




A Member of The Linde Group

Afrox HospitalCare

Product and service offer





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Overview

Afrox HospitalCare provides a full spectrum of high quality medical gases and associated services to hospitals and clinics in both private and public sectors across southern Africa. Our gases are manufactured in ISO 9001 certified plants and are distributed to various healthcare institutions through an extensive gas distribution network in a wide range of modes from cylinders to highly specialised installations. With safety as a priority at Aprox, we have developed various training courses around safe handling of medical gases and gas reticulation systems, to ensure that the healthcare institutions, the staff, as well as the patients are safe. The Aprox product reference manual and Material Safety Data Sheets (MSDS) are available on our website www.afrox.co.za





HospitalCare Products



Medical Oxygen

Medical oxygen is widely used for virtually all modern anaesthetic techniques as well as pre- and post-operative management. Oxygen provides life support by restoring tissue oxygen levels in a range of conditions, including:

- Cyanosis as a result of cardio-pulmonary disease
- Surgical trauma, chest wound, rib fractures and coronary occlusions
- Major trauma from shock, such as road accidents and gunshot wounds
- Carbon monoxide poisoning, hypoxia.

Oxygen plays a vital role in the management of sudden cardiac and respiratory arrest whether drug induced or traumatic; as well as in resuscitation of critically ill patients when circulation is impaired. It is also used in neo-natal resuscitation. Afrox is the only supplier in South Africa to have been granted an approval for registration by Medicines Control Council (MCC) for use of medical oxygen for treatment of episodic cluster headaches.



Medical Carbon Dioxide

Carbon dioxide applications:

- Used to rapidly increase the depth of anaesthesia when volatile agents are being administered
- To facilitate blind intubation in anaesthetic practice
- To facilitate vasodilation, and thus lessen the degree of metabolic acidosis during induction of hyperthermia
- To stimulate respiration after a period of apnoea
- To prevent hypocapnia during hyperventilation
- Used for various other clinical and physiological investigations.

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Medical Nitrous Oxide

Medical nitrous oxide applications:

- For the relief of severe pain, usually in emergency situations, by inhalation with 50% oxygen
- Used during induction and maintenance of anaesthesia, in controlled situations.



Entonox[®] and Demand Valve

Entonox[®] applications:

- Entonox[®] is used exclusively for the relief of pain in a controlled setting by a healthcare professional. Entonox[®] is a ready-to-use medical gas mixture consisting of 50% nitrous oxide and 50% oxygen. The balanced nitrous oxide/oxygen ratio assures good oxygenation and minimises the risk of over sedation
- During a painful procedure such as childbirth, when the emphasis is on delivering relief from pain and discomfort with minimal sedation, Entonox[®] is a commonly used product. It is fast acting, self-regulated, and disperses rapidly from the body following cessation of inhalation
- Nitrous oxide exhibits classical dose-dependent analgesic effects, reducing the level of pain experienced. Entonox[®] is fast and effective - the onset of pain relief is gained within a minute - any effects wear off rapidly. Entonox[®] is administered via a demand valve for self-administration, where the patient has control of the drug intake.





Medical Air

Medical air is used:

- As a replacement for atmospheric air when the atmosphere is contaminated by noxious fumes, vapours or gases
- In anaesthesia as a carrier for volatile anaesthetic agents
- As a power source for pneumatic equipment
- In ventilators and incubators to provide uncontaminated and controlled air flow.

Integrated Valve Regulator

(IVR-1000 & IVR-420)



The integrated valve regulator (IVR) was designed specifically to address the needs of healthcare professionals for the administration of medical oxygen in portable cylinders. This is how:

- The IVR is ready to use whenever it is needed; there are no separate parts to find and attach
- The valve, regulator, content gauge and flow controls are integrated into a single piece and covered by a virtually indestructible protective guard
- The live contents gauge is easy to read and always indicates how much oxygen is available
- The unique design of the IVR promotes a safer environment for hospital staff and patients
- No need to maintain an inventory of working regulators or cylinder spanners
- These benefits save hospital or clinic staff time and money.





Regulators and other Accessories

Afrox provides a wide range of medical regulators to use with medical gas cylinders.

ALPINOX Pin Index Medical Oxygen Regulator with Flow Selector

Pin index oxygen gas regulator is used for homecare, emergency and hospital oxygen therapy.

Key advantages:

- New generation of medical regulator with high flow precision and continuous flow between settings
- Ergonomic, intuitive design is easy to use and ensures safer, more accurate dosing
- Single-stage piston regulator technology ensures a long lifetime
- CE certified according to MDD 93/42/EEC
- Compliant with EN ISO 10524.



