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FREQUENTLY ASKED QUESTIONS



EXPEL 30 FILTER & AUTO DRAIN SET
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ABOUT EXPEL

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 worlds 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 30 UNIT REQUIRE ELECTRICAL POWER OR MAINTENANCE?

No power source is required. If needed, the Automatic Float Drain can be easily dismantled for servicing and cleaning.

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.

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 IS THE EXPEL 30 UNIT MORE EFFICIENT THAN TYPES OF WATER SEPARATORS?

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.

EFFICIENCY

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 SOLID PARTICULATES AS WELL AS LIQUID WATER AND OIL EMULSION FLUIDS?

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 liquid water 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.

SIZING AND SELECTION

WHAT SIZE EXPEL DO I NEED?

Typically, the most common EXPEL filter for automotive and workshop applications is the EXPEL 30. This unit 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 PSI)

WILL THE EXPEL REPLACE MY EXISTING CONVENTIONAL AIR FILTERS?

The EXPEL will replace existing filters that remove water, oil emulsion fluids, 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.

I ALREADY HAVE A REFRIGERANT DRYER – DO I NEED EXPEL?

Yes. Often refrigerant dryers are perceived as the most cost-effective way to achieve dry compressed air, but they are not without their pitfalls.

A refrigerant dryer is specifically designed to rapidly reduce the temperature of the compressed air, and this rapid reduction causes water vapor (water in a gas state) to condense into liquid water.

To stop this high volume of water travelling through your compressed air system, a coalescing water separator has to be installed after the dryer. These filters are typically around 95% efficient, allowing 5% of the produced water to continue into your compressed air.

Most commonly it is liquid water that creates problems with pneumatic tools and equipment; from impact wrenches through to tire changers. Liquid water will displace the oils required to lubricate tools and this can cause detrimental damage causing seal failures, juddering or equipment seizure and in particularly cold weather this water will freeze and expand fracturing internals and equipment casings.

If an Expel filter is installed at each point of use, or prior to any expensive and important pneumatic equipment you are guaranteeing protection to that item from liquid water, oil carryover and any solid particles as small as 1 micron are removed.

It may be possible to completely remove the refrigerant dryer as the Expels provide sufficient protection to your equipment. As the EXPEL requires no power, consumables or replacement filter elements the cost savings achieved by no longer needing a refrigerant dryer along with its associated service and operating costs would be significant.

INSTALLATION

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 Expel does not require any electrical power, 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 18 ft. of point of use. This is to minimize 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 tire 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 oil emulsion fluids, so would remove any oil introduced by a lubricator if the EXPEL was installed after this.

HOW OFTEN DO I NEED TO REPLACE THE FILTER ELEMENT?

What makes the EXPEL so unique, is that you NEVER need to replace the filter element. There is nothing that becomes blocked over time like conventional filters.

In exceptionally dirty airlines, you may find that you get a blockage occur within the unit from large particles or pipe scale. To remove this, you can simply dismantle the unit, clean any debris and reassemble with ease.

ARE SPARE PARTS AVAILABLE?

Yes, all components of the EXPEL are available to buy independently as a spare, however no ongoing replacement parts are necessary. A spare part will only be required if the unit is accidentally damaged.

OPERATION

DOES EXPEL COST ANYTHING TO OPERATE?

The simple answer is NO. There are 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. However, if you have particularly dirty air lines then we would recommend that you simply dismantle and clean the internal elements of the unit when necessary. The internal element does not need replacing.

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 pressurized, the indicator will turn RED. The locking mechanism within the unit will prevent the unit being opened when under pressure.

DRAINING

HOW DO I DRAIN THE EXPEL UNIT?

The EXPEL 30 unit comes equipped with an Automatic Float Drain. This float drain is designed to discharge liquids and particulates extracted from your compressed air system. The Auto Float Drain is screwed directly to the base of the EXPEL unit and has an operation pressure up to 232 psi. A 6 mm diameter plastic tube can be connected to the base of the drain to control the flow of the discharge fluid into a suitable container for disposal. The Automatic Float Drain can be easily dismantled for servicing and cleaning if required.

FURTHER FAQ'S

DOES THE EXPEL 'CONSUME' COMPRESSED AIR?

