



# MAZIAK

## COMPRESSED AIR NEWS

www.maziak.co.uk

Newsletter, Issue 3  
MAZIAK COMPRESSOR SERVICES LTD

### Top Energy Saving Tips

- Replacing costly compressed air using open blowing nozzle applications with Low Pressure Blowers and Air Knives has good energy saving payback and reduces compressor usage and service bills.
- If LP Blowers cannot be used, replace open pipes with energy saving "venturi" type nozzles in conjunction with "magic eye" activation and pressure reduction to minimise the air used. The paybacks for this are always very good.
- Fit automated zone isolation valves to the distribution pipework to shut off areas of factory pipework unused during lower production times to reduce leaks and minimise air losses.
- Using original manufacturers' service schedules and genuine spare parts ensures compressor equipment is always running at optimum performance and best efficiency.
- Air treatment is expensive in energy terms. Ensure that a general air quality is provided across the whole site with special or critical users treated separately and locally. This will ensure the cost of air quality is minimised.

### Maziaks buys Kettering Compressed Air Services

#### KETTERING COMPRESSED AIR SERVICES LTD

Maziak Compressor Services Limited (MCSL) has purchased the assets and goodwill of the Kettering Compressed Air Services (KCAS) business from the Bulley family. This is due to the recent death of Bill Bulley who was the founder and owner of KCAS, which he formed in 1978.

In the 1970s Bill started his compressor training whilst working for Joe Maziak at Maziak Engineering Ltd in Burton Latimer. This purchase therefore brings the second generation of the families together in the guise of James and Mark.

Mark will play a key role in the merged businesses now both based in Wellingborough and there will be no



**Mark Bulley and James Maziak**

*"I am delighted to welcome Mark to Maziaks and continue a family relationship that started over 35 years ago. Maziaks looks forward to providing a first class service to KCAS' customers, now and in the future."*

**James Maziak, Managing Director**

disruption to the services received by KCAS' customers. The size and expertise of the Maziak team should in fact enhance what they have already come to expect from KCAS.

### Variable Air Demand with Constant System Pressure



The objective of a variable frequency drive within a compressor environment is to provide a cost effective solution for the customer with a varying air demand whilst maintaining a constant system pressure.

The **HPC SIGMA Frequency Control (SFC)** drive system is an evolution of the **variable speed compressor revolution** and represents the very latest advancement in variable frequency drive technology.

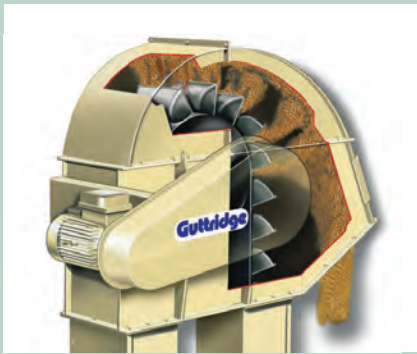
In developing these compressors, particular consideration was given to avoiding any specially designed high speed drive motors and airends. Although these may reduce the initial purchase cost they can result in severe limitations on reliability, airend efficiency and component service life.

Developed and designed specifically to complement and enhance the range of HPC energy efficient rotary screw compressors, the unit combines SIEMENS AG drive technology with the unique HPC KAESER SIGMA profile airend and SIGMA Control

system to provide outstanding performance characteristics. Large, low speed SIGMA profile airends deliver excellent performance over the whole of the controlled speed range ensuring unrivalled specific power ratings.

The efficiency of compressors that are speed-controlled by a frequency inverter is not constant over their whole range of control and if variable speed compressors are wrongly used, they can turn into power eaters without the user being aware of this. The path to maximum energy efficiency is the correct application of compressor control systems. **Applied in the correct circumstances and system configuration by Maziaks**, the selection of an SFC variable frequency drive compressor can deliver significant additional energy and cost savings.

## Maziak Energy Audit Service = Proven Savings



Guttridge are a market leader in the design and manufacture of bulk powder handling machinery such as screw conveyors, bucket elevators and bulk bag systems. These are used in the mineral,

chemical, animal feed, pet food, cereal food and pharmaceuticals industries.