Applications:

- Emergency solutions / regulators / cylinder regulator
- Homecare solutions / regulators / cylinder regulator
- In-hospital therapy / flowmeters / cylinder regulators.

Specifications Ordering Codes

Gas Type	Oxygen
Inlet Pressure	200 bar 2 900 PSI
Outlet Pressure	4,5 bar 58 PSI
Flow settings	0-1/2-1-2-3-4-5-6-7-9-12-15, 0-1/4-1/2-1-2-3-4-6-12-15-25 litres/minute
Gauge Face	0-315
Body Material	White coated brass
Seat Material	Nylon
O-ring Material	EPDM





MINIOX Medical Gas Regulator

Compact cylinder regulator is used for homecare, hospital and emergency oxygen therapy.

Key advantages:

- Precise gas flow and pressure control for safe and accurate oxygen therapy
- More accurate flow control reduces gas wastage and reduces operating costs
- Complies with national standards
- Available in single outlet, double outlet or flowmeter configurations
- Compact, economical design.



Applications:

- Emergency solutions / regulators / cylinder regulator
- Homecare solutions / regulators / cylinder regulator
- In-hospital therapy / flowmeters / cylinder regulators.

Specifications Dimensional Drawing Ordering Codes

Gas Type	Oxygen, Air, N ₂ O
Filter Material	Sintered bronze 20 µm
O-ring Material	EPDM
Diaphragm Material	EPDM
Seat Material	PA 6.6
Body Material	Chrome-plated brass
Upper Operating Temperature Limit	60 Celsius 140 Fahrenheit
Lower Operating Temperature Limit	-20 Celsius -4 Fahrenheit
Flow Rate	0-18 slpm
Outlet Connection	National standards
Inlet Connection	National standards
Outlet Pressure	3,5 bar 43.5 PSI
Inlet Pressure	200 bar 2 900 PSI
Weight	0,640 grams





Item Description	Inlet Connection	Item Number
BPR Medical Oxygen Regulator PI	Pin Index	W039015
BPR Medical Air Regulator PI	Pin Index	W039017
Rotarex Medical Oxygen Regulator PI	Pin Index	W039022
Alpinox Medical Oxygen Regulator PI	Pin Index	W039025



Dial Flow Regulators

Dial flow regulators are supplied with either a bullnose or pin index fitting, and can be fitted to all cylinder types. They have a tolerance accuracy of +/-10% for 1 litre per minute flow rates and above, providing more accurate delivery. Dial flow regulators are designed to be smaller and more compact. With less protruding parts, and with an all-metal construction, they are less prone to accidental damage.

Item Description	Inlet Connection	Item Number
Dial Flow Medical Oxygen Regulator PI	Pin Index	W039011



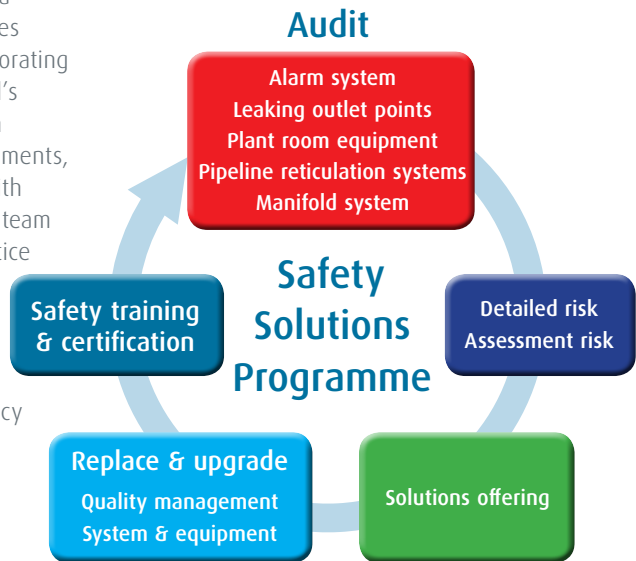


Afrox HospitalCare Safety Solutions Programme

Our Qi Services team can provide an in-depth inspection of your medical gas supply system to ensure that it complies with international standards, recognised best operating practice and local regulations. This generally starts with an on-site risk audit to identify factors such as patient, safety and operational risks, backup provisions and emergency preparedness. This will help you identify areas of non-compliance, potential risks and shortcomings in your supply system. Typical risks include inadequate staff training, lack of signage or pipeline documentation, out-of-date policies and insufficient maintenance.



