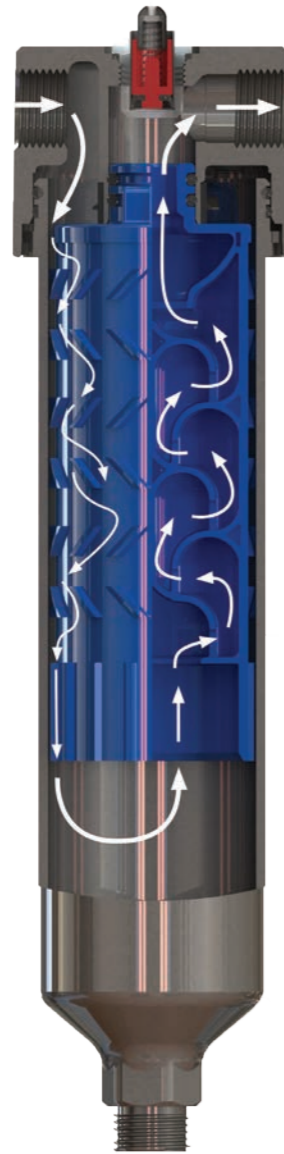


expel®

NEW REVOLUTIONARY COMPRESSED AIR TECHNOLOGY



REVOLUTIONARY COMPRESSED



AIR FILTRATION TECHNOLOGY

99.9999% EFFICIENCY

What is EXPEL and what does it do?

The EXPEL compressed air filter continually removes 99.9999% of water, oil emulsion fluids and solid particulates down to 1 micron all in a single unit.

Expel's unique design means that you never need to change internal elements, simply fit and forget.



Water



Oil emulsion fluids



Solid particulates



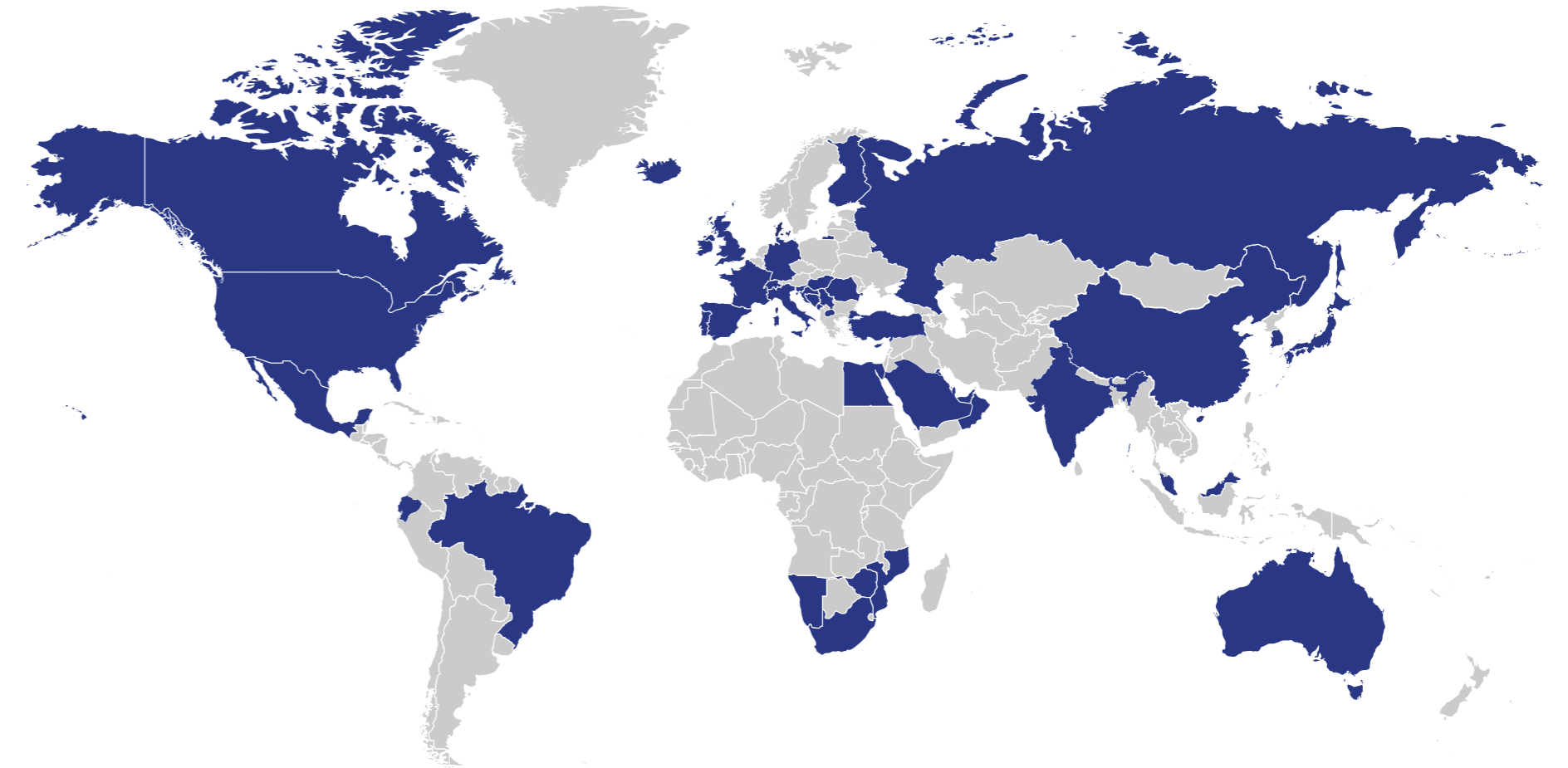
Who is using Expel?



