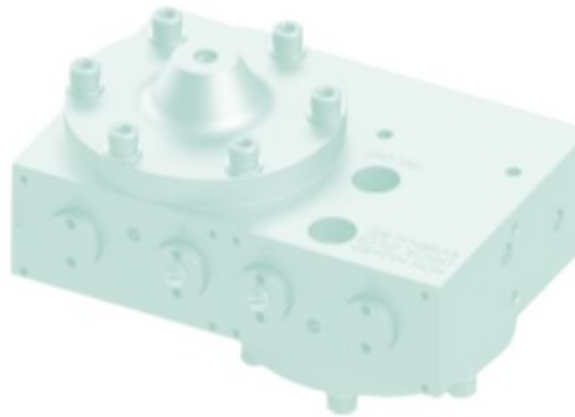


Catalogue 2019 / 2020

Short Form



Mix Well, Choose BSL!



www.bslgastech.com

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BSL Gas Technologies Ltd

Why choose BSL?

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WHY CHOOSE BSL?

BSL has been delivering solutions to the industrial gases community worldwide for 30 years. If you are using, delivering, generating or installing mixed gas systems, we will have an excellent solution for you. If you can't find exactly what you are looking for, we will design and build it for you using our core products and engineering know how.

We have equipment of Gas Mixing Valves, Gas Flow Control Valves, Gas Mixing Panels and systems, Gas Analysis, Gas Filtration and Gas Safety and Gas Management Systems.

We also manufacture customer specific and branded designs. Thus making the equipment more personal to your company. We provide Equipment Refurbishment programs too which we tailor to suit what you want and need. If you need spare parts, we sell components from our own stocks for quick deliveries. We source the components from good quality companies and do quality assurance checks as well. Since we are buying them ourselves, we have an excellent number of sources. We offer other services such as calibration, servicing and re-certification of equipment.

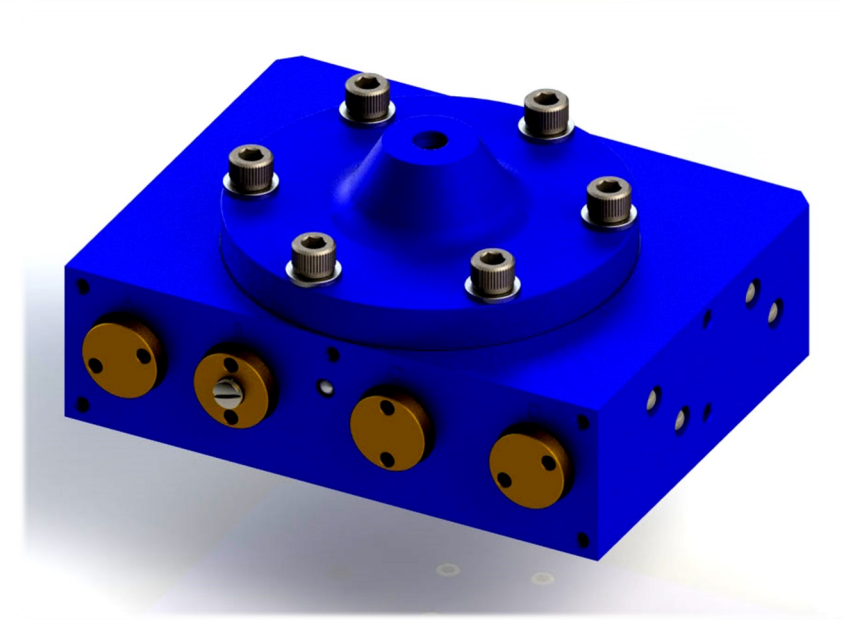
We are a UK based company but can usually deliver to every major country in the world. Our equipment is extremely hard-wearing and reliable and needs little attention once installed. Our Gas Mixing Panels will work in temperatures between -10°C (14°F) and $+50^{\circ}\text{C}$ ($+122^{\circ}\text{F}$) so they will have no problems working in most climates.