Qi Services then goes on to suggest a suitable course of action. This involves documenting, prioritising and incorporating the risks identified into your hospital's risk register and presenting you with recommendations for safety improvements, risk management and compliance with standards. Our extended Qi Services team can include establishing a best-practice operational policy, drafting maintenance and cylinder storage specifications, updating pipeline drawings, advising on supply system design improvements and contingency planning.





Afrox HospitalCare Supply and Deliver Offer

Afrox's medical gas and equipment distribution network is unrivalled within southern Africa. Wherever you are, we can supply.

- For the convenience and comfort of our customers, Afrox HospitalCare offers an extensive delivery service countrywide
- All deliveries are scheduled via our world-class Customer Service Centre (CSC) which can be contacted on 0860 020202
- Our CSC or your local Afrox HospitalCare representative is able to offer advice regarding lead times for our customer deliveries; however, these are naturally influenced by the proximity of our customer delivery points to Afrox distribution hubs
- Generally all orders placed and approved with the Afrox CSC will be delivered the following day provided that the purchase order has been placed the previous day before 12 noon. Bulk delivery is determined as per a telemetry system and bulk product can be delivered anytime as agreed upon with the customer
- In general, product will be delivered to a safe and convenient location, given suitable ground conditions within the standard delivery window
- Afrox will provide a customer representative with the proof of delivery (POD) collection note at the time of delivery and/or collection
- For hospitals and other large medical establishments, bulk delivery patterns are established and dependant on demand. A minimum stock of 25% or 2 days supply is generally factored in the delivery planning and scheduling
- Afrox will re-fill bulk gases as per requirements by and agreement with the customer, at any scheduled time or day of the week
- Delivery of gas other than in cylinders shall be effected at the point where it is discharged into the storage equipment at the customer site
- Delivery of gas in cylinders shall be effected at the point where the cylinders are delivered to the customer site as per the Afrox delivery matrix
- Afrox offers the convenience of a cylinder policy that operates on a "full-for-empty" basis. Extra allocations are available, subject to prior arrangement and availability
- Geographical restrictions may apply in locations that are significantly distant from an Afrox filling site.



Our Product Quality

Compressed medical gas:

- Our compressed medical oxygen cylinders are supplied to the 99,5% (min) medical oxygen purity. This complies with the current European Pharmacopeia Standard
- For our customers' safety, peace of mind and comfort, Afrox will ensure that medical gas cylinders supplied to all our customers are:
 - in a good and clean condition
 - fitted with tamper-evident seals
 - tagged with legible cylinder labels, as per approved Afrox labelling guidelines
- Afrox will maintain all medical cylinders to the required standards through our refill cycle
- With the safety of our customers and our people as a priority for Afrox, we reserve the right to inspect all Afrox-owned cylinders that are at customers' sites at all times.

Bulk medical gas:

- Afrox tests each tanker delivery for purity and the gas is certified before being transferred to the customer's storage vessel
- Upon delivery of our medical gases, the tanker driver will hand over a delivery note which must reflect (amongst others) the customer name, delivery address, name of product delivered and quantities delivered. A copy of a Certificate of Compliance for our gases is available on request
- The customer representative is responsible for checking that the bulk medical product conforms to the specification, and to ensure conformance of the delivery to order requirements and/or the supply agreement, with regards to completeness of the delivery note and the information recorded therein
- Please note that storage vessels retained by customers and refilled on site, need not be tested immediately after filling. This will be conducted as per the standing agreement with the customer
- Afrox provides Material Safety Data Sheets (MSDS) with either the supply agreement or applicable handover documentation for all our medical gases. Copies of these are available free of charge from the Afrox website www.afrox.co.za.





Our Packaging Offer

- To ensure that our products are available for our customers in the most convenient sizes and quantities, Afrox HospitalCare offers our customers a diverse range of packaging alternatives
- Medical gas cylinders are available in a range of sizes and quantities to suit the customers' healthcare needs
- Afrox supplies bulk liquid oxygen and bulk nitrous oxide in suitable and approved tanks for large clinics, hospitals and other large healthcare establishments
- This bulk supply offer includes all equipment required to produce gaseous medical oxygen and nitrous oxide supply according to the healthcare facility requirements. This system includes:
 - A primary liquid oxygen (or nitrous oxide) gas storage vessel
 - Back-up storage supply in event of failure of the primary system
 - Instrumentation for providing alarm signals should there be any technical faults or interruption to the gas flow
- We understand the critical nature of the services that the healthcare institutions deliver. As such, Afrox HospitalCare offers our customers an electronic monitoring (telemetry) system that monitors gas levels in storage vessels at customer sites. The system has been configured to automatically send data electronically to Afrox on a continuous basis. Alarm signals are also channelled through to relevant personnel, in the event gas levels drop below pre-set levels. With this system, customers are able to monitor gas consumption as well as plan accordingly. Afrox is also able to use this data to re-fill the vessels based on set minimum levels
- Afrox HospitalCare offers the installation of back-up manifolds which are used to provide local supplies of medical gases within healthcare facilities in case there is mechanical interruption to the primary gas supply from the storage vessel.