HALLIBURTON



Countries where Expel is being used



USA, Canada, Brazil, Mexico, Ecuador, France, Iceland, UK & Rep. of Ireland, Finland, Italy, Denmark, Germany, Switzerland, Spain, Portugal, Hungary, Romania, Croatia, Montenegro, North Macedonia, Serbia, Bosnia & Herzegovina, Cyprus, Russia, Turkey, Georgia, Ukraine, Azerbaijan, Lesotho, Namibia, Mozambique, Zimbabwe, South Korea, China, Iraq, Egypt, Kuwait, Bahrain, Qatar, UAE, Oman, Saudi Arabia, South Africa, India, Japan, Singapore & Malaysia, Australia.

“ ***My goal is to keep downtime low to ensure consistent production and meet all of our contract deadlines in a timely manner. Expel has been the perfect tool for the job.*** ”

Mark Henderson - Maintenance Manager - Tarmac



Why you need Expel

The Expel compressed air filter continually removes 99.999% of liquid water, oil emulsion fluids and solid particulates down to 1 micron all in a single unit.

REDUCES MAINTENANCE



The Expel does not require ANY replacement internal elements, so it does not require any servicing and is virtually maintenance free. Furthermore, Expel protects your pneumatic equipment to a superior standard so maintenance and repair costs generated through the problem of wet/dirty air are eliminated.

REDUCES DOWNTIME



No more pneumatic equipment failing because of moisture and solid particulates in compressed air lines. Expel can therefore increase the efficiency of sites by providing superior equipment protection, all in a single unit.

REDUCES COSTS



Clean and liquid free compressed air extends the life of pneumatic equipment, saving replacement equipment costs. Expel also reduces energy costs by providing a consistently low pressure bar drop.



AVG product range

Expel range

Cleanable and reusable compressed air filter

We currently offer a range of Expel units able to operate with:

- Flow rates up to 100cfm
- Port sizes from ¼" to 2"
- Operating pressure 1-15 bar



AVG Auto-Drains

Essential for your Expel

Other applications include:

- Air receiver tanks
- Drip legs
- Dryers



AVG Regulators

Pneumatic regulators

- Temperature range: -5 to +70°C
- Housing material: Zinc alloy
- Operating pressure: 0.5-12 bar
- Port sizes: from ¼" to 1"



AVG Oil / Water Separators

Effective and efficient separation of oil from compressor condensate

- Seven models covering up to 60m³/min (2500cfm) compressor capacity offering sizing flexibility.
- Service packs available.



AVG Lubricators

Compressed air lubricators deliver oil to air tools and equipment to improve performance and reduce wear. The oil drip rate is controlled by the adjustable bolt.



Problems with traditional compressed air filters

Traditional compressed air filters are only 60-80% efficient when they are operating at optimum performance levels and can be overwhelmed with compressed air contaminants exceptionally quickly because they contain disposable internal elements which become less and less effective as they are used.

Therefore, they can NEVER guarantee adequate protection for your machinery even if they are brand new.



Traditional Filter Comparison 60-80%

EFFECIENCY	60-80%	✗
CONTAMINANT REMOVAL	OFTEN REQUIRE 3 FILTERS FOR WATER, OIL EMULSION & PARTICULATES	✗
PERFORMANCE OVER TIME	REDUCES WITH USE	✗
FREQUENCY OF REPLACEMENT	3-12 MONTHS	✗
PRESSURE BAR DROP	OFTEN 1 BAR WHICH INCREASES WITH USE	✗
GUARANTEE	NO	✗

Why does Expel achieve a far superior result than a typical compressed air filter?

