

CASE **STUDY**

HAYLEY DEXIS

**RESOLVES COMPLEX
EXTRUDER GEARBOX
ISSUES AND SECURES
ENERGY SAVINGS
FOR PLASTIC PIPE
MANUFACTURER**

CS125



HAYLEY DEXIS DRIVES // PLASTICS

Focus on **value**

TRACK UP

THE SITUATION

A global manufacturer of plastic piping was experiencing a number of recurring issues with their critical extrusion processes. The screw being driven by the extruder gearbox had broken on a number of occasions, causing production stoppages. Several gearbox failures had also happened, costing up to £30,000 each time to replace with considerable lead times (3-4 weeks) associated with these units.

As a registered MRO supplier for the customer, HAYLEY DEXIS had already resolved the issues in one gearbox, and was now invited to look at seven further gearboxes on-site.

THE SOLUTION

The original gearboxes in question were 30kW Nord units, all operating at 140rpm. The customer needed to reduce the speed to 40rpm, and had previously attempted to do this with an inverter. However, the inverter was set at 13hz and was causing serious heat build-up at the core of the motor, resulting in frequent burn outs and breakdowns.

The challenge was to get down to the 40rpm speed with limited space of the design envelope of the gear reducer. Increasing the ratio to the maximum allowable within the same frame size of reducer allowed for the frequency to be increased to 33Hz. This vastly improved the cooling effect of the motor, with the increase

KEY VALUE AREAS



SPEND



INCOME

in ratio improving output torque and enabling the motor size to be reduced to 11kW.

Upon completion, the system was refilled with new oil and production restarted.

THE RESULT

Thanks to the technical expertise of the team involved with the project, a solution was arrived at that has halted costly mechanical failures as a result. In terms of time savings, each failure would previously have involved a 3-4 hour replacement process and a 3-4 day repair turnaround (if viable), or a 3-4 week leadtime on a new gearbox. The downtime costs associated with these durations is now no longer a concern for the maintenance team.

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**REDUCING THE POWER
OF THE GEARBOXES
HAS ENABLED THE
CUSTOMER TO REDUCE
ELECTRICITY COSTS BY
£209,869 PER ANNUM.**

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Reducing the power of the gearboxes has enabled the customer to reduce electricity costs by £209,869.66 per annum, enabling a payback period of <1 month. This calculation is based on a generous negotiated cost of 22p per kWh that the customer currently has in-place.

As a result of the ongoing benefits that HAYLEY DEXIS has enabled the customer to achieve, HAYLEY DEXIS has been invited to replicate the process again with four additional gearboxes on site. This is estimated to save the customer a further £119,926 per year on their energy costs.

CONTACT US!

Speak to your local HAYLEY DEXIS branch today!

You can find their details by using our online Branch Finder tool:

www.hayley-group.co.uk/branch-finder.

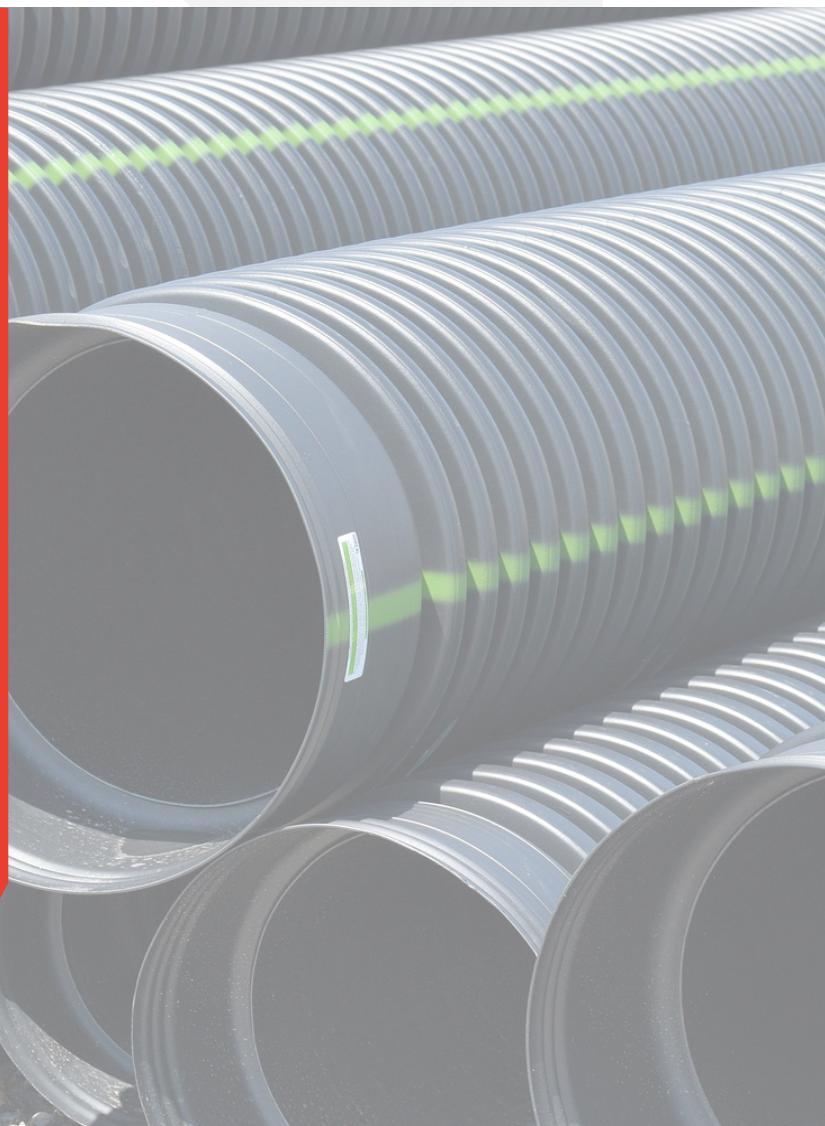
KEY RESULTS

Almost £210k in yearly cost-savings achieved so far.

Additional annual cost-saving of nearly £120k to be achieved when job is replicated on further gearboxes.

Downtime costs associated with gearbox failures eliminated.

Annual CO2 emissions reduced by 184,478kgs.





HAYLEY

DEXIS