Customer Services

- Afrox boasts a highly competent Customer Services Centre (CSC) which operates Monday to Friday from 07h30 to 17h30. In order to ensure that our customers' needs are met at all times, a service consultant is always available to answer to your calls after hours, 7 days a week and 365 days a year
- The centre uses an event tracking system enabling and empowering our entire service and sales organisation to meet our healthcare customers' requirements
- Afrox HospitalCare's multi-skilled staff are customer service experts, offering specialised advice on all products and services that Afrox HospitalCare offers
- Throughout the country, customers can place orders, make account and general enquiries by using the shared services number 0860 020202 (Arox HospitalCare)
- The CSC is equipped with state-of-the-art IT systems to enhance operational efficiency for the nursing services, electronic billing, electronic links for speedy authorisations and other functions. This is an effort by Afrox HospitalCare to ensure that we meet the high service levels required by our customers
- All our customer accounts are managed through the Customer Service Centre.



Why use the Afrox eShop

- Keep track of orders and invoices
- Check order history
- Re-order from previous invoices (speeding up your order process)
- Create a custom order template (speeding up your order process)
- Manage cylinder holdings
- Manage deliveries
- View latest specials and offers
- Orders are processed in our system immediately
- No order placement queues
- Available 24/7.

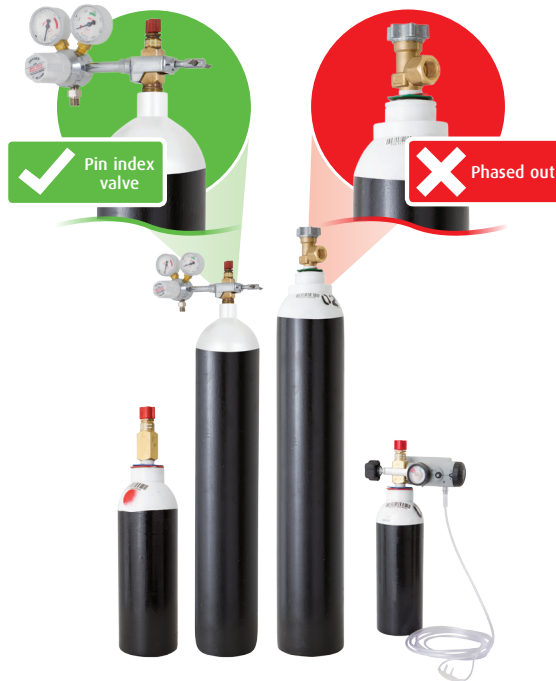
Email address: customer.service@afrox.linde.com

Shop online: www.afroxshop.co.za





New medical gas packaging regulations



The packaging of medical gases into portable steel and aluminium cylinders is governed by South African National Standard SANS 10019. An amendment to SANS 10019, which was published in 2013, mandates that all medical gas cylinders with a water capacity of 10 litres or less shall be fitted exclusively with a pin index valve.

Afrox has through the South African Compressed Gas Association undertaken to comply with this amendment by 31 December 2018 and has started to systematically withdraw medical gas cylinders with 10L, 5L & 2L water capacity, that are fitted with a bullnose valve outlet, from the market and replace them with cylinders fitted with pin index valve outlets.

We therefore advise our customers to ensure that the regulators are compatible with the pin index valve before the cut-off date. The compatible regulators can be purchased at an Aprox Gas & Gear or through the Aprox eShop www.afroxshop.co.za.





Leading the way in medical gas products



The Afrox Integrated Valve Regulator (IVR) is designed specifically to address the needs of medical practitioners and respiratory therapists for the administration of medical oxygen in portable cylinders. IVR cylinders are ready to use as the valve, regulator, live contents gauge and flow controls are integrated into the cylinder. Therefore no separate regulator is required.

The Afrox IVR complies with the South African National Standard SANS 10019 published in 2013.

With the IVR, treatment is always ready.





NATIONAL CUSTOMER SERVICE CENTRE

Tel: 0860 020202

E-mail: customer.service@afrox.linde.com

Shop online at www.afroxshop.co.za

www.afrox.com



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