An Antifreezer combines alcohol vapor with moisture in a pneumatic system. The mixture, when it condenses to a liquid, will not freeze and clog or damage the devices in the circuit.

There are two types of Antifreezers:
- Compressor Intake type
- Pressure-Line type (see the "Parts List").

**WARNING: INSTALLATION AND MOUNTING**

The user of these devices must conform to all applicable electrical, mechanical, piping and other codes in the installation, operation or repair of these devices.

**INSTALLATION!** Do not attempt to install, operate or repair these devices without proper training in the technique of working on pneumatic or hydraulic systems and devices, unless under trained supervision. Compressed air and hydraulic systems contain high levels of stored energy. Do not attempt to connect, disconnect or repair these products when a system is under pressure. Always exhaust or drain the pressure from a system before performing any service work. Failure to do so can result in serious personal injury.

**MOUNTING!** Devices should be mounted and positioned in such a manner that they cannot be accidentally operated.

**INSTALLATION**

Both types of Antifreezers are available with either 1½” NPT or 2” NPT ports. Four tapped holes are drilled in the top of the body casting for bracket mounting (customer furnished), if desired. See the "Outline Dimensions".

Install the intake type Antifreezer between the air filter and the intake port of the air compressor. Because alcohol is highly flammable, the intake type should not be used under conditions of high ambient temperature at the compressor intake, heavy-duty compressor service, or combinations of both.

The line-type Antifreezer should be installed upstream from the point in the circuit requiring the most cold weather protection. To eliminate fire hazard, do not install near the air compressor. A vented cutout cock should be installed in the supply to the Antifreezer to reduce line pressure to atmospheric while replenishing alcohol.

**ADJUSTMENT**

No adjustments are required for the line-type Antifreezer. The intake type has a control rod on top of the Antifreezer for regulating the evaporation rate of the alcohol. When the rod is completely pulled up, the wick is encased in an adjustable sleeve, and evