

BS&B: A History De

BS&B has been playing a leadership role in the development and design of rupture disk devices, specialty relief valves, flame arresters, pressure/vacuum vents, separators, dehydrators, heaters, treaters and many other key products for process industry operations beginning with the dawn of the modern energy industry. With a commitment to innovative engineering, BS&B has maintained longevity in the industry, by playing a huge role in the growth of process safety technologies and has maintained its success with continuous efforts in research and development.

Valve World Americas connected with BS&B's Global Manager – Specialty Valves Joe Kelly, Manager - Marketing Services & Communications Keith Davenport and Geof Brazier, Director of Development, who gave an insight into the reasons behind the company's successful history, continuous technological developments and future objectives.

By Deirdre Morgan & Sarah Bradley

When A.H. Black discovered a safer way to store oil in fabricated oil storage tanks and partnered with Jim Sivalls and W.G. Bryson the name BS&B was established. BS&B is a recognized pioneer in the oil and gas industry for its contribution to developing safety equipment, such as the invention of the rupture disk in 1931, and has continued to make further developments in process safety, such as specialty relief valves and the BS&B FlameSaf product line. Over the years they have become a solutions provider for their customers by continuously creating custom engineered products to serve even the most challenging client concerns and by placing their core values in high regard; innovation, reliance, excellence and respect.

"Our primary core value is innovation," says Joe Kelly, Global Manager of Specialty Valves. "From a company point of view, we reinvest into research and development continuously. We are not a company that produces something and then sits back and repeatedly produces that same thing – we are continuously trying to improve. As a company we tend to take on the opportunities that nobody else wants, and to help our clients deal with some of their biggest challenges. This strength has really helped us to drive the company to the next level."

Through its dedication to customization and continuance in research and development, BS&B has grown worldwide and has expanded in the global industrial hubs located within North America, South America, Europe, the Middle East and Asia. Due to this, their products are present in every industry that produces the material items used by people all over the world on a daily basis. BS&B technology can be found in transportation systems, food and beverage industries, aerospace systems, chemical and pharmaceutical processes, and bio-processing among many others.

"The importance of investing in research is the value of finding new products that benefit the customer," explains Manager – Marketing Services & Communications, Keith Davenport. "We need to continue to grow our capabilities to meet the customers' needs. Part of our culture is that we have many customers all over the world and if the customer asks for something, and it is not in our current portfolio, we don't just say no. We have a culture of engaging with our customers and whatever it is they might need help with, we are willing to do the work effectively for a fair reward. They know that we are going to really look into whatever it is they need, and develop a solution that is going to benefit them."

BS&B's employees have a high skill-set and a vast knowledge of the company's products, which in turn has enabled them to build a large, global customer base. The company strives to communicate clear and concise information to the customer and to effectively meet the customer's needs. As Keith mentions, many customers nowadays search websites and brochures for answers to their problems, yet, "there is only a certain amount of information you can put on a website before it gets confusing."



BS&B facilities for cryogenic testing of valves in liquid nitrogen at -324°F



BPRV™ installed as inline bypass to staging valve on a gas flare system

"What we want to do is make sure that we have people ready and willing when customers make that phone call or send us an email. We can help the customer and guide them through the complete requirements that they need, embracing all of the key global Codes & Standards for pressure relief technology" says Keith. "We have a lot of technical experts who put together FAQs for pretty much every problem that has come up. However, knowing a lot of engineers, before they make that phone call they want to be supplied with as much information as possible. So, we supply them with web site access to a ready-made solution and customize it as the need arises. That is just one area in which we try to assist people. We make sure that we give them the right information and they trust us to provide them with the best solutions to their problem – typically more than one solution."

An Unrivaled Range of Rupture Disk Devices

While BS&B developed the first ever rupture disk in 1931 as a means of overpressure protection, it did not stop them from



BS&B High Volume, Set Pressure Testing Facility

continually improving the product for various industries. Rupture disks are non-re-closing, pressure relief devices that activate at a specified pressure and temperature. As well as being available in a variety of material options, rupture disks are available for flanged piping applications in a variety of sizes. The rupture disk has grown and developed into many forms, including the reverse buckling disk, forward acting rupture disks and graphite bursting disks.

"Rupture disks are a big part of our business", explains Joe. "When a rupture disk opens, the customer has to open the pipe, take it out and replace it. They have certain downtime associated with that activity, with that particular application. Many of our customers came to us asking us to make a re-closable rupture disk. Instead of telling them that we can't really create exactly what they are envisioning, we try to create a reasonable solution. That is how we created our buckling pin valve product line. We listen to our customers, take their needs into consideration and then focus on providing them with the best solution we can. Again, it comes back to research and development and the importance of



The largest ASME certified Bucking Pin Device in the world - 60" BPRV

efined by Innovation



focusing on innovation and technology.”