Expel offers a revolutionary approach to compressed air filtration. It has been engineered using Computational Fluid Dynamics so that it does not require ANY replacement filter elements, therefore the performance of Expel will NEVER reduce below 99.9999%.

Expel can ALWAYS guarantee that your pneumatic equipment is fully protected down to 1 micron against liquid water, oil emulsion fluids and solid particulates all in a single unit when installed at point of use.

Typically, you would require up to three conventional compressed air filters to achieve the same air quality as one Expel filter.

“Expel is on all of my plants. I would highly recommend it and I have been recommending it too!”

Steve Pointon - Operations Manager - Aggregate Industries



EFFECIENCY	99.9999%	✓
CONTAMINANT REMOVAL	<ul style="list-style-type: none"> · LIQUID WATER · OIL EMULSION · PARTICULATES DOWN TO 1 MICRON 	✓
PERFORMANCE OVER TIME	CONSISTENT	✓
FREQUENCY OF REPLACEMENT	NEVER	✓
PRESSURE BAR DROP	MAX 0.1 BAR	✓
GUARANTEE	10 YEARS	✓

How does Expel work?

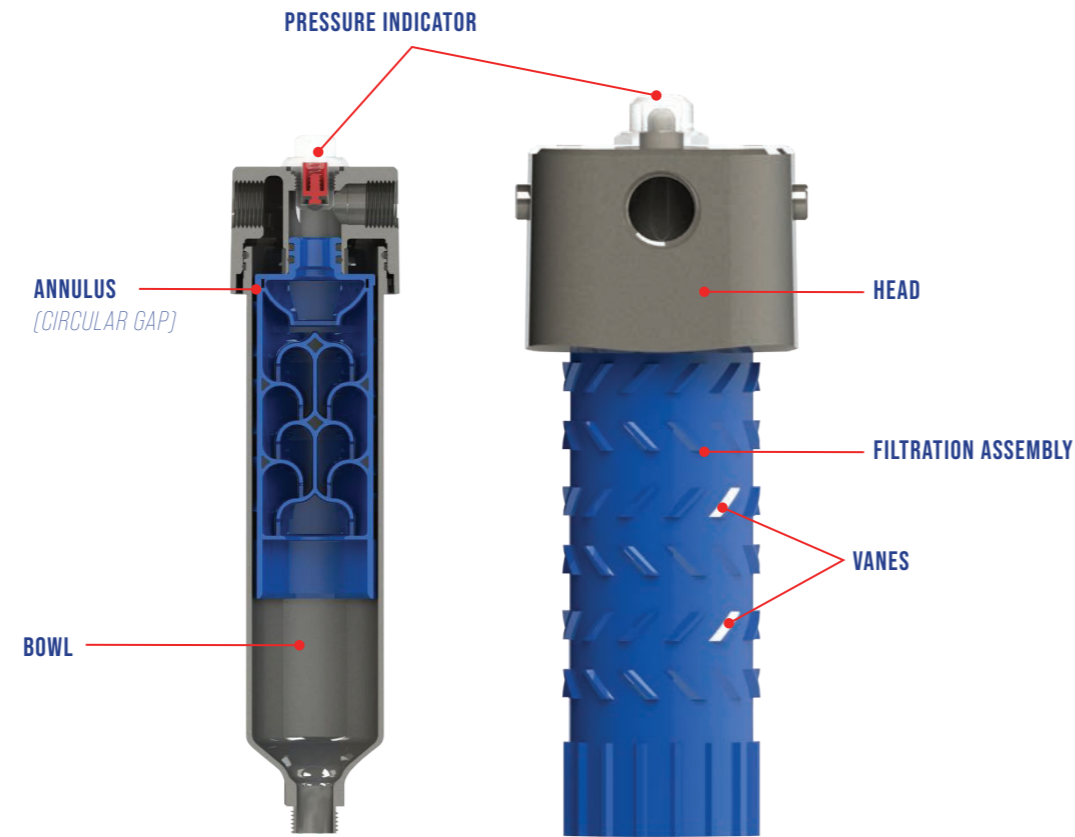
1. Stage One

95% of the separation occurs when...

Compressed air enters the unit and is directed downwards (through the annulus gap - see diagram) between the bowl and the outside of the internal filter element.

The outside of the internal element has specifically designed angled vanes which manipulate the direction of the air. These vanes create multiple eddy currents which force the contaminants to the sidewall of the bowl.