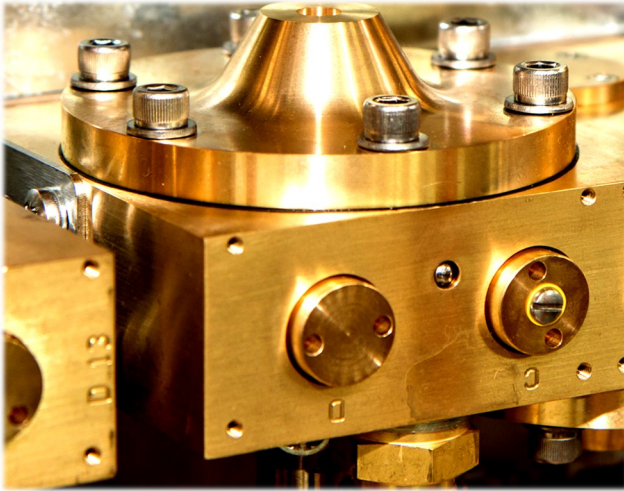
Gas Blenders



Advantages of our Gas Blenders

- 2 or 3 gas variations
- Pre-set or adjustable versions
- Very reliable
- Extremely hard wearing

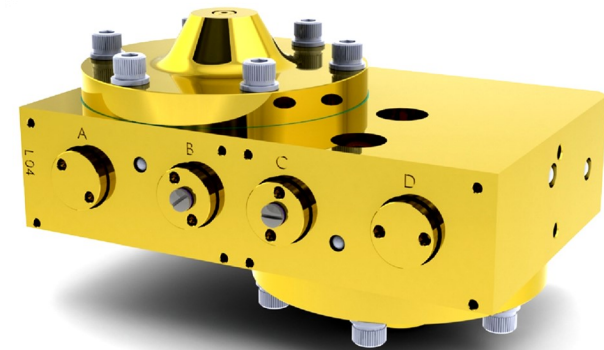




We have a great range of Gas Mixing Valves and Gas Blenders to suit almost every demand. Since we patented the first Gas Mixing Valve back in 1990, we have been able to tailor this clever design for different gases and flows and we now have 2 gas and 3 gas versions in either pre-set or adjustable ratios.

By placing our Gas Blenders together we can provide you with higher flows for all sorts of applications.

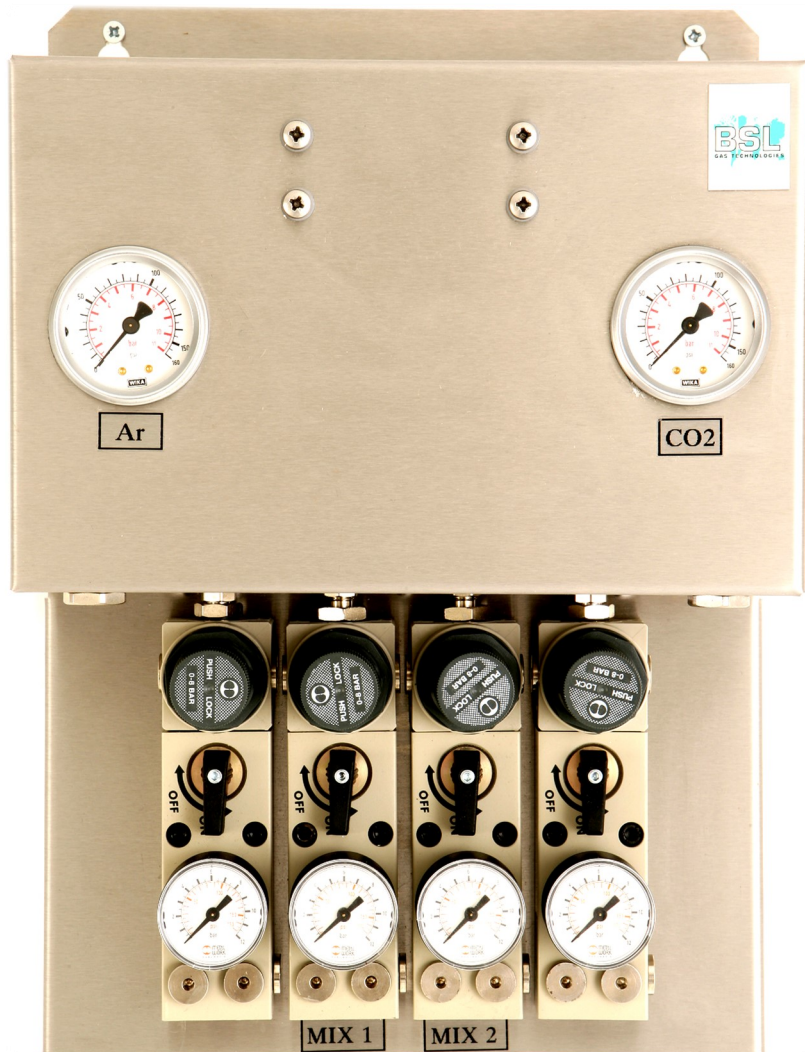
We have Gas Blenders for all the typical Industrial gases you may use, such as CO₂, Nitrogen, Argon, Helium, Oxygen, Hydrogen and one or two less common gases too. Much of the decision on which Gas Blender to use comes down to which gases you are using and the materials that are compatible with those gases and the cleaning regime required (eg. For Oxygen clean).



