

Lean Air Units

from LT GASETECHNIK

LT Lean Air Units

Lean air units are often used in the chemical industry.

Area of application

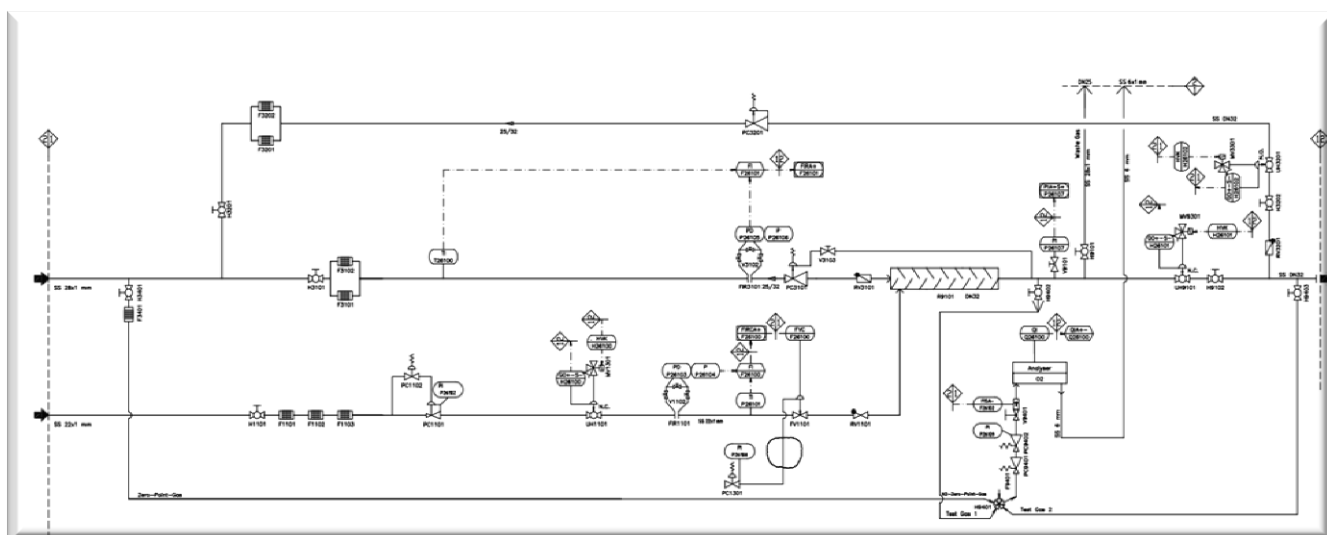
In chemical processes, e.g. in the production of synthetic resins or lacquers, lean air is used to supply solvent boilers and reactors. The normal oxygen content in air (which is about 20.95 Vol.%) is to be reduced to a defined proportion (usually 4 to 10% Oxygen in mixed gas). For this purpose, technical air (compressed air) is mixed with nitrogen (N_2), so that lean air with a **defined Oxygen (O_2) concentration** is generated.

Why should you use a Lean Air Unit from LT GASETECHNIK?

Keeping the specified oxygen content on the defined level has an influence on the quality of the production process and furthermore has safety reasons. Lean air is often used in a potentially explosive atmosphere. If the maximum permissible oxygen concentration is exceeded, this can lead to detonation and, as a result, to serious accidents. For producing lean air in hazardous area appropriate regulations must be observed and adapted components must be used.

Depending on customer specification, LT GASETECHNIK lean air systems are equipped with a gas analyzer (partly also compliant with the safety integrity level SIL 1 or SIL 2), which measures the O_2 concentration in the mixed gas. The mixing result is thus permanently monitored and optimized; In addition, the control can safely prevent inadmissible oxygen concentrations.

LT GASETECHNIK has more than 45 years of global experience in gas mixing plants. Design, process engineering and production are carried out exclusively in Germany. In addition to ease of operation and maintenance, our systems stand for highest quality, reliability and durability.





Equipment options

LT Lean Air Units are always designed according to customer specifications and are equipped accordingly. The following equipment variants are common:

- Design of the unit for a hazardous area or for non-hazardous area
- Gas filter on the gas inlet (police filter)
- Pressure control of compressed Air and Nitrogen on the same mixing pressure
- Measurement of the volume flow (temperature- and pressure-compensated)
- Nitrogen bypass
- Pressure controlled and/or volume-flow controlled
- Storage of the mixed gas in a buffer tank, e. g. if the demand quantity varies
- Designed for continuous or discontinuous demand
- Autonomous system with local touch-screen control panel and bi-directional connection to a higher-level process control system
- Gas analysis, also in SIL 1 or SIL 2 versions
- Stainless steel version for aggressive environments
- System for outdoor or indoor installation, in a steel cabinet or in a rack
- Pressure holding valve, for vacuum
- GSM modem, for e-mail or dispatch of status information
- Own homepage with indication of the actual mixing result
- Remote support via VPN
- Customer specific solution

Equipped according to your requirements

References (excerpt)

BASF Münster

- Installation in ex-area
- Capacity 40 cubic meters per hour
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 5 bar
- Outlet pressure:
 - o 5 delivery points
 - o 0,5...1 bar and 1,5...2 bar
- Buffer vessel with 500 litre
- Controller and gas analyzer (in the non-ex-area)



