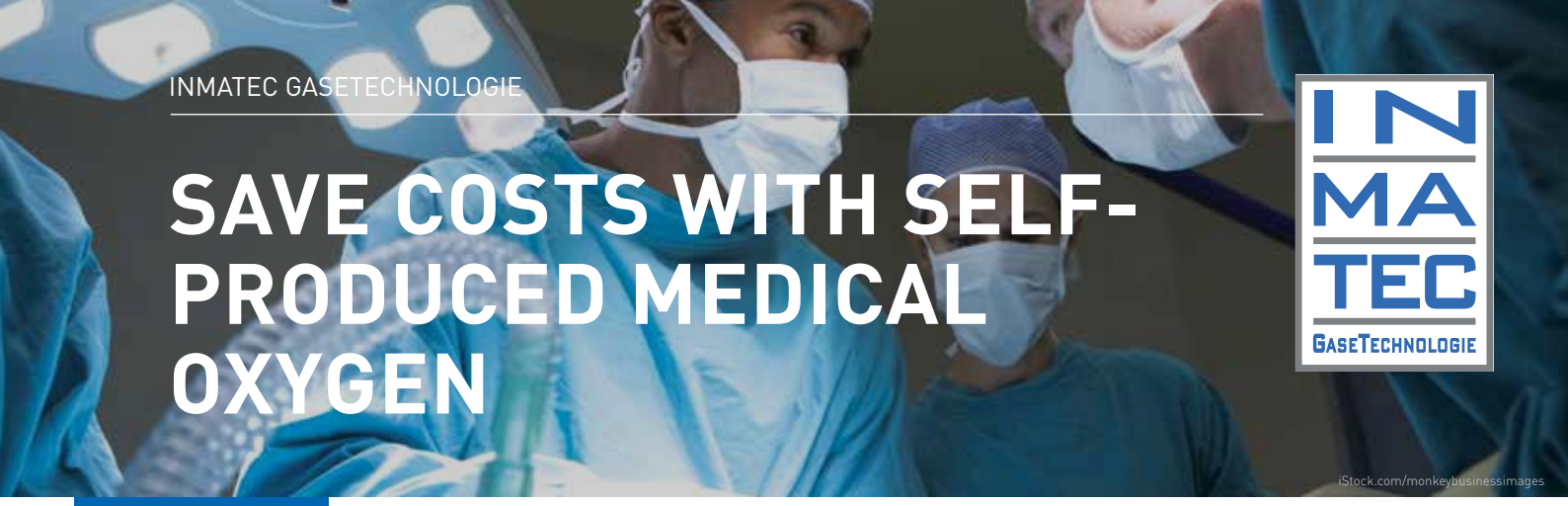

SAVE COSTS WITH SELF-PRODUCED MEDICAL OXYGEN

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CASE STUDY

THE HOSPITAL OF THE SISTERS OF MERCY IN PRAGUE PUTS ITS TRUST IN SELF-GENERATED OXYGEN

Medical oxygen is used to treat patients in many areas at the Hospital of the Sisters of Mercy. For example, oxygen is used in a number of operating theatres and to treat hypoxia in drug addicts in the Czech Republic's only detoxification centre. Two oxygen generators made by the German company INMATEC are used to supply the oxygen. This ensures an uninterrupted supply of oxygen and brings significant cost savings to the hospital every year.

The Hospital of the Sisters of Mercy of St. Borromeo is a religious, medical institution in the centre of Prague. As the only church hospital providing acute care in the Czech Republic, it is able to offer its patients both outpatient and inpatient medical care. Supplying oxygen to roughly 270 patients is of key importance to the hospital. Oxygen is therefore used in various departmental areas, such as internal medicine, surgery, gastroenterology, rehabilitation, anaesthesiology and resuscitation, radiology, clinical biochemistry, aftercare and palliative medicine. Moreover, this Prague hospital, with its detoxification centre for children and adolescents, offers medical care that is completely unique within the Czech healthcare system. Intoxication due to various drugs, such as amphetamines, can cause bronchial obstruction resulting in an oxygen deficiency. Acute care for young, drug-dependent patients includes the treatment of such hypoxia in the course of administering high-purity oxygen via oxygen masks. At the hospital, oxygen is also used for anaesthesia in operating theatres and for patient ventilation in hospital beds and intensive care beds.

The Hospital of the Sisters of Mercy of St. Borromeo in Prague treats over 200 patients. Self-generated medical oxygen is used in surgery and in the detoxification centre, to name but two examples. © Hospital of the Sisters of Mercy

The prompt and continuous availability of oxygen often makes the difference between life and death at the Hospital of the Sisters of Mercy in Prague. Ensuring the oxygen supply is therefore a top priority for management. Until recently, the oxygen was produced by generators that were not able to reliably provide the requisite purity and there were often problems with them during operation. Having bundles

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„WE ARE VERY SATISFIED WITH OUR NEW SOLUTION FOR ON-SITE OXYGEN PRODUCTION. NOT ONLY OXYGEN AVAILABILITY, BUT ALSO THE ENORMOUS COST SAVINGS OF ROUGHLY 50% WERE KEY FACTORS IN OUR INVESTMENT. INSTALLATION BY INMATEC TECHNICIANS WENT VERY SMOOTHLY AND THE GENERATOR OPERATES WITH GREAT RELIABILITY“

Radek Bartos,
Facility Manager, Hospital of the Sisters of Mercy of St. Borromeo

and cylinders supplied was evaluated in the search for alternatives. However, having the hazardous goods delivered to Prague city centre by HGV was not a real alternative – not least because of the considerable additional charges. In the end, the hospital decided to test an INMATEC oxygen generator. The system manufacturer is a global leader in the field of air separation. The system's high quality and reliability impressed the hospital operators and the IMT PO 3000 oxygen generator has since been purchased. Through this purchase, the hospital also contributes to preventing any further pollution of Prague's busy city centre and, consequently, contributes to a better CO_2 footprint for the city. The INMATEC generator is now the new main oxygen source and produces medical oxygen for all medical areas in the hospital's utility room.

To this end, air from the environment is pressed through a filter system under pressure. The dry and clean compressed air is then guided into the generator's valve block via a pressure regulator with the required pressure. From there, the air is automatically guided into two adsorption vessels in alternation. These vessels are filled with a zeolite molecular sieve and switch successively from filter mode to regeneration mode. In this way, the nitrogen and carbon dioxide molecules contained in the air are adsorbed in one vessel, while the sieve in the second vessel regenerates under compressed air relief. The oxygen obtained from this is guided into a product vessel. The filtered nitrogen is discharged via a pipe. This process of pressure swing adsorption (PSA technology) therefore ensures a continuous oxygen flow at the Prague hospital with a volume of 5 Nm^3 per hour. The medical oxygen produced by the oxygen generator has a purity of up to 95% and complies with European Pharmacopoeia regulations for medical applications. A further IMT PO 2350 generator and oxygen cylinders are available as backup. These assume responsibility for the supply in an emergency.

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The INMATEC IMT PO 3000 oxygen generator supplies the Prague hospital with medical oxygen. The operating values are measured and recorded digitally using numerous sensors. The generator can be monitored and controlled via the Touch Control Panel or remotely via a computer or tablet. © INMATEC

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