Some questions we usually ask are:

- What is your application?
- Which gases are you trying to mix?
- What mix gas ratios do you need for your application?
- What gas source and supply gas pressures do you have available?
- What mixed gas pressures do you need, the maximum flow that your application is likely to see?
- Is there any other important factor we need to know about?

Gas Mixing Panels



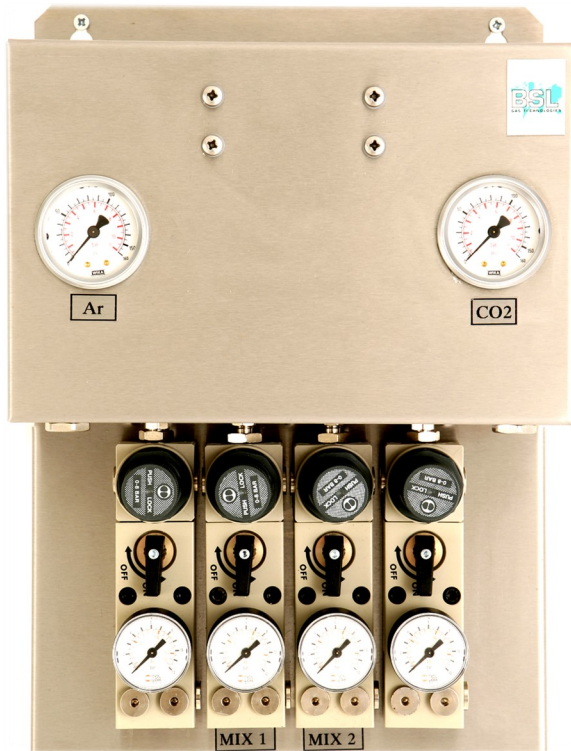
Cellar Mix
Gas Mix GMB & GMT
Adjust-a-mix
Gas Mix FW
Gas Mix HF

Advantages of our Gas Mixing Panels

- Very robust design
- Accurate mixing of gases
- Resilient to temperature fluctuations
- Gas pressure balancing
- No electrics/ buffer tank required
- Simple installation



Cellar Mix



The Cellar Mix range of our Gas Mixing panels include a Gas Blender/ Mixing Valve, a stainless steel formed back-plate with mounting holes, inlet and outlet connections and low pressure outlet gas regulators.

The Cellar Mix Panels are supplied already pre-set and certified for their mixed gas settings.

There are many variations on this theme for you to choose from. We have customers that take lots of different pre-set outlets each at low flows of 2 or 3 m³/hr. We also have panels that can mix gases at 80 to 100 l/min each mix.

You can have up to 4 different outlets from one of these panels and some of our customers place two or three of these panels together!

This makes the Cellar Mix very versatile and easy to use.



GMB & GMT

The Gas-Mix GMB and GMT range of Gas Mixing Panels, use our Gas Blenders added to a more compact but completely user friendly package.

These assemblies include a Gas Blender, inlet and outlet connections and low pressure outlet gas regulators. They also use twin ferrule connections and hard-wearing design.

These units are available to mix 2 gases from the typical industrial gases. They are supplied already pre-set and certified for their mixed gas settings or you can have an adjustable version.

The GMB unit will typically give you flow of around 10 m³/hr maximum. Whereas the GMT unit will typically give you flow of around 20 m³/hr maximum.



Gas-Mix FW

The **Gas-Mix FW** range of our Gas Mixing Panels are a very popular design and extremely versatile.