At the base of the internal element, rather than the vanes being angled, they are vertical which act like brakes for the air. At this point 95% of the contaminants in the air are removed and fall to the bottom of the bowl and will be automatically discharged by an AVG Auto-Drain.

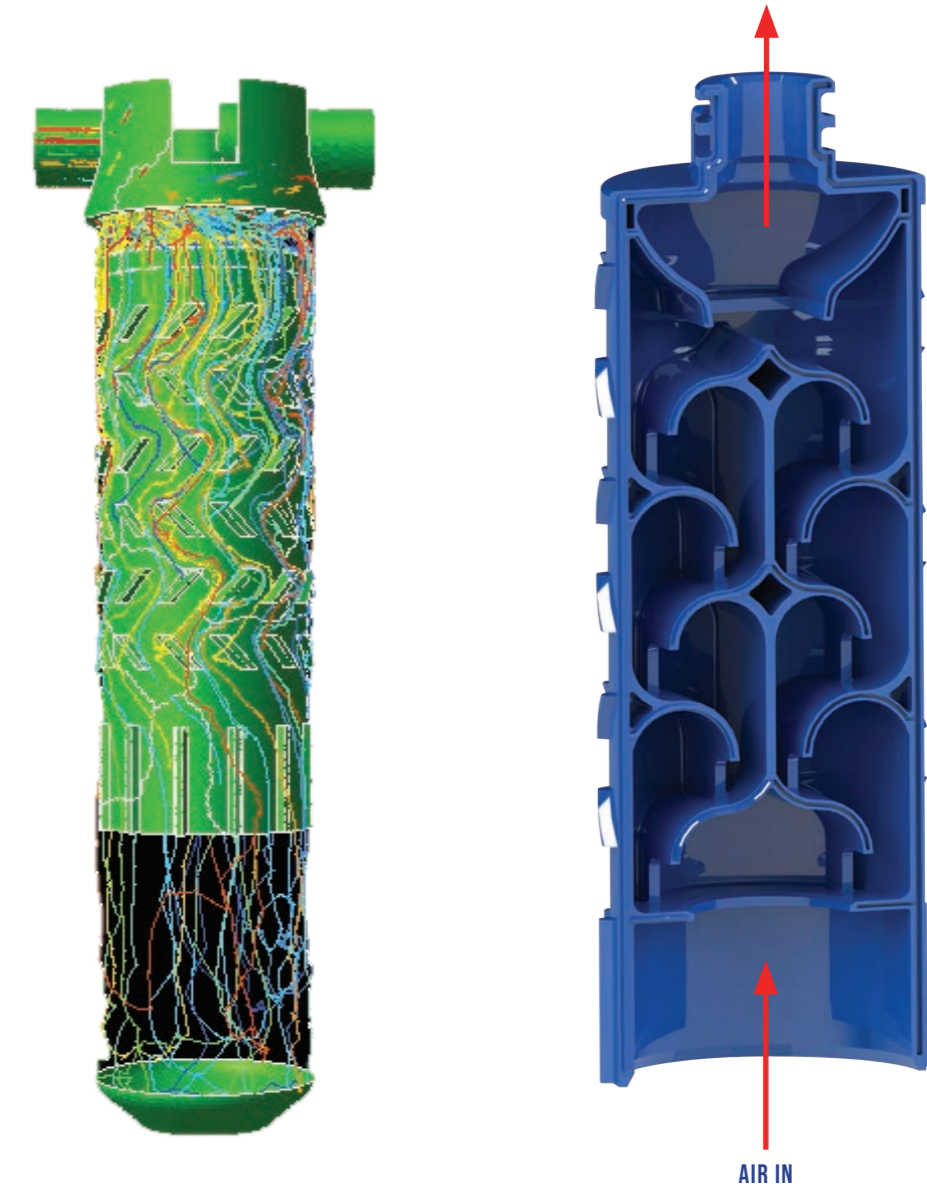


2. Stage Two

5% of the separation occurs when...

The air is forced up through the umbrella-shaped unitary vertical bodies (UVB's).

Any remaining water, oil emulsion fluids and particles are coalesced together forming droplets. Gravity takes hold and the droplets fall to the base of the unit to be automatically discharged by an AVG Auto-Drain.