Running six compressors of various sizes, all feeding a common air main, an in depth audit was performed by Maziaks during normal production. This identified that air demand was significantly lower than **Guttridge's** high overall installed compressor capacity. Wasted energy was found to be 48% of the total energy input due to high compressor off load running, and measured efficiency of the system averaged 280% higher than a realistic target of 7.0 Kw/m<sup>3</sup>/min.

Maziaks recommended a single Variable Speed Rotary Screw Compressor with integrated Compressed Air Dryer and Filters

to replace the existing six machines. Sized to meet current demand but with plenty of spare capacity for future expansion, this automatically matches its speed, capacity and power consumption to the variations in factory demand for compressed air. Wasted energy was therefore substantially reduced compared to the six existing compressors.

*"We are delighted with the result and feel that the investment was well justified, particularly as the payback time based on energy savings alone is less than 12 months and will flow to the bottom line this year."*  
**David Adams, Production Manager**

| Maziak energy audits highlighted issues and subsequent action has resulted in massive savings | Guttridge   |   |
|---|---|---|
|   | Before  | After                                     |
| Installed Capacity  | 8.0 m <sup>3</sup> per minute                       | 3.5 m <sup>3</sup> per minute             |
| Installed Kw  | 66.0  | 22.0                                      |
| Working Pressure  | 7.5 bar(g)  | 7.0 bar(g)                                |
| Wasted Energy due to "offload" running  | 48% of total energy input                           | Eliminated                                |
| Measured Efficiency   | Averaged over 20.0 kW per m <sup>3</sup> per minute | 7.36 kW per m <sup>3</sup> per minute     |
| Annual Cost of compressed air at 10p per kWh  | £23,882   | £4,753<br><b>An 80% saving of £19,129</b> |

| JO Sims                               |   |
|---------------------------------------|---|
| Before                                | After                                   |
| 6.0 m <sup>3</sup> per minute         | 2.6 m <sup>3</sup> per minute           |
| 37.0                                  | 22.0                                    |
| 7.5 bar(g)                            | 7.0 bar(g)                              |
| 62% of total energy input             | Reduced by 93% – almost eliminated      |
| 19.0 kW per m <sup>3</sup> per minute | 7.91 kW per m <sup>3</sup> per minute   |
| £13,337                               | £5,092<br><b>A 62% saving of £8,245</b> |



JO Sims is a major supplier of fresh fruit to UK multiples, leading wholesale markets, and fresh fruit processors.

JO Sims are one of the UK's leading suppliers of fruit for the fresh, processor and ingredient market sectors. Founded in the 1890s they were the first supplier to introduce cranberries in the 1960s and wild blueberries in the 1980s to the UK market.

They were running an oversized compressor and following a Maziak energy audit undertaken at peak production time, similar to Guttridge,

it was recommended that the customer install a Variable Speed Rotary Screw Compressor with Integral Compressed Air Dryer and Filters. This compressor can accommodate the variations in **JO Sims'** factory demand for compressed air and substantially reduced the amount of wasted energy compared to the existing compressor.

Further savings are possible for both **Guttridge** and **JO Sims** due to a manufacturer 5 year warranty, the lower service cost of the new compressor and removal of the need to repair the ageing existing compressor systems.

**JO Sims** can also turn off the compressor at night – manually or automatically via the compressor controller time clock feature.

