IGS Italia

Setting new market standards across the globe

AS A GLOBAL group of companies with manufacturing sites in the US, Italy and the People' Republic of China and additional sales and service centres in the Middle East, Russia, South East Asia and South Korea, IGS was founded through a MBO of four companies belonging to the Business Unit Advanced Gas Systems of the former Messer Group. Since then, IGS has developed into one of the world's major suppliers of on-site air separation plants for the production of nitrogen and oxygen, while its production facilities and numerous sales and service centres throughout the world provide the very same standards of quality and product consistency - independent of the customer's company size or geographical location. Indeed, IGS' proprietary technologies for the production of nitrogen by hollow fibre membranes (GENERON®) and for the production of nitrogen and oxygen by optimized pressure swing adsorption (PSA) processes, such as NITROSWING® and OXYSWING®, set new market standards in terms of performance and efficiency.

Located in Grosseto, Italy, IGS Italia is the group's multifunctional centre in Europe. Besides special plants which are developed and manufactured according to the material requisition and engineering standards of the customer, IGS Italia has become the group's centre of excellence for small and medium-sized standard gas generation plants. "We invested a lot in our product development, quality management system, environmental management system and internal organization during the last five years in order to strengthen our international market position," explains Oscar de Groen, Managing Director of IGS Italia.

"There are many companies in the world offering standard PSA plants for nitrogen and oxygen generation, but only a few of them manage to offer not only a competitive price but also excellent process efficiency. As operational costs can make up to 75% of the total annual costs for a non-cryogenic nitrogen or oxygen system, a low investment is often not enough to make on-site nitrogen or oxygen generation the best solution for the customer."

IGS' unique product offerings can easily be adapted to variable nitrogen or oxygen supply conditions at any time, by simply altering the number of PSA modules of the unit or by installing a parallel so-called dual-bank. This is an easy modification at the installation site which doesn't require any skilled personnel and Laura Ammiraglia, Manager Marketing & Sales of IGS Italia, comments, "This almost unlimited flexibility has caught much attention from leading gas companies."

Ammiraglia adds, "The unique modular design in combination with the high level of standardization makes the rental of our NITROSWING® and OXYSWING® a profitable and low-risk business at relatively low capital expenditures as systems can be easily adapted and exchanged with a minimum requirement for spare part logistics. Additionally, we have certified our modular OXYSWING® PSA oxygen generators as Class IIB medical devices according to the 93/42/EC directive which offers new opportunities for healthcare applications, which were unreachable for non-cryogenic oxygen systems until recently."

Besides the company's modular NITROSWING® and OXYSWING® systems, IGS Italia also offers medium-sized and large twin-tower PSA nitrogen and oxygen generators for nitrogen flow rates above 300 Nm³/h and for oxygen flow rates above 60 Nm³/h. If requested, turn-key cylinder filling systems can also be supplied for a variety of applications.

"Currently we have divided the market for our standard NITROSWING® and OXYSWING® systems with our IGS sister companies in the US and the People' Republic of China," explains Ammiraglia. "IGS' manufacturing site in Houston is servicing the NAFTA countries and our Chinese colleagues are manufacturing our systems for the Chinese market. The rest of the world is still serviced out of Italy, but we are verifying our competitive position continuously in order to guarantee the best technical and economical solution for our customers anywhere in the world."

As it is IGS Italia's policy to minimise and to continuously improve the environmental impact of all its activities, the company's environmental management system is certified to both ISO 14001:2004 and EMAS. Both utilities consumption and waste disposal are monitored and verified continuously and special attention is dedicated to the material selection for its products and services. The company's electrical energy is generated from renewable energy sources. ❑

IGS' unique FlatFlow® system
Thanks to extensive in-house CFD and FEM simulations of process flows and mechanical designs IGS Italia's engineers managed to develop the extremely compact gas distribution system FlatFlow®, which is able to turn a horizontal feed gas flow into a vertical and uniformly distributed gas flow over the entire molecular sieve bed section. Despite its limited dimensions, the FlatFlow® technology results into a superior bed utilization compared to all previous gas distribution systems. This break-through made it finally possible to develop a compact, highly efficient and truly flexible PSA generator.

"The application of multiple PSA modules for a single PSA nitrogen generator unit is not new," according to Oscar de Groen, "but the combination of our FlatFlow® technology with a new modular design developed by our technicians has resulted into our new NITROSWING® and OXYSWING® product lines, which offer the customer a simple and robust design with limited dimensions, a superior process efficiency and an unmatched system lay-out flexibility at very competitive pricing. Product safety is guaranteed by both the fatigue analysis for cyclic loads applied for our PSA tower design and the certification of our plants to the relevant European or North-American directives for pressure equipment and machineries. Manufacturing costs could be kept low through a maximum level of standardization and component sharing among all models of the NITROSWING® and OXYSWING® product lines."

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