Customer Testimonial

Multilec® Industrial Oil (6802)

Fletcher Aluminium – Auckland, New Zealand

Atlas Copco Rotary Screw Air Compressors (GA 30 & GA 230)

- **Saved total of NZ$1,676.80 per year in reduced energy costs**
- **Extended oil change intervals by 12,000-14,000 hours, from 2,000 hours to new average of 14,000-16,000 hours**
- **Reduced operating temperatures**
- **Reduced maintenance costs, leading to less downtime**

Client Profile

An LE customer since 1980, Fletcher Aluminium is one of the businesses that form the Fletcher Building Group, a building material manufacturer based in New Zealand and Australia. Fletcher Aluminium designs, develops and manufactures premium aluminium extrusions for an extensive range of industries, including windows and doors, commercial systems and private supply.

Application

Three Atlas Copco Rotary Screw air compressors used at the Fletcher plant in Auckland, New Zealand, supply air for the extrusion process. A new GA37 VSD leads air demand, while the older 30-kW GA 30 and GA 230 models run as required. The two older air compressors hold 15 litres of oil each.

Challenge

The two older compressors have relatively high total running hours (approximately 94,000 hours for the GA 30 and 67,000 hours for the GA 230). Per year, the GA 30 model is used approximately 4,000 hours, while the GA 230 runs approximately 1,000 hours.

Chief Engineer Phillip Hodgson wanted to keep these two older air compressors running as long as possible and was interested in the overall energy savings that Lubrication Engineers could help him achieve.

LE Solution

Hodgson had the two older air compressors filled with Multilec Industrial Oil (6802), an ISO VG 46 oil.

Results – Energy Savings

To track results, the company took amperage measurements before and after the conversion to the new oil, and then used the formula shown below to calculate energy savings. In energy savings alone, converting to Multilec 6802 for GA 30 and GA 230 will save the company a total of NZ$1,676.80 (NZ$1,369.60 for GA 30 and NZ$307.20 for GA 230). Based upon cost savings and annual hours of operation, the LE oil will pay for itself in six months for the GA 30 and in 30 months for the GA 230. Other benefits, including extended oil change intervals and decreased maintenance, will result in additional savings.

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Savings Formula

- .Volts x Amperage Reduction x 1.73* = kW Savings
- kW Savings x Hours of Operation per Year = kWh Savings per Year
- kWh Savings per Year x Price per kW = Energy Savings per Year

*Conversion factor for a three-phase power source

Atlas Copco GA 30 Compressor

- Average over three phases before conversion 63.3 amps
- Average over three phases after conversion 60.3 amps
- Energy reduction 3 amps (4.74%)

Savings Formula for GA 30

- .412 x 3 x 1.73 = 2.14
- 2.14 x 4,000 = 8,560
- 8,560 x 0.16 = $ 1,369.60

Atlas Copco GA 230 Compressor

- Average over three phases before conversion 59.3 amps
- Average over three phases after conversion 56.6 amps
- Energy reduction 2.7 amps (4.56%)

Savings Formula for GA 230

- .412 x 2.7 x 1.73 = 1.92
- 1.92 x 1,000 = 1,920
- 1920 x 0.16 = $ 307.20

Results – Additional Benefits

- Extended oil change intervals by 12,000-14,000 hours, from 2,000 hours to new average of 14,000-16,000 hours
- Decreased waste oil and associated disposal costs
- Reduced service hours
- Reduced operating temperatures
- Extended oil separator life
- Reduced maintenance costs, leading to less downtime

Other LE Products Used

- WireLife® Almasol® Coating Grease (452) – Used on chains and slides throughout the site.
- Almasol® High Temperature Grease (1250) – Used on high temperature bearings on the extruder and powder coating line.
- Synolec® Lubricant (9963) Used on the powder coating chain.

Thank you to Phillip Hodgson for his assistance with this report, to Chris Unsworth (pictured) for supplying the information for this report, and to Fletcher Aluminium for the company's long-standing relationship with Lubrication Engineers NZ Ltd.

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