

# // ONE BRAND // ONE SOURCE // ONE SYSTEM



**EXPEL 30** POINT OF USE LIQUID WATER, OIL AND PARTICULATE COMPRESSED AIR FILTER



# A UNIQUE PATENT PROTECTED PRODUCT DESIGNED TO **REVOLUTIONISE THE COMPRESSED AIR INDUSTRY**

## Exceptional compressed air quality guaranteed

Expel will dramatically improve compressed air systems throughout the industry. The unique patented design allows it to efficiently remove 99.9999% of liquid, oil, water and removes other contaminants down to 1 micron when installed at point of use.



# **PRODUCT OVERVIEW**

30 cfm max rated flow rate

VIDEO

UK/FR/DE/ES/PT

- 15 bar(g) 217 psi(g) maximum pressure
- 2 year manufacturer's warranty
- ½" & ¾" bspt / npt inlet / outlet connections
- Removes 99.9999% all liquid water, oils, and filters particulates down to 1 micron
- Grade 304 stainless steel body and head
- Pressure indicator as standard
- Optional pressure gauge.
- ½" bspt / npt male drain port

# **FEATURES**

- Tested to ISO 12500 part 3 & 4 standard
- Worlds first cleanable, reusable compressed air filter
- No increase in pressure drop caused by contaminated filters
- No power source required
- Significantly reduced life cycle costs
- Easy to install and maintain
- Instantaneous recovery from pulsed flows or stop start
- All spare parts available
- Fully dismantlable
- No decrease in performance over lifetime of well maintained filter



# **OPERATIONAL SPECIFICATION**

	0.14 - 0.85m³/min		
Flow rate for a 7 bar(g) system	8.5 - 51 m³/hr		
	5 - 30 cfm		
	141 - 850 litres/min		
Operating prossure	1 - 15 bar(g)		
operating pressure	15 - 217 psi(g)		
Onerating temperature	>0 to +80 °C		
operating temperatore	>32 to 176 °F		
Maximum recommended	35 ℃ 95 °F		
inlet temperature			

# **MECHANICAL SPECIFICATION**

Product code - ½"	6000-002-AA
Product code - ¾"	6000-003-AA
Inlet/Outlet connection	½" or ¾" BSPT/NPT
Drain connection	½" (m) BSPT/NPT
Weight	2.08 kg
Product dimensions	293 mm x 80 mm
Particulate removal	> 1 micron
Material (housing)	Stainless Steel 304
Material (internal)	ABS
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# **PRODUCT LINE DRAWING\***



# LINE DRAWING FOR MOUNTING

### \*Not to scale



# EXPEL 30 - REF NO. 3112498

BOX CONTENTS	
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QTY

Expel 30 Unit	1
Drain tap	٦
Mounting bracket	1
Bolts M6 x 8 mm	4
Fixing Screws	4
Wall Plugs	4
Manual	1

EXPEL 30 - POINT OF USE LIQUID WATER, OIL AND PARTICULATE COMPRESSED AIR FILTER





# PRESSURE DROP (at 7 bar)





# PRESSURE DROP (at 8 bar)



# LIQUID WATER REMOVAL



# **EXPEL 30** EXPEL AVG FLOAT DRAIN - OPTIONAL ACCESSORY



# **AVG FLOAT DRAIN**

The new EXPEL automatic float drain is designed to discharge liquids and particulates extracted from your compressed air system by the EXPEL range of compressed air filters.

The unit is designed for working pressures up to 16 bar, and is screwed directly to the base of the EXPEL.

This product is suited towards automotive workshop environments where high levels of condensate are frequently experienced.

A 6mm diameter pipe can be connected to the base of the drain to control the flow of the discharged fluid into a suitable container for disposal.



Part Number	Inlet Thread	Outlet	Min. Working Pressure	Max. Working Pressure	Min. Working Temp.	Max. Working Temp.	Initial Discharge Value	Maximum disharge Capacity
3112645	½" Female BSPT	6mm Diameter	1.5 Bar	16 Bar	1.5°C	85°C	22ml	84 L/H



# **KEY FEATURES**

- No power source required
- Automatic condensate drain
- Clear bowl enables visibility of drain operation
- Unit can be easily dismantled for servicing and cleaning if required
- Operating pressures up to 16 bar
- Is easily attached to your EXPEL units drain port
- ½" BSPT Female Thread Inlet connection
- Manual override for immediate condensate discharge

# **EXPEL 30** EXPEL AVG FLOAT DRAIN - OPTIONAL ACCESSORY



# EXPEL 30

EXPEL ZERO PRESSURE LOSS MAGNETIC AUTO DRAIN - OPTIONAL ACCESSORY



# ZERO PRESSURE LOSS MAGNETIC AUTO DRAIN



The AVG MAG-Drain removes condensate from compressed air filters. The operation is automatic and there is no compressed air lost during the condensate discharge cycle.

