

# Pumping & Purging

A purging solution for all systems

## Multiple applications

### BEST SOLUTION, COST-EFFECTIVE

Reduce your downtime by using the best and cost-effective purging solutions. Our experts and high quality equipment make sure that you are provided with the best suitable procedure, leaving your system purged and ready for operation in minimal time.



 **a.hak**  
INDUSTRIAL SERVICES

**Multiple services, singular solutions  
for the Oil, Gas & Petrochemical Industry**



Over many years, A.Hak Industrial Services has developed the best and most cost-effective purging solutions. We aim to reduce downtime so that operations can resume as quickly as possible. In addition we offer:

- The largest and most versatile nitrogen pumping fleet in Europe
- High volume nitrogen purging (up to 30.000 Nm<sup>3</sup>/hr/unit)
- High pressure nitrogen purging (up to 700 bar)
- Temperature range: liquid -196°C or gaseous +350°C, whilst maintaining sufficient flow rate
- All connections, couplings and hoses required in stock

Our highly experienced experts will discuss with you to decide on the most suitable and cost-effective procedures on how to purge your pipelines and systems.

#### ATMOSPHERIC PRESSURE PURGING

Using this method, nitrogen is passed continuously into the system at one point, while the air or gas being purged exits from another point. The system is normally purged to atmosphere, so it remains at atmospheric pressure. Nitrogen performs its function by displacing or diluting the contents. Usually, both of these processes occur simultaneously. Hydrocarbons can be purged to atmosphere using mobile flairs.

#### PRESSURE CYCLE PURGING

The system is pressurised with nitrogen, which allows for mixture. This method is restricted to systems that can withstand the necessary pressure and is particularly suitable for complex system configurations and when simple atmospheric pressure purging procedures are not suitable.

Purging may be achieved by pressurising with one or several pressurisation cycles. The number of cycles or the pressure point of the system is dependent on the required 'end point' gas concentration. Our specialized engineer can assist you to come to the best solution for your specific problem.