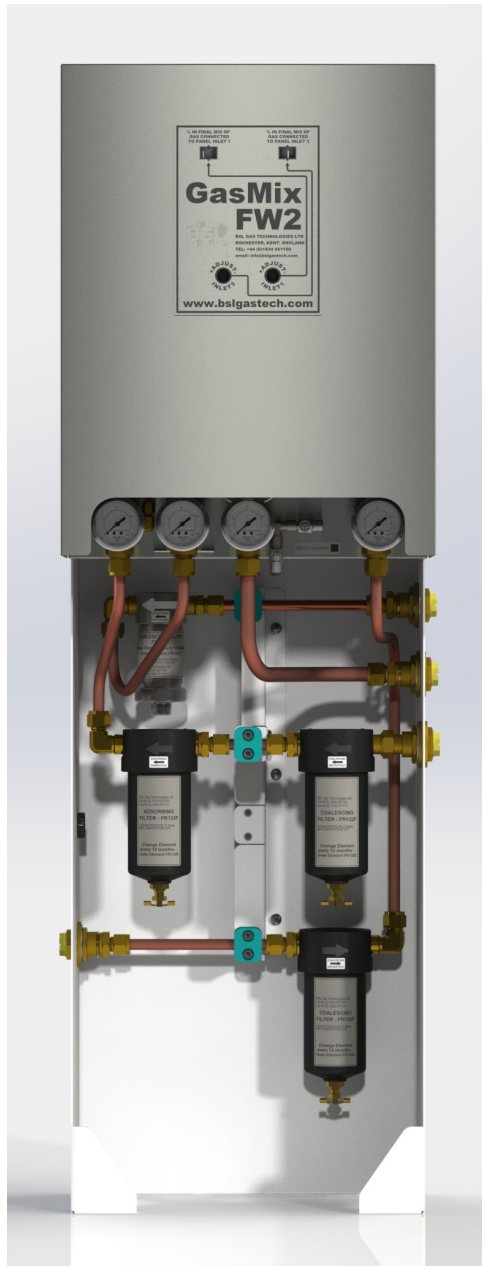
The Gas-Mix FW 1, 2, 3 are available for medium to high flows of mixed gas, 25, 50 and 100 m³/hr at normal pressures.

They are available in 2 and 3 gas designs and come as pre-set or adjustable.

The panels are normally wall mounted and are often located outside with the gas supply system. However they can also be used inside and we have the adjust-a-frame for if you don't want to fix the panel to your walls.

These panels are rated at 30 barg, for pressure safety reasons, although they are typically working in applications with pressures around 10 to 12 bar g.

A feature of these units is that they can be upgraded. That is, we can supply them to do 25 m³/hr flow, but with the addition of more of our Gas Blenders we can take them up to a 100 m³/hr flow. Or we can add filters to protect your whole process, this configuration would like the image to the left.



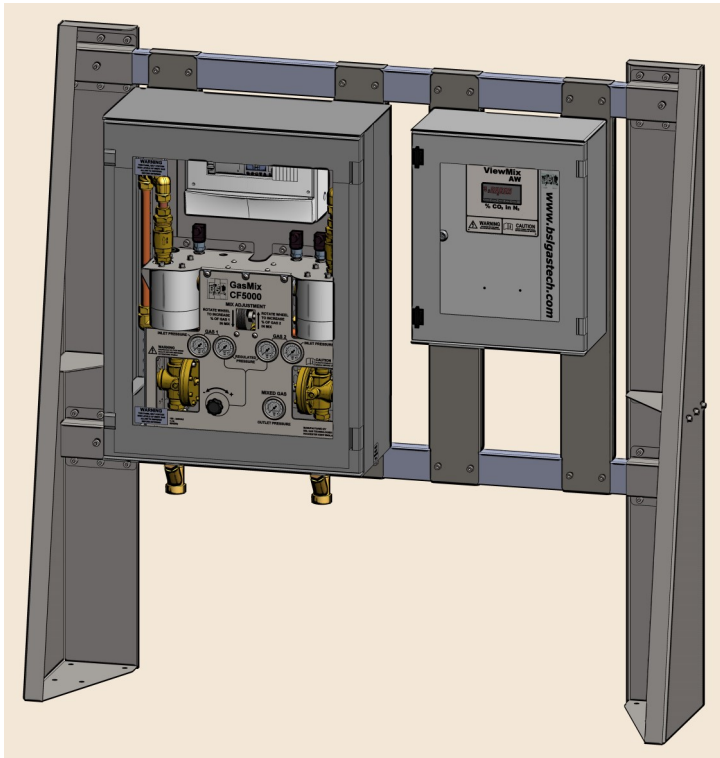
CF 5000

The CF 5000 is for very high flows greater than 250 m³/hr.

