

BOGE cuts costs for aerospace engineering firm

BOGE is saving a leading aerospace engineering and treatment company at least £18,000 a year by installing two of its high efficiency compressors.

The business operates from two locations – a precision engineering site (manufacturing high integrity, complex, aerospace components and assemblies), and a treatment site (providing non-destructive testing, surface treatments, and painting to major aerospace companies and their suppliers).

Both sites previously ran off unreliable, fixed-speed compressors (powering CNC machines at the engineering site and coatings technology at the treatment site). Keeping these operational was proving increasingly expensive and disruptive.

Each time one of the compressors broke down, the customer's former compressed air supplier would insist on carrying out repair work instead of offering a dependable, cost-effective and energy efficient alternative.

The customer invited BOGE platinum partner Airflow Compressors to look at ways to curb the huge and mounting costs of repair work. Airflow Compressors surveyed the sites free of charge. This involved using data loggers to record the performance of the system – air and power consumption – twice a second. The company could then simulate the system to work out the best energy saving combination and return on the investment.

From this exercise, Airflow Compressors identified that upgrading to variable speed drive technology in the form of a BOGE SLF 40 and C 20 F would be the optimum combination to answer the aerospace engineering company's problems.

The compact BOGE SLF 40 screw compressor offers an effective free air delivery rate of 1.30/5.31 m³/min and a maximum pressure of 8/13 bar from a 30kW main drive motor. This low carbon technology compressor features a direct-coupled drive system with frequency control to provide the ultimate machine for pressure control facing variable output requirements.

The built-in frequency converter controls motor and airtend speeds in order to produce the correct air demand requirement at precisely the required pressure. It continuously adjusts volume flow to actual demand, ensuring idling times and pressure fluctuations are minimised, evening out air demand fluctuations and maximising energy efficiency.

Meanwhile, integration of all essential components in the BOGE C 20 F does away with the need for almost all interconnecting pipes. This virtually eliminates leaks and minimises internal pressure losses. The sound-absorbing graphite casting of the C-series makes it an exceptionally quiet compressor in operation and vibration free so no further silencing is required.

The highly engineered C 20 F features free air delivery at 0.49/2.55 m³/min and a maximum pressure of 8/13 bar from a 15kW motor.

The BOGE airtend design ensures industry-leading specific power ratios (optimised output volumes at low energy consumption). Both oil separating cartridge and oil filter cartridge are easily accessible. For example, only the cover needs to be opened for maintenance. The oil sump is located at the lowest point for effective pre-separation, using gravity.

The three main strategically aligned sections of BOGE screw compressors (electrics and drive, compressor and independent cooling unit) are in the main cooling airflow for maximum efficiency and service life.

The benefits for the aerospace engineering company of switching to cutting-edge BOGE compressor technology are threefold. First, the energy savings alone equate to almost £20,000 a year over the two sites, providing a payback of less than 18 months. Secondly, the maintenance costs come down as the BOGE service intervals are every 3,000 hours (compared with the competitor's 2,000 hours), and, lastly, repair costs are eliminated because of the five-year/42,000 hour 'no quibble' warranty offered by BOGE.

The build quality of the BOGE compressors, savings and service impressed the customer in this project so much that it signed up with Airflow Compressors to an eight-year maintenance plan. This will have the benefit of offering the business peace of mind and lowering operating costs throughout the life of the compressors.

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About BOGE Compressors

BOGE Compressors Ltd is the UK Daughter Company of BOGE KOMPRESSOREN Otto Boge GmbH & Co. KG based in Germany. BOGE manufactures a comprehensive range of oil lubricated and oil free screw and piston compressors used by all sectors of industry to supply compressed air for a wide range of manufacturing processes. It also supplies a complementary range of filters, dryers and condensate management equipment. The product is sold and serviced through a dedicated network of 36 distributors throughout the UK and Ireland.

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