*"Following an energy audit by Maziaks, we installed a variable speed compressor which has improved the stability and quality of the air output. It has also provided substantial energy savings which have now been further improved following additional advice from Maziaks' service team."*  
**Don Fletcher-Smith, Site Manager**

## Compressed Air Quality in Focus

Many industries have minimum air quality standards and associated regulations.

| Air Use         | Breathable                      | Food Industry                                  | Pharmaceutical                                 | Hospital               | Dental     |
|-----------------|---------------------------------|--|--|------------------------|------------|
| <b>Standard</b> | BS4275:1997<br>BSEN12021:1999   | ISO8573.1:2001                                 | FDA/MCA Standards                              | HTM 2022               | HTM 2022/1 |
| <b>Examples</b> | Shop blast, Spray booth, Diving | High risk, Low risk, Packaging, HACCP analysis | Packaging, Manufacturing, Coating, Micronising | Surgical, Non-surgical | Surgical   |

These regulations require regular certificated testing and servicing by an **independent competent body such as Maziaks**. It is the users' responsibility to put this in place and ensure certification is available for inspection by auditors if ever required. Maziaks use the most up-to-date monitoring and sampling technology and **tests can be carried out with no disruption to production**. The following table highlights the **benefits to undertaking an air analysis survey**.

| Why test your air quality?  | How do we do it?   | What can we test for?  |
|---|--|--|
| <ul style="list-style-type: none"> <li>Assist in compliance with relevant legislation</li> <li>Certification and traceability</li> <li>Inclusion within total quality management</li> <li>Proactive testing identifies potential future problems – prevention of deterioration in quality is better than curing a problem</li> <li>Identify dryer/filtration efficiency – this varies due to plant service life/history, seasonal changes and ambient conditions</li> <li>Air quality at point of use will vary from point of generation</li> </ul> | <ul style="list-style-type: none"> <li>Most up-to-date monitoring and sampling technology</li> <li>All monitoring equipment tested, calibrated and validated</li> <li>Multiple points can be tested in one day</li> <li>Tests during normal working hours</li> <li>Provide full analysis and results report/certification</li> </ul> | <ul style="list-style-type: none"> <li>Pressure</li> <li>Temperature</li> <li>Moisture carryover as pressure dewpoint</li> <li>Oil carryover in mg Oil/m<sup>3</sup> (and odour)</li> <li>O<sub>2</sub> %</li> <li>CO<sub>2</sub> traces as ppm</li> <li>CO traces as ppm</li> <li>Particulates</li> </ul> |

## RENTAL of New and Used Compressor Equipment

Maziaks can provide you with a complete solution, whatever your reasons for renting air compressor equipment. Whether it is simply a **temporary operational requirement or the need for flexibility**, we deliver, install and maintain the machines. There are many benefits to renting equipment, not least:

- Rental payments are fully tax deductible as a direct business expense and you know exactly what your regular payments will be for the length of the term.
- You do not bear the risk that, when you have finished with the asset, its value has decreased below the amount you paid for it.
- The asset can often be replaced by a newer one, by upgrading at little or no extra cost. This ensures you have the latest, most reliable and most energy efficient equipment.
- Including maintenance into the rental enables smooth cash flow forecasting and accurate budgeting.

**NEW and USED Rental:**

- Electrically driven static, fixed and variable speed air compressor packages available.
- Diesel mobile air compressor plants from 60cfm up to 1000cfm. Oil lubricated and oil free, complete with desiccant dryers if required.

We offer a 24/7 emergency rental service subject to contract type and contracts can be short or long term — **from 1 week up to 10 years.**



