITION OF QUALITY AND SERVICE SINCE 1932

LECTRODRYER

P.O. Box 2500, Richmond, KY 40476-2602 (U.S.A.)

Phone: +1 (859) 624-2091 / USA Toll Free: 877-403-5215 / Fax: +1 (859) 623-2436

Website: www.lectrodryer.com / E-mail: info@lectrodryer.com