The AVG MAG-Drain uses magnetic forces to operate the direct acting valve assembly and is ideally suited in applications where power is not available, too expensive or not reliable.

The magnets have been specially selected to ensure that long lasting magnetism is guaranteed.

## **COMMERCIAL BENEFITS**

- No power source required
- Automatic condensate drain
- Clear bowl enables visibility of drain operation
- Unit can be easily dismantled for servicing and cleaning if required
- Operating pressures up to 16 bar
- Is easily attached to your EXPEL units drain port
- ½" BSPT Female Thread Inlet connection
- Manual override for immediate condensate discharge

## **TECHNICAL ADVANTAGES**

- Zero air loss during the condensate discharge
- No electricity required to operate the drain
- Magnetically operated, long life magnets applied
- Operating pressure range is 0 to 16 bar
- Direct acting valve with FPM (Viton) seals
- Robust corrosion resistant aluminium housing finished with an Electrophoretic coating
- The direct acting valve is serviceable
- Bottom (outlet) can be rotated 360 degrees for installation simplicity

# EXPEL 30

EXPEL ZERO PRESSURE LOSS MAGNETIC AUTO DRAIN - OPTIONAL ACCESSORY



# **SPECIFICATIONS**

Maximum drainage capacity	Unlimited filter draining capacity
Inlet connection	1/2" BSP or NPT (please specify)
Outlet connection	1/8"
Minimum system pressure	0 bar
Maximum system pressure	16 bar
Minimum medium temperature	2° C
Maximum medium temperature	50°C
Valve orifice	2.0 mm
Type of operating valve	Stainless steel direct acting valve assembly
Valve seals	Viton (FPM)
Housing material	Corrosion resistant Aluminium (EP coated)

## INSTALL AN AVG MAG-DRAIN TO ENSURE A RELIABLE PROCESS OF CONDENSATE DRAINING ON FILTERS

## **OPPORTUNITY!**

Compressed air filters are generally supplied with inexpensive and unreliable float type drains, a decision based on cost. As a cutting-edge engineering company,

Original AVG design and use only the best products, we recommend fitting a professional AVG MAG-Drain with every filter.

# EXPEL 30 - FAQ'S FREQUENTLY ASKED QUESTIONS

#### WHAT IS EXPEL AND WHAT DOES IT DO?

EXPEL is a unique, patent protected compressed air filter, and is designed to remove all (99.9999%) liquid water, emulsion fluids (oil & water mix) and solid particulates down to 1 micron from a compressed air line.

#### WHAT MAKES EXPEL DIFFERENT TO ANY OTHER COMPRESSED AIR FILTER?

The EXPEL is the world's first compressed air filter capable of removing such a high level of liquids and solid particulates that can be taken apart, cleaned and reassembled. Typically, you would require at least 3 conventional compressed air filters to achieve the same air quality as 1 EXPEL unit.

#### DOES THE EXPEL UNIT REQUIRE MAINTENANCE?

EXPEL requires no mains power or consumables. It is virtually maintenance free apart from requiring frequent draining on manual models. We recommend fitting an auto-drain to remove the necessity for frequent manual draining. We supply a range of autodrains to suit your requirements so please get in contact if you are unsure on what type of drain you may require.

#### WHAT SIZE IS THE UNIT?

As a guide, the physical size of the EXPEL 30 which is most commonly seen in workshop applications is 293mm High x 80mm Diameter.

#### WHAT GRADE OF MATERIAL IS EXPEL MANUFACTURED FROM?

The external body and head of the EXPEL unit are manufactured from Grade 304 stainless steel. The internal filter element is made from ABS polymer material.

#### WHAT CLASS OF AIR QUALITY DOES EXPEL PROVIDE?

EXPEL is designed and tested in accordance with the strict criteria of ISO12500, which is the validated performance criteria specifically outlined for compressed air filters. Previously, ISO8573 was the defined standard for compressed air quality, however this related to the air quality of the system in its entirety, and was not component specific. ISO12500 is the further refined ISO test, which is component specific.