This Gas Mixing System uses either our Gas Flow Control Valves or our High Flow Gas Mixing Orifice blocks to go into a mixed gas storage tank. This will then feed the process on demand.

In this scenario a buffer tank/ storage tank and electrics are required. However for very large installations the additional costs associated with running these parts are a smaller part of the overall package and begin to become cost effective very quickly.

To keep costs down further, the buffer tank and any other peripheral equipment can be supplied locally and it is always our suggestion for that to be looked at first. There is little point in shipping large and heavy tanks around the World, especially if they are being made to an acceptable standard locally.



Adjust-a-mix

The Adjust-a-mix range of Gas Mixing Panels, does what it says. It provides you with the ability to readily adjust the gas mixtures.

The Adjust-a-mix units are available to mix 2 or 3 gases from the typical Industrial gases.

These panels will typically give you a flow of around 300 l/min of mixed gas given normal expected pressure conditions.

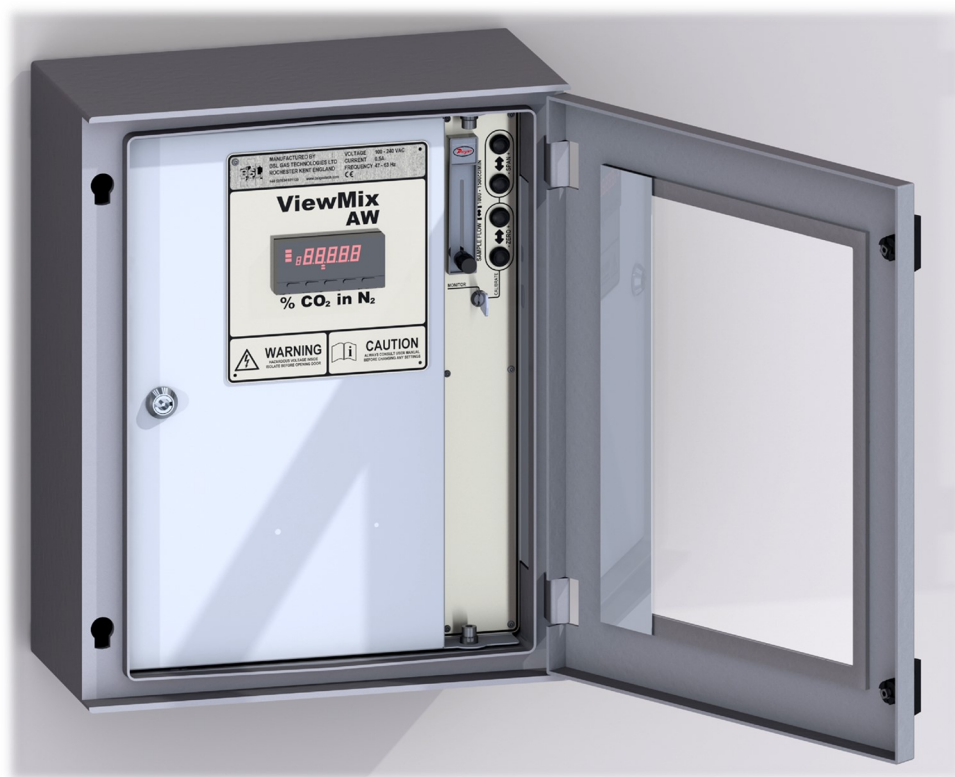
If you want help deciding which panel would suit you, let us know:

- What gases you are looking to use or already using.
- What ratio you need for your application.
- What gas source and supply gas pressures you have available.
- What mixed gas pressures you need.

We can then discuss your options with you.



Gas Analysers



We have a Analyser to suit you:

- Hand held for convenience, space saving and uses ultrasonic technology.
- Wall Mounted for constant monitoring and optional alarms. Analog output that can be connected to data logging systems.

