

Automating fibreglass insulation CUTTING

More than three decades after his father founded the company, John Petrou is continuing the Brisbane-based Apex Insulation success story and recently invested in automation equipment to boost the shop's productivity.

BY BARBARA SCHULZ
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Founded in 1983, Apex Insulation has been working with sheetmetal shops in the airconditioning and ducting industry, fitting insulation material to duct units and other HVAC construction equipment.

While the company has continually broadened its customer base, factory manager and owner John Petrou realised it was time to speed up production and increase the shop's efficiency by reducing the amount of manual labour involved in cutting the fibreglass insulation material to size. While fibreglass is a good insulation material, it can be messy and frustrating to cut straight. As a result, Mr Petrou says, he was not only facing drawbacks in productivity, but his staff was often not motivated enough and the number of days workers were absent from work increased.

"The main problem for us was production speed," he explains. "Before we invested in automation equipment, everything was 100% cut by hand. We used to use a long metal angle, measure the material up, cut notches and then use a knife to cut the insulation material to size. We have a circular saw to cut material straight as well, but it is really basic."

Since there are not too many automated systems dedicated to manufacturing duct board, fibreglass and other insulation material used in the HVAC&R industry in the market,

Mr Petrou was initially looking at investing in a waterjet cutter, but then came across ART's XR5000 CNC router with additional features designed to suit all applications within the heating, ventilation, air conditioning and refrigeration (HVAC&R) industry.

By adding a fourth axis to its SMART Router series, ART transformed a once very messy job into a clean, automated process, and the benefits of this advanced, automated production machine are quite compelling at all levels.

The machine cuts at 50m/min and saves money across the board. The intelligent nesting software helps to cut waste by up to 30% and manual labour even more. Additionally, the router is equipped with a Sick safety laser scanner for non-contact monitoring of a freely programmable area around the machine to ensure maximum safety for the operators.

In the past there were two or three people operating the sawing equipment and cutting material manually at Apex Insulation, while today it can be done by using only one operator, although most staff are trained to operate the user-friendly machine.

"With the ART CNC router, the biggest benefit for us is in fittings, cutting radius bends of duct for instance," Mr Petrou says. "Before, we used to lift the duct onto the table



"We are much more productive and efficient than last year!" Brisbane-based Apex Insulation's John Petrou says. "Compared to manual labour, the machine is three times faster, more accurate, and there is less room for error. Moreover, the machine doesn't take days off!

and then use the duct as a template. The disadvantage was that we had to wait until the duct got here before we could cut it. Now, with our new ART XR5000 router, our customers just send us a job sheet, we enter the data in the machine's software and have it pre-cut. This way we can build stock up when we are not busy."

"Before we had the machine, you had to have pretty skilled staff who are good at maths etc. to cut the material manually to fit the duct," he continues. "Now, the software does all that which is great because it is hard to find motivated people; now, pretty much anyone can operate the machine, and our staff love it!"

While Apex Insulation predominantly cuts fibreglass insulation with a reciprocating knife on the machine, the additional fourth axis on the CNC router offers many special tools designed for insulation material and duct board cut-

ting including variable angled knives or steered pizza cutter wheels for creasing and cutting a variety of materials including insulated duct board, fibreglass and polyester insulation, fabric & textiles, plastic & rubber timber or aluminium.

The machine's versatility inspired Mr Petrou to consider tapping into other markets such as insulated duct board cutting. "Now that we have the machine we are looking at expanding into duct board which is a lot lighter than sheet-metal and has the insulation incorporated in it. We can use the machine to cut out the V-notches, and put the duct parts together easily."

Moreover, Mr Petrou appreciates the service and support from local manufacturer ART, which many other machine manufacturers cannot offer. "With the other machine I was initially looking at, there was no local support while with

ART you get all the local support you need. The machine was installed in mid-February and Nigel from ART came here four or five times for training and to set up the machine and software."

The ART team helped to set up the software Apex Insulation is using, CAMduct, to tailor it to their needs. "Once it is set up, the entry of the data is basic as can be, anyone can do it. ART also helped us to create a database with most of our standard parts and shapes."

"We are much more productive and efficient than last year!" Mr Petrou concludes. "Compared to manual labour, the machine is three times faster, more accurate, and there is less

room for error. Moreover, the machine doesn't take days off! The investment will pay off in the end and the machine is going to make our lives easier. We are also going to move into ductboard fabrication, which gives us additional business we never had before, which will be a big plus."



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