Safe provision of defined oxygen concentration for your process

DSM Meppen

- Capacity 200 cubic meters per hour
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 5 bar
- Outlet pressure: 3 bar
- Buffer vessel having 90 liter
- Nitrogen-Bypass
- Controller and gas analyzer (signal transfer to the higher level process control system)



BASF Guadalajara

- Installation in the ex-area
- Dynamic Lean Air Unit
- Capacity 250 cubic meters per hour
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 4 bar
- Outlet pressure: 3,5 bar



Synthopol Buxtehude

Two Lean Air units:

- Capacity each 400 cubic meters per hour
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 5 bar
- Outlet pressure: 3 bar
- Buffer vessel having 3.000 liter
- Controller and gas analyzer
- Outdoor erection
- Controller and gas analyzer, bus-connection to the higher-level process control system with bi-directional data-exchange of all process data, alarm signals and error messages

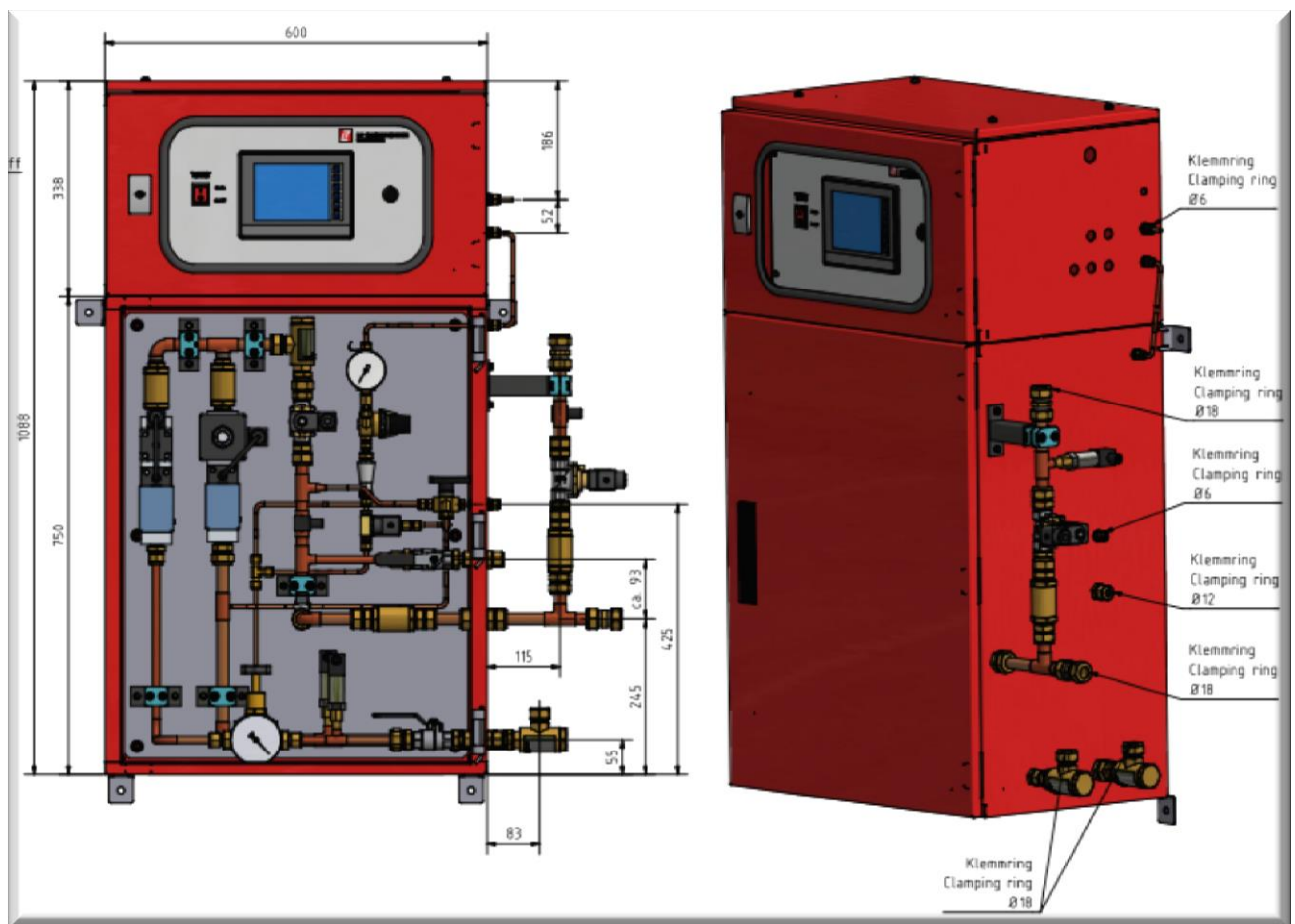
BYK Chemie

- Dynamic Lean Air Unit
- Capacity 150...5.000 NL/h (5 Nm³/h)
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 4 bar
- Outlet pressure: 2 bar
- Gas analyzer with SIL admission acc. to DIN EN 61508
- **SIL-1** compliant switch off through interconnection of gas analyzer, switch off valve and blow off valve



Bona Sweden

- Dynamic Lean Air Unit
- Capacity 50 Nm³/h
- Inlet pressure:
 - o Air 6 bar
 - o N₂ 4 bar
- Outlet pressure: 3 bar
- Nitrogen-Bypass
- Controller and gas analyzer



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