Hand held CO₂ Gas Analyser



The Beer-Check or Hand held CO₂ Analyser units are used to measure the CO₂ content in CO₂ / Nitrogen gas mixtures used in the Brewing, Food and Beverage Industries. They are used to check mixes from gas cylinders with adaptors, mixtures from Gas Mixers and from Gas Generation Systems too. The measurement range is 0 to 100% CO₂.

This unit uses ultrasonic technology to measure how much CO₂ is in a mix.

Gases

0 to 100% CO₂ in Nitrogen

Wall mounted Gas Analysers



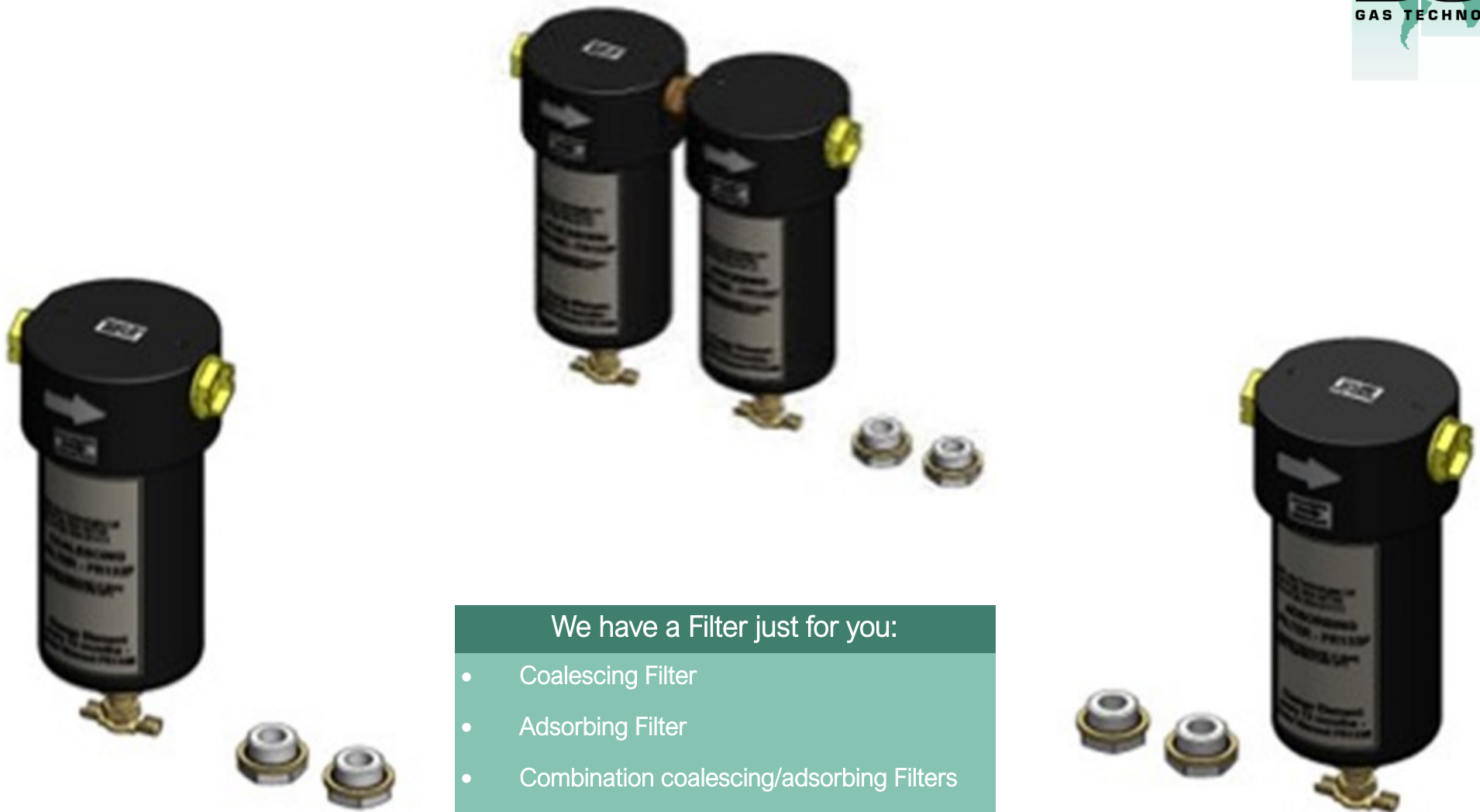
BSL have a range of Wall Mounted Mixed gas monitors and analysers. We have simple display and alarm only systems and we have the View-Mix range, which are designed to give you an analog output 4-20mA signal. This means the output can be put into data logging software.