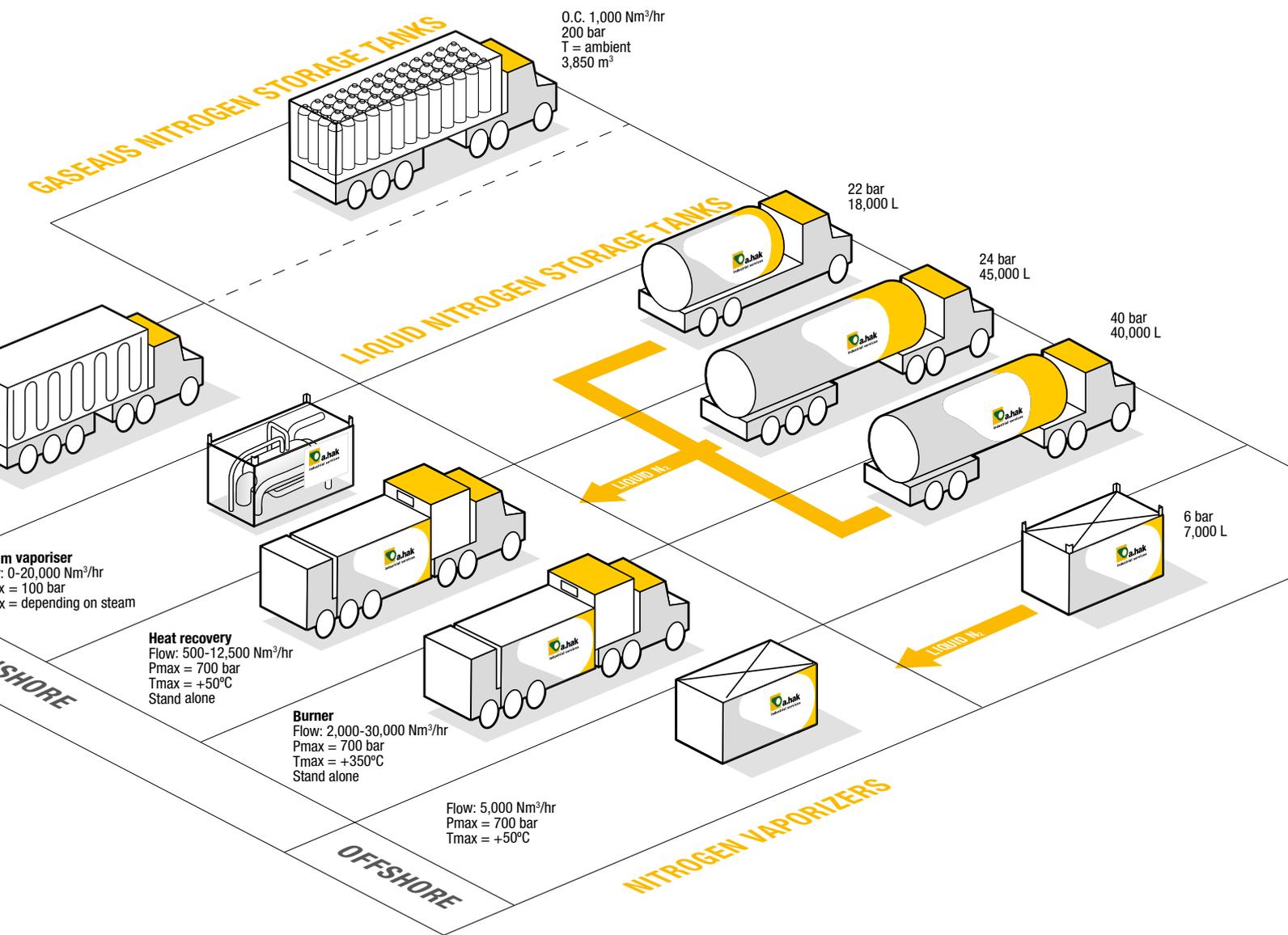
#### VACUUM CYCLE PURGING

This method is similar to pressure cycle purging except the system is evacuated before nitrogen is introduced in order to break the vacuum and mix with the residual gas. The ideal situation to apply this method would be the complete evacuation of a system before the introduction of a single system volume, which would return the system to atmospheric pressure and reduce the gas concentration to zero. To reach the required 'end point' gas concentration, multiple cycles can be executed.

**Ambient vaporizer**  
Flow: 0-1,700 Nm<sup>3</sup>/hr  
Pmax = 40 bar  
Tmax = ambient -10°C

Ste  
Flow  
Pma  
Tma

# The best and most cost effective purging solutions



## **COST SAVING ACCELERATED DOWNTIME AND START UP**

For one of our clients we were asked to accelerate the shut down and start-up of their plant by using a gaseous nitrogen flow. The requirements included pipeline pressures of 100 bar and 10 bar with a required nitrogen flow during the turnaround of at least 20.000 Nm<sup>3</sup>/h. The expected turnaround period was approximately 36 days. Also the client required a minimum of personnel and equipment directly in the plant.

During shutdown we used nitrogen purging, for the start-up nitrogen purging along with helium leak testing. All equipment such as pumps, vaporizers, steam generators and nitrogen storage tanks up to 40.000 l were provided from our own extensive fleet of equipment. The peak flow nitrogen was 45.000 Nm<sup>3</sup>/h and a total of 4.000.000 kg of nitrogen was used.

The high quality of our service combined with a cost efficient method and a good business relationship were the key success factors to this project. By using our nitrogen purging solution the downtime was cut back with almost a week, an enormous cost-saving for the client.



### **A.Hak Industrial Services B.V.**

Plesmanstraat 26  
7903 BE Hoogeveen  
The Netherlands

T +31 (0)528 225 300  
F +31 (0)528 225 400  
industrial@a-hak-is.com  
www.a-hak-is.com