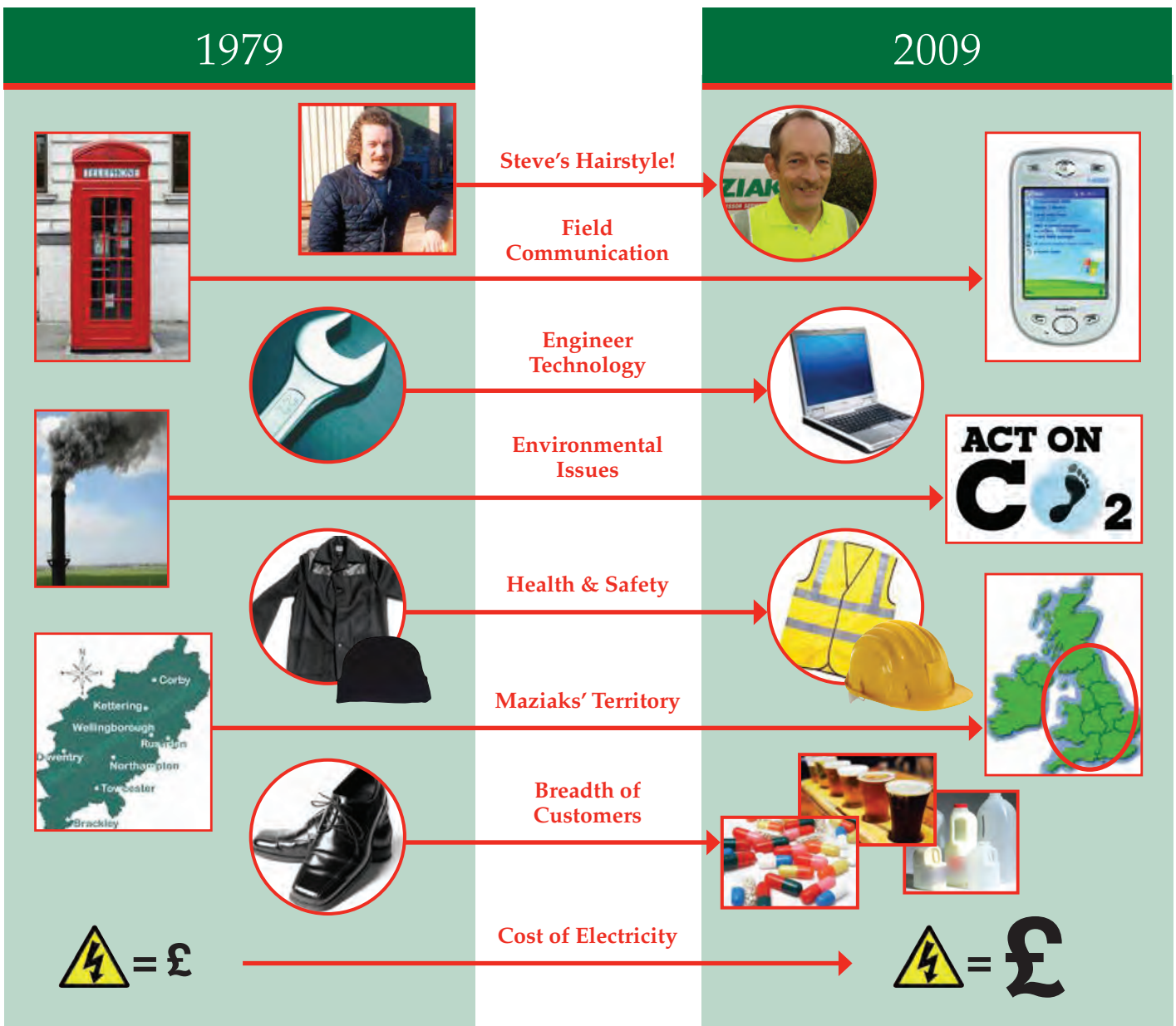
## Maziak Engineer Celebrates 30 Years' Service

**Steve Craig joined Maziaks** 30 years ago as a Compressor Service Engineer following a 12 year career as 2nd Engineer Officer in the Merchant Navy. In those days Maziaks' core business was the leather trade, plus they had a small compressor division. Steve didn't need a lot of retraining as he'd worked on a lot of air compressor and refrigerant equipment whilst at sea.

With Steve's experience and longevity of service he plays a key part in training apprentice engineers and has developed strong relationships both within the company and with longstanding customers. He sees himself at Maziaks for many years to come.

Since Steve joined Maziaks in 1979 many things have changed in the industry!

*"I'm still here because I love the variety of work at Maziaks which takes me to all sorts of clients, all over the country. I've always been interested in computers and electronic gismos so I've enjoyed the introduction of new technologies such as variable speed compressors and control systems. Maziaks also has a strong and positive culture with good lines of communication which helps make it a very professional company to work for."*  
**Steve Craig**



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