Systems are available for the following mixtures of gases.

Gases

- 0 to 100% CO₂ in Nitrogen
- 0 to 30% CO₂ in Nitrogen
- 0 to 30% CO₂ in Argon
- 0 to 25% O₂ in Argon

Gas Filters



We have a Filter just for you:

- Coalescing Filter
- Adsorbing Filter
- Combination coalescing/adsorbing Filters
- Filters 'dirty gas' and unwanted particles



Coalescing filters for the typical Industrial gases

Pressures to 30 bar g

0.01 micron filter element size

-10°C to + 50°C

Spare elements available



Adsorbing filters for the typical Industrial gases

Pressures to 30 bar g

0.01 micron filter element size

-10°C to + 50°C

Spare elements available



Combination coalescing and adsorbing filters for the typical Industrial gases

Pressures to 30 bar g

0.01 micron filter element size

-10°C to + 50°C

Spare elements available

Gas Flow Control Valves

Advantages of our Flow Control Valves

- Simple
- Clever
- Very reliable
- Extremely hard wearing
- Completely pressure mechanical





Our Mass Flow Control Valves are simple, clever, reliable and extremely hard wearing. They are a completely pressure mechanical design which provides a constant flow of gas. This is given that you have a constant upstream supply gas pressure and a constantly changing downstream system pressure.

-A good example of this is when you are filling a storage tank and as you fill it the pressure increases. Our Mass Flow Control Valves are used to keep the flow constant as the pressure builds up.

-These are often used to control the operation of processes like Gas Generation Systems, where the gas separation elements need to operate at a constant pressure and flow. They are used to regulate the flow for the process given these conditions and our units are very good at doing this job.

-Obviously they do not rely on electrical power to operate which is hugely beneficial and cost effective. We have four main sizes in the Mass Flow Control Valve family. At 14 bar g, we have the valves that will deliver flows of 30, 500, 1600 and 5000 l/per minute of your gas.

-The valves have a built in needle valve so that you can set the flow you need for your process or we can set them for you.

Leak Detectors



Key features of our Leak Detectors:

- Highlight if there is a leak.
- Quantify the size of the leak.
- We can custom design a system to suit your business.

We have a few Leak Detector systems available for detecting, quantifying and locating leaks.

In some applications this is easier than others but also in some applications it is critical (For example in the Beer Dispense application). For example, where you have a Nitrogen generator which is generating gas to be used in mixed gas dispense, the Nitrogen is generated at sometimes only a few litres per minute. To lose more than 1 litre per minute of that gas will cause all sorts of problems. The publican will not have the gas they need for dispensing beer and the generator will be working much harder than necessary.

BSL have available, a simple in-line Leak Detector for the purpose of highlighting a leak and giving an idea of the size of it.

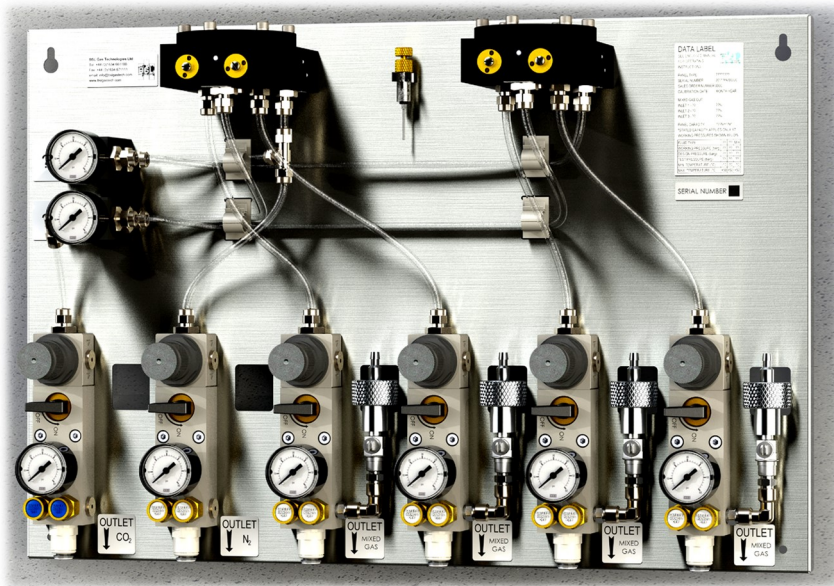
For larger gas installations, leaks will cause different problems. Even small leaks can cost a lot of money over time and the problem with very large installations is that the leak or combination of leaks may be difficult to find. This is because of the complexity and route taken by the gas feed pipework.

