ensitech TIG Talk
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The TIG Brush story

Meet the minds behind the TIG Brush: Clive White and Frank Fornasari

Like many a great invention, the TIG Brush began with a technical challenge, a chance encounter and a lot of late nights experimenting in a home garage.

Fast-forward a few short years and the TIG Brush is now the flagship product of Ensitech, a fast-growing manufacturing company that's changing the way the stainless steel industry does business.

The TIG Brush produces a low-voltage, high-current electrical output through a conductive brush which, used at high temperature in conjunction with specific cleaning liquids, removes the iron-based oxides from stainless steel welds and leaves the surface free from ferric ions and oxides.

The initial challenge came from a local manufacturer with a contract to produce stainless steel products for McDonalds. He needed a fast, safe and effective way to clean the stainless steel welds and give the product a high-quality finish.

Using pickling paste – the highly toxic compound traditionally used for this task – wasn't an option when manufacturing for the food service industry, but existing alternatives (such as electro-chemical weld cleaning machines) simply didn't produce sufficiently high-quality results.

Was it possible to build a machine that would do the job better?

Enter Frank Fornasari and Clive White. Through a series of chance conversations, these two engineers, with no prior experience of the stainless steel industry but a passion for solving engineering problems, were challenged to design a safe stainless steel cleaning system that would outperform existing units.

That's where the late nights began. For three years from 2002 to 2005, Frank and Clive spent every spare waking hour devising, testing and refining a unit that would consistently produce the required results. What began as a hobby project soon became an obsession, as they brought their very different skills and experience to the task.

Between them, they knew a thing or two about designing and making products to exacting standards.

Frank's earlier 12-year career in aeronautical engineering at Hawker De Havilland had seen him design measurement equipment that travelled on the Space Shuttle. More recently, as an independent product design and drafting specialist, he had worked on products as varied as operating tables, EFTPOS terminals, railway indicator boards and Toohey's beer temperature displays.

Clive, on the other hand, had behind him many years as an electrical engineer working in sales for Motorola, and as an applications engineer developing software for on-board automotive systems, telecommunications and remuneration systems. He is a listed patent-holder in the design of the first electronic electricity meters used in Australia, and in an earlier joint venture with Motorola distributor Veltek, he developed and marketed hi-tech products such as supermarket entry/egress and access control systems.

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So what exactly was it that drove two engineers with such backgrounds to develop the TIG Brush for an industry they previously knew nothing about?

"As a software engineer," says Clive, "I had always been aware of the huge gap between the products I was developing and the much greater commercial value that the business realised out of this expertise. This was an opportunity to get involved in the challenge of building an entire product from the ground up and taking it all the way to market."

Frank echoes this: "Working on a product of our own, with clear commercial potential in a market where safety is an increasing priority, presented different challenges and opportunities from working on contract design."

The two were also attracted by the elegant and unique combination of electrical engineering, chemistry and product design disciplines that went into the TIG Brush.

As early as 2004, it became clear that there was a wider market demand for the TIG Brush, and Ensitech the business was born. The choice of name ("ensi" is Finnish for "first") speaks volumes for the inventors' confidence in their product. But there was still a long way to go before it was ready for sale.

Extensive research and development work throughout 2005 married electrical engineering, product design and chemistry to create successive versions of a machine that was tested and refined into a fully-fledged prototype.

Incorporating Ensitech Pty Ltd in 2006, the inventors went on to produce and sell 10 early prototype machines, and follow their progress through field trials in the hands of stainless steel manufacturers. Throughout this time, they were building around themselves a team of experts in key areas such as marketing and finance as well as an industrial chemist to develop unique cleaning solutions.

It was really only as they progressed with the field trials and gathered feedback from early users that they began to learn more and more about the hazards presented by pickling paste, and the lack of truly viable alternatives.

"That was when the light went on for us and we realised we were actually in the safety business," says Frank. "We had a product to offer the stainless steel industry that could not only do a better job of cleaning welded surfaces, but could also liberate them from some seriously scary OHS risks."

By early 2008, Ensitech faced the classic challenge facing many a start-up. After almost six years of R&D, and with successful field trials under their belts, they had a product that finally was ready for full-scale commercialisation, but had to figure out how to go the last mile to achieve production and distribution.

By surrounding themselves with experienced business advisers and a multi-skilled team, Clive and Frank had built a product around a unique blend of electrical engineering principles, chemistry technology and product design. But where to from here?

It had become clear to them the kind of company they really wanted Ensitech to be: a company devoted to designing and developing innovative, high-tech solutions to challenging industrial tasks.

It was clearly time to commercialise the TIG Brush, but getting over the first hurdle was the hardest. Having sunk as many personal resources as they could into the product's development, they had just enough parts inventory to manufacture and sell a batch of 18 units and recoup more or less their cash outlay up to that point. If that could be achieved they had a business; if it couldn't, the TIG Brush might become nothing more than an interesting experiment.

In a bold play, the pair decided to go for maximum exposure and invested every last development dollar into taking a stand at National Manufacturing Week 2008 in Sydney.

It was at NMW08 that what is now known as "the TIG Brush effect" was born. Seeing is believing, and with more than 200 visitors to the stand seeing for themselves just how safe, effective and easy to use the TIG Brush is, word started to spread. Distributors soon jumped on board and, in the following five months Ensitech sold not 18 but 100 TIG Brush units. And by the start of 2009 it was time to move out of the home garage and into a custom-designed factory and office space.

Now, in late 2009, there are TIG Brush users in every state of Australia as well as New Zealand, and in a wide range of industries. The great feedback Ensitech has received from users is being channelled into ongoing product refinements and new product development to expand the TIG Brush product range.

Already new, improved cleaning solutions have been introduced and several new innovations are at various stages of development.

"It's been an exciting journey," says Clive, reflecting on the first few years of Ensitech's life. "Our dogged persistence is paying off, and we have a real sense of focus on the growing TIG Brush product family and the growing Ensitech family."

"We're thankful for the advice we received early on," Frank adds, "to establish tight financial discipline and strong systems beyond those found in most small start-ups. Having those things in place from the outset are certainly making growth easier."

Ensitech must be doing something right. It is proud to have been named this month as winner of the St George Best Start Up Business category in the 2009 ActionCOACH My Business awards.

mybusiness awards '09 ActionCOACH WINNER

In October 2009 Ensitech was announced as the **Winner of the St George Best Start Up Business Award in** the 2009 ActionCOAH My Business awards.

Ensitech was one of three finalists in its category and 30 finalists overall, selected from a field of almost 500 nominations.

The Award recognises "the entrepreneurial energies of businesses which have shown strong growth and ingenuity" in building a business established within the previous four years.

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