

CASE STUDY PHARMACEUTICAL



Ultima upgrade leads to £58,000 energy saving for Accord Healthcare

Accord Healthcare (Accord), an international leader in the development, manufacture, and distribution of pharmaceutical products, has upgraded the compressed air systems for its Fawdon site in the UK to two oil-free Ultima compressors from CompAir, with a staggering £58,000 energy saving achieved in the first year.

Application details

The upgrade is in line with Accord's environmental goals to ensuring its operations are as sustainable as possible, with a key commitment being to reduce its total energy usage and water consumption by 25 per cent by 2025 across all Accord manufacturing sites¹.

The manufacturing facility in Fawdon, Newcastle, had been completely shut down in 2015, but a new commitment to domestic pharmaceutical manufacturing meant Accord acquired and re-opened the site in 2018.

To breathe life back into the historical manufacturing facility, investment in new infrastructure and equipment was needed. A key element to building the site back up again was restoring compressed air and providing an efficient, up-to-date solution, which could also realise potential energy savings.

Accord inherited the site's previously installed compressors when acquiring the facility, and it was one of the first projects to be tackled. Most on-site machinery is driven by compressed air, including conveyor systems, control systems and valves.

Overview

▶ Customer

Accord Healthcare

▶ Location

Fawdon, Newcastle, UK

▶ Application

Compressed air for manufacturing machinery, including conveyor systems, control systems and valves

▶ Solution

Two water-cooled U75 Ultima compressors

▶ Key Benefits

Increased energy efficiency, high levels of air purity due to oil-free technology, and an energy cost saving of £58,000 in the first year since being installed

“The Ultima technology is a definite upgrade. The compressor is nicely laid out and everything works as it should. With the old systems, we'd have to perform manual checks, but with iConn I can see how the new compressors are performing at all times, no matter where I am.

Kyle Storey,
Engineering Team Lead at Accord

¹Per '000 revenue using base year 18/19 and portfolio of sites

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Key compressor considerations

Kyle Storey, Engineering Team Lead at Accord, explained: "We use compressed air for virtually everything on site. In essence, if we lost compressed air, all our heating systems would shut down and production would stop. In terms of critical utilities, compressed air is on par with electricity and water. I can't imagine the pressure that I would be under if a system was to fail."

The two inherited compressors were over-sized and old. Direct Air conducted a thorough site survey, including data logging the previous compressed air system. The data logged reported annual levels of wasted energy of 335,824 kW/h, equating to an annual cost of £27,000.

With reliable compressed air vitally important, new compressor technology was the best solution. Direct Air recommended two water-cooled U75 Ultima compressors, with a closed cooling water system and airblast cooler. The second U75 compressor would act as a stand-by machine.

The ultimate solution

A truly ground-breaking oil-free compressor, Ultima is 100 per cent oil- and silicone-free, meeting ISO 8573-1 Class Zero (2010) requirements. This makes the technology the ideal choice for pharmaceutical manufacturing environments, where air quality cannot be compromised.

Its innovative design helps drive real energy efficiencies for businesses such as Accord's. Traditional oil-free compressors are driven by a single motor using a gearbox, which – in turn – drives both the low- and high-pressure air ends. However, gearboxes require oil and create friction, resulting in energy loss. In contrast, Ultima uses two highly efficient, permanent magnetic motors that replace the traditional gearbox set-up. These variable speed motors can achieve speeds of up to 22,000 RPM and efficiencies greater than IE4, monitoring and adjusting the speed of each air end in line with demands. This ensures maximum efficiency and pressure ratios at all times.

Taking up a much smaller footprint than the previously installed compressors, Ultima also comes with iConn, a remote monitoring service providing real-time updates.

Following additional on-site improvements, such as fixing air leaks in pipework, the new compressed air system was assessed after one year's service. The achieved energy savings amounted to just under £58,000; £35,000 greater than originally expected.

"The Ultima technology is a definite upgrade," said Kyle. "The compressor is nicely laid out and everything works as it should. With the old systems, we'd have to perform manual checks, but with iConn I can see how the new compressors are performing at all times, no matter where I am."