Some installations we have monitored are losing more than 20% of all the gases they purchase, through leaks and other reasons. BSL's range of industrial in-line Leak Detectors and monitors are a simple, visual and mechanical method to allow you to quantify and fix leaks. And of course, save you leaking money!

BSL produce custom built Smart Gas Management Systems to allow the largest users to quantify, locate and fix leaks in their systems. Often these units include the Gas Mixer element too, so mixing the gas supplies, monitoring the mix ratios, checking for leaks, producing information about the gas use and communicating with you so you can see what is happening on-site.



Bespoke Designs



BSL undertake work that is purpose built and branded bespoke designs. We have a good range of products that go to make up the core building blocks. These are then put with your branding if you want to complete the package.

BSL have a good number of customers that appreciate the benefits of our products. So much so that they ask us to find a way to incorporate what we do into their own systems. This is a win-win situation, BSL and our customer gets the benefit of the technology or a particular design.

Generally our equipment is arranged with other equipment and combined with branding to provide our customer with a unique product which gives them a genuine competitive advantage.

If you like what we do, but would like to see it arranged differently and maybe with your branding, contact us and we can create an visual design for you.

Refurbishing Projects

BSL's key aim is to make sure that our core equipment is designed really well and we never taken our eye off of the reliability target. We have a lot of systems that have been in place for more than twenty years and surprisingly they have never been looked at, maintained or refurbished in any way.

However, this is an exceptional situation and generally speaking even the very best equipment has a life span and will require refurbishment at some point. This is because rubber and other materials decay in contact with certain gases. Not to mention because of the kind of environments this equipment is in, whether inside or outside.



BSL have a number of refurbishment programmes in operation for various products including Gas Mixing Panels and Analysers we make ourselves, to compressors and gas generators that we did not make initially ourselves.

The products are normally delivered to us in a less than ideal state. We test, strip, clean, re-assemble, re-test and then certify them, making it operationally as good as new. The exact specification for the repair is guided by you of course, and as an engineering company we always want to do more.

However it is about striking an ideal economic balance between getting additional life and the cost it takes to make it all worthwhile.

If you have equipment that you wish to consider for refurbishment or if you are currently doing it but would prefer someone else to be doing it, contact us and we will be happy to help.

The GasHub

Data logging has proven that our GasHub can generate **15.7 litres of Nitrogen per cycle**.

The GasHub can continuously supply **10 litres of Nitrogen per minute**.

This on average equates to a pouring rate of **6.5 pints per minute**.

Increased Nitrogen Purity—Up to 99.8% which is 0.3% higher than the industry expectation.

Increased Volume—Up to 40% more efficient Nitrogen production than the existing Nitrogen generation systems.

Improved Mix Accuracy—No more wasted gas.

Longer Life—With a lower operating pressure there is less demand on the air compressors. Therefore extending the life of each air compressor and saving you money. The GasHub has multiple air compressors which it alternates between so only 2 are running at the same time.

Backup Solution—With that in mind, if an air compressor does fail for whatever reason, Nitrogen production will continue. The fault is then communicated to staff via the status screen on the GasHub and also via text to BSL and/or the manager of the site. Therefore there is no impact on site or sales.

Increased Safety—No Oxygen depletion from Nitrogen gas/beer pump exhausts in the cellar. The gas/beer pumps run off of compressed air, which reduces costs further.

Space Saver—The GasHub is a contained unit which will cut down on the space for gas mixing units, cylinders and air compressors.



Contact Us

Useful People:

- David Blanchard – Managing Director/
Sales
- Chris Tring – Production & Safety Director
- Keith Kerwin – Engineering & Quality
Director
- Julie Barton – Financial & Legal Director

BSL Gas Technologies Ltd

101 Laker Road,

Rochester Airport Industrial Estate,

Kent, ME1 3QX, UK

Tel: +44(0) 1634 661100

Fax: +44(0) 1634 671111

Solutions@bslgastech.com

www.bslgastech.com