#### **EXPEL** complies with

- ISO12500-1:2009 (Oil Aerosols) ISO12500-3:2009 (Particulates) ISO12500-4:2009 (Water)

#### DOES EXPEL REMOVE PARTICULATES AND LIQUID WATER / OIL?

Yes, the EXPEL is designed and tested in accordance with ISO12500, and will remove 99.999% of all solid particulates down to 1 micron in size along with all liquids and emulsion fluids (oil / water mix.)

#### WHAT IS THE PRESSURE DROP ACROSS THE FILTER?

The maximum pressure drop across the EXPEL 30 is 0.1 bar (1.45 PSI). Unlike conventional filters, the EXPEL does not retain the particulates it removes, so the pressure drop does not increase over time, saving energy costs and improving overall system performance.

#### HOW DOES EXPEL COMPARE TO OTHER CONVENTIONAL WATER SEPARATORS ON THE MARKET?

Conventional filters tend to remove water using the cyclonic method rather than the patented multi directional vanes and clarification chambers inside the EXPEL. These vanes and chambers force the coalescence of all water into tiny droplets which are then removed by the filter allowing a 99.9999% removal rate of the water, and emulsion fluids (oil & water mix) Cyclonic separators experience notable drops in performance when the air velocity is irregular, and are problematic with stop/start air flow unlike EXPEL, which reaches optimum performance within a fraction of a second.

#### I ALREADY HAVE EXISTING COMPRESSED AIR FILTERS INSTALLED, BUT STILL SEE WATER. WILL THE EXPEL HELP?

Yes, the EXPEL is designed to remove water, emulsion fluids (oil/water mix) and particles down to 1 micron. Conventional filter/regulators commonly perform at around 20 to 50 micron, much less than the EXPEL. The EXPEL has significantly better water removal performance than traditional filter/regulators. Most common conventional compressed air water separators achieve less than 92% efficiency compared with the EXPEL's 99.9999%.

#### WHY ARE YOU CONFIDENT THAT EXPEL IS MORE EFFICIENT THAT COMPETITOR PRODUCTS?

Conventional water separators rely on both a consistent flow and velocity to work efficiently. Due to the unique, patented technology within the EXPEL, it will perform to it's maximum efficiency regardless of the flow rates, and even under pulsed stop/start conditions.

#### WHAT SIZE EXPEL DO I NEED?

Typically, the most common EXPEL filter for automotive and workshop applications is the EXPEL 30. This units handles a compressed air flow from 5-30 CFM (140-850 L/Min). Most tools and compressed air equipment will state on a label what compressed air usage they require. They will also state an operating pressure in Bar or PSI. The EXPEL units are designed for use in applications up to 15 bar (217 PŚI)

#### **IS EXPEL A WATER SEPARATOR, OR AN AIR DRYER?**

EXPEL is what we believe to be the most efficient liquid water separator available for compressed air, and is capable of removing 99.9999% of the liquid water and emulsion fluids in your system. Technically speaking, a dryer reduces the temperature of the air which causes water vapour (water in a gas state) to condense into water droplets which are then removed. In real-life conditions, this is extremely hard to achieve. Dryers also cannot handle liquid water, and require a water separator upstream to remove this liquid, therefore if water already exists in the system before the dryer it will will pass through the dryer. EXPEL removes ALL liquid water present in the compressed air at the point the EXPEL is located, be this before or after an air dryer.

#### I ALREADY HAVE A REFRIGERANT DRYER - DO I NEED EXPEL?

In some cases, you will find that a refrigerant dryer is installed but you are still seeing water present in the airline at point of use. If this is the case then we would strongly advise installing an EXPEL at point of use in conjunction with your existing dryer to remove final droplets of water. However if you are not experiencing any water issues then there is no need to install the EXPEL product.

# expel

#### SIZING AND SELECTION DRAINING WHAT HAPPENS IF I FORGET TO DRAIN THE EXPEL UNIT?

Failure to drain the unit will inevitably result with the EXPEL becoming filled with water and particulate. The first indicator of this is seeing water present in the air after the EXPEL. This is what we refer to as the unit floading. If this does occur, simply open the drain tap, or clear any debris that may be blocking the autodrain and drain the water from the unit. For good measure, we would suggest removing the internal filter, cleaning it and replacing it. This is to ensure that no particulate matter becomes entrained within the unit.

#### HOW DO I DRAIN THE WATER FROM THE EXPEL UNIT?

The EXPEL unit can be fitted with a tap that you can manually open to drain any of the collected water. As the amount of water being removed can vary as temperature and humidity levels change, the easiest option is to install an automatic drain valve (talk to your distributor for advice on selecting the correct autodrain). This will open itself to drain any water preventing the need for manual intervention to drain the unit.