Expel features



Performance

- Removes 99.999% of all liquid water, oil emulsion fluids and solid particulates down to 1 micron
- Guaranteed high performance over the lifetime of the filter
- No moving parts that can fail
- No small holes to block



Installation / Maintenance

- Easy to install and maintain
- World's first cleanable, reusable compressed air filter
- All spare parts available
- Fully dismantlable



Savings

- No element costs
- No ongoing consumable costs
- No power source required
- No increase in pressure drop



Additional Features

- 10 Year Guarantee
- Tested to ISO 12500 standards
- Stainless steel body and head
- Optional pressure gauge



Expel features

99.9999% EFFICIENCY

EXCEPTIONAL COMPRESSED AIR QUALITY GUARANTEED

This unique, patented design will dramatically improve the quality of compressed air.

Designed and tested in accordance with ISO12500

- Part 1 - Oil aerosols
- Part 2 - Particles
- Part 3 - Water



Expel & air dryers

- Can I use Expel if I have an air dryer - **Yes!**
- Do I need to use Expel if I have an air dryer - **Yes!**
- Can it work instead of an air dryer - **Yes!**

Moisture usually occurs in the compressed air system after an air dryer

Moisture in the compressed air lines is often an unseen and therefore unknown problem until Expel is installed.

Moisture can occur for a variety of reasons, a common cause however, is the distance the air has to travel. This can mean the air is exposed to multiple temperature changes, causing condensation to occur.

Expel as a stand-alone filtration system

Systems that require a certain class of air don't always require an air dryer. Air dryers can be expensive to purchase, run and maintain.

SOLUTION

Expel is a fantastic solution for this scenario. Expel is extremely efficient, does not require electricity or any other consumables to operate and is guaranteed to remove all liquid water at point of use.



“Refrigerant dryers are a lot more expensive than Expel and not easy to maintain. I can't maintain a dryer myself, whereas we can maintain Expel ourselves”.

Steve Pointon - Operations Manager - Aggregate Industries



Expel & air dryers

EXPEL and REFRIGERANT DRYER

Depending on the class of compressed air you require, Expel can replace or work alongside a refrigerant dryer.

PROBLEM: We regularly visit sites where refrigerant dryers are being used but liquid water is occurring after the air dryer.

SOLUTION: Expel is beneficial even when sites have a refrigerant dryer. Expel ensures the air is clean and liquid free at the point of use.



“The air dryer broke down and there was lots of water in the system, and this definitely saved the company a lot of money”

Rob Pooler - Maintenance Engineering Manager - Syspal

EXPEL alongside a DESICCANT DRYER

Depending on your compressed air class requirements will depend on whether you require a desiccant dryer. Expel can work alongside a desiccant dryer.

PROBLEM: Systems with desiccant dryers can and do suffer inefficiencies. Moisture can occur after a desiccant air dryer where the setup is complex, or if your dryer was to start reducing in performance. This means critical areas can be left exposed to moisture in the airlines.

SOLUTION: Expel is the most effective failsafe system ensuring critical pneumatic equipment is always protected.



“Dryer had failed while running the test and the Expel passed the test”

Duncan Whitbread - Brewing Engineering Manager - Carlsberg



Read what others have to say

- General manufacturing
- Food and Drink
- Aggregate and Mining
- Paper and Pulp
- Automotive
- Water treatment
- Pharmaceutical & Medical
- Oil & Gas
- Chemical
- Aerospace
- Plastic & Packaging
- Textile
- Recycling
- Lumber and Wood
- Foundries
- Glass, Clay, Ceramics and Stone
- Agriculture
- Transportation
- Service industries
- Power generation
- ...and many more!



“My Fitters couldn’t believe it! Expel seemed too good to be true”
Mark Henderson – Maintenance Manager



“Dryer had failed while running the test and the Expel passed the test”
Duncan Whitbread – Brewing Engineering Manager



“When we tapped the pipe, we’d hear the ice rattling up the pipe, but nothing got through the Expel system supplied by yourselves and the conveyors were fine”
Mick Abbott – Maintenance Manager



“The pneumatic side of the of the filling valves were getting hydraulically locked, so they would stay open causing huge product wastage. Eventually, they all settled down when Expel was installed”.
Dean Butterworth – Reliability Engineering Manager



“We tested the Expel filter in a side-by-side test against a standard filter and the Expel was far more effective at protecting our equipment.”
Ashley Bowyer – Preventative Maintenance Engineer



“Expel has had a big impact”.
Trevor Standeven – General Manager



“Moisture would cause the valves to stick. We have had no issues with this since installing Expel. Very impressed.”
Oliver Loughram – Engineering Co-ordinator



“I like that there is a guarantee as we know if anything goes wrong it can be replaced”
Craig Gowland – Relief Manager.



We finally have no water going to the guillotine. It is an excellent product.

Chris Kosolowski – Bar Line Production Manager – Nutrition Group Plc