BS&B places a huge emphasis on being the first to develop something significant in a competitive industry. When no existing technology can fully satisfy a customer or industry requirement, BS&B takes the initiative and creates something tailored to meet those requirements. In doing so, they create a global standard and they continuously uphold their reputation by establishing themselves as being customer driven.

Specialty Valves and Value

With their focus on customer needs, BS&B create specialty valves, known as buckling pin valves, which are fast acting / quick opening pressure relief devices that offer easy field reset after activation. They are designed to protect personnel, equipment and the environment from the dangers of overpressure. Buckling pin pressure relief devices combine the accuracy of rupture disks with the ability to be field-reset, while remaining installed after an overpressure event. After activation, the valve is manually reclosed and the pin replaced, therefore dramatically reducing plant downtime. As Director of Development, Geof Brazier explains, BS&B's success is due to the reliability and longevity of their products, as well as their emphasis on “value”.

“Our way of staying on top is to be very value oriented,” reveals Geof. “Our products last longer which is a very simple way in which the economics of ownership become very attractive. We are a company that has products that would be very durable workhorses of technology, but at the same time it is not out of the reach of somebody's budget. There is almost always disappointment down the line when equipment doesn't last long enough. With valve technology people are paying for the amount of flow they can get for the dol-

lars invested. Our valve technology is the best in terms of giving the most flow for amount of money invested in a safety device.”

Combustion Safety with FlameSaf™

Value is not the only focus of BS&B, as combustion safety is also an inspiring factor for their industrial developments. BS&B FlameSaf, is a safety company dedicated to protecting the environment, industrial plants and personnel from the dangers of flame propagation. It is a signifier of the importance BS&B places on safety and their innovative solutions for personal protections against dangerous over pressurizations and explosions within industrial settings. BS&B has a vast range of products and services that have all been certified though internationally recognized certification agencies (DNV, BAM, IBExU, PTB) as per the EC Directive 94/9/EC and awarded the CE mark of conformity. They manufacture flame arresters, detonation arresters and pressure/vacuum vents, all of which contribute to the prevention of flame and accelerated explosive combustion in industrial low pressure piping systems carrying volatile gases and vapors, or limit their escape into the atmosphere. Flame arrester and explosion limiting detonation arresters permit normal flow within low pressure gas and vapor piping systems but quench combustion impinging upon their arrester elements whose arrangement presents a ‘flame gap’ through which combustion will not pass.

“The flame arrester and tank vent technology is totally focused at close to atmospheric pressure systems that are predominantly in the oil and gas sector. The designs that we have would fall into categories of dealing with the prevention of flame that may accelerate through the pipeline below the speed of sound or, worst-case, above the speed of sound with much higher destructive force,” explains Geof.

He continues on to highlight, again, BS&B's innovative focus; “The most unique thing that we have recently done is to combine a flame arrester and a low pressure tank venting device. In the U.S., in particular, it has been a tradition to buy a flame arres-

Buckling Pin Relief Valve Manufacturing Facility

tor to take care of the combustion problem. Then, one would buy a tank vent to take care of pressure increases during the daytime when it gets hot, and letting air into a storage tank at night when it gets cold. People have tended to use two separate items installed adjacent to each other. We have created a combination device where the tank vent and a flame arrester are integrated in a single housing. This is very efficient from a physical size and weight standpoint. It is very important to a lot of the storage tanks which are being protected by this technology, as they are lightweight, metal constructions and you just can't put something on there that weighs 250 pounds. This integral unit has the ability to cut 30% or 40% of the weight by having one single component instead of two separate devices. That is the biggest leap forward currently taking place, from a technology standpoint, in that direction.”

Dedication to Continuing Innovation and Development

While BS&B is the leading trendsetter in a competitive industry, and has been for many years, that does not prevent them from continuously aiming for bigger and better achievements. Although BS&B is aware of the challenges they face in a competitive industry, they are dedicated to improving existing products and continuously creating new ones, with new creations planned to be released before the end of the year.

“We are trying to come up with new ideas before everybody else does,” says Joe. “The oil and gas industry has been really difficult in the last 18 months and we know that the customer wants to get more out of what they already have – out of their existing infrastructure – without having to do any major investments, so there has been a capital investment slow-down in the oil and gas sector. There is a technology called Enhanced Oil Recovery (EOR), which assists in getting more oil out of the more depleted wells. So, we decided to make an enhanced oil recovery valve, which is just one of our new products. This is something we brought to the market to help our customers be able to inject at higher pressures and safely get more oil out of their existing oil fields.”

Keith further outlines BS&B's future goals by explaining that “technology is going to change and different markets are going to emerge. We want to make sure that we

are there researching a new technology and new markets, and finding ways that we can best utilize our products to fit the needs of the engineers who are building the great things of tomorrow.”



BPAV™ - Unparalleled capacity, allowing customer to optimize by reducing a line size



EORV™ - Set pressure up to 25,000 psig, allowing the oil industry to produce more from a depleted well



Flame Arrester and PVRV combination - Combining two products

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