The EXPEL does not 'consume' any of the air that a compressor produces. This 'volume' or 'flow' of air passes directly through the Expel unit.

This means that if the air flow is 100L/min entering the EXPEL, it will be 100 L/Min exiting the Expel.

I HAVE INSTALLED MY EXPEL UNIT AND AM EXPERIENCING A HIGHER THAN STATED PRESSURE DROP. WHY IS THIS?

The maximum pressure drops you should experience from a correctly installed EXPEL unit is 0.1 bar (1.45 psi). If you are experiencing higher pressure drops than this after installing the EXPEL, undertake the following actions to help identify the cause:

1. Is the unit installed in the correct orientation? On the top of the unit are directional flow arrows. These need to be facing away from the compressor, and towards the end of the air line.
2. Is there a blockage within the unit? The unit will need to be disassembled and inspected for a blockage.

I HAVE INSTALLED MY EXPEL UNIT AND AM EXPERIENCING A REDUCTION IN AIR FLOW, WHY IS THIS?

If you are experiencing a reduction in 'flow' this would suggest that some of the produced air is being consumed or lost elsewhere in the system. This is unlikely to be caused by the EXPEL if it has been installed correctly. We suggest checking to see:

1. Is there an autodrain unit or manual drain tap fixed to the base of the EXPEL? – Air should not be flowing freely out of the base of the Expel unit.
2. Is there air any leaking from the connections in / out of the EXPEL?
3. Is there any air leakage from the base of the EXPEL?
4. Is the drain tap / Autodrain continually leaking air?

If any of these are being experienced, please refer to the installation manual provided within your EXPEL's box.



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REMA TIP TOP - Tire Repair Materials

TUBE REPAIR MATERIALS

- Tube Repair Vulcanizing Patches
- Cold Vulcanizing Fluid
- Specialty Tube Repair Valves and Hardware
- Tube Repair Kits

TIRE REPAIR MATERIALS

- Radial Repair Units
- Bias Repair Units
- Plug Stem Repair
- UNIVERSAL Repair Units

OTR RETREAD PRODUCTS

- OTR Retread Radial Repair Units
- OTR Retread Bias Repair Units
- OTR Retread Cements
- Extruder Guns
- OTR Retread Cushion Gums & Repair Cords
- OTR Retread Rope Rubber
- OTR Retread Precure Cushion Gum

RETREAD & SPECIALTY RUBBER PRODUCTS

- Cushion Gum
- Rope Rubber
- Vulcanizing Compounds
- Retread Rubber Products - Specialty Chemicals

TEMPORARY REPAIR PRODUCTS

- Emergency Repairs
- Inserting Tools

CHEMICAL PRODUCTS

- Cements
- Pre-Buff Cleaners
- Bead Sealer/Innerliner Sealer
- Specialty Chemical Products

TIRE MOUNTING LUBRICANTS

- Universal Mounting Paste
- Liquid Mounting Lubricants
- Mounting Compounds
- Tire Mounting Lubricant Brackets, Brushes, Swabs

EQUIPMENT

- Tire Spreaders
- Extruders
- Regroover
- Thermopress II
- Thermopress EM
- Replacement Parts
- VULCSTAR Vulcanizing Machine and Accessories
- Bead Seaters
- EXPEL 30 Filter & Auto Drain Set

TIRE SERVICE CABINETS AND KITS

- Tire Service Cabinets and Kits

SHOP SUPPLIES

- Tire Repair Hand Tools
- Buffing Tools
- Cutting Tools
- Markers and Crayons
- Gloves
- Hand Cleaners
- Tire Talc
- Wheel Service Tools

AIR PRODUCTS

- Air Chucks
- Air Hoses
- Air Vacuum
- Air Compressor Accessories
- Gauges
- Couplers and Nipples

TIRE VALVES & HARDWARE

- Snap-In Valves
- Clamp-In Valves
- Specialty Valves
- Valve Accessories

TIRE BALANCING PRODUCTS

- PrecisionBalance Balancing Compound
- Wheel Weights Tools

TPMS

- TPMS Valve Rebuild Kits
- TPMS Tools & Kits
- TPMS Sensors and Replacement Valves
- TPMS Valve Caps