#### CAN I INSTALL AN AUTODRAIN ONTO THE EXPEL UNIT?

Yes, the EXPEL has a ½" male BSPT thread at the base of the unit that an automatic drain can be attached too. We offer a range of automatic drains, so if you would like some assistance selecting the correct autodrain for your application, please get in touch and we will happily offer advice.

#### HOW OFTEN DOES THE EXPEL UNIT REQUIRE DRAINING?

The EXPEL is incredibly efficient at removing water, so you may have a need to drain the unit more frequently than conventional filters. The water removal frequency can change dependent upon the temperature and climate of the environment; therefore we suggest you drain as frequently as you feel necessary starting daily or for the first few days twice per day until you are confident you are draining frequently enough.

#### IF I INSTALL 1 EXPEL UNIT DIRECTLY AFTER THE COMPRESSOR, WILL THIS SERVICE THE ENTIRE GARAGE / WORKSHOP?

We would advise against this, as the air out of the compressor will be warmer than the ambient air temperature in the workshop. This can cause condensation and water to appear further down the line. We recommend point of use installations, particularly when protection to tyre changers, etc, is required.

#### WILL THE EXPEL REPLACE MY EXISTING CONVENTIONAL AIR FILTERS?

The EXPEL will replace existing filters that remove water, and particulates down to 1 micron.

#### I'M EXPERIENCING RUST BUILD UP IN MY TOOLS, WHAT IS THE SOLUTION?

The development of rust within your tools is caused by liquid water entering the tool from the compressed air line. Installing an EXPEL filter at point of use ensures that all the water is removed, preventing the build up of rust and scale and prolonging the service life of your pneumatic tools significantly.

#### HOW EASY IS EXPEL TO INSTALL?

EXPEL is designed to remove liquid water, and ideally needs to be installed as close to the point of use as possible. Installation is straightforward as there is no mains power requirement, only simple plumbing is required.

#### WHERE DO I NEED TO POSITION THE EXPEL IN MY COMPRESSED AIR SYSTEM?

The EXPEL 30 is a point of use filter. We recommend installation within 6 metres of point of use. This is to minimise the effects of temperature reduction after the filter, preventing downstream condensation.

#### WHAT IS POINT OF USE?

Point of Use is the tool or equipment that is using the compressed air. This could be anything from a tyre changer to a pneumatic hand tool.

#### WHY DO I NEED TO INSTALL EXPEL AT POINT OF USE?

Installing the EXPEL at point of use ensures that all liquids and particulates are eliminated from the compressed air when it reaches your equipment.

#### WHAT SIZE PIPEWORK DOES THE EXPEL 30 FIT?

The EXPEL 30 is designed to fit either ½" or ¾" pipework. The unit is supplied as standard with a ¾" BSPT thread in the head, and within the box there are flush fitting adaptors to reduce the ¾" BSPT thread to ½" BSPT thread fittings

#### MY TOOLS REQUIRE A LUBRICATOR, WHERE DO I INSTALL EXPEL IN RELATION TO THIS?

If a tool requires a lubricator, this must be installed AFTER the EXPEL unit. The EXPEL will remove all liquids and oils, so would remove any oil introduced by a lubricator if the EXPEL was installed after this.

#### DOES EXPEL COST ANYTHING TO OPERATE?

The simple answer is NO. There is no power requirements, and no consumable related costs associated with the EXPEL unit so the only cost involved is for the initial unit purchase.

#### HOW DOES EXPEL WORK?

The internal Expel filter works by creating an impacting turbulent air path thus coalescing any liquids and solids present in the compressed air line during the first stage of filtration. As part of this initial phase Expel removes 96% of all contamination while during the second stage the internal Unitary Vertical Body (UVB) polishes the compressed air still further thus removing the final 4% before exiting the filter air outlet. The filter is manufactured from a strong polymer material, so it never needs replacing – ever. Dependent on the contamination of your upstream air maintenance is kept to a minimal but an annual "spring clean" is generally advised. Simply remove the internal filter, give it a wash and replace it. It's that simple.

#### WHAT IS THE INDICATOR FOR ON THE TOP OF THE EXPEL UNIT?

The indicator on the top of the unit is to provide a visual warning that the unit is under pressure. Once the system is pressurised, the indicator will turn RED. The locking mechanism within the unit will prevent the unit being opened when under pressure.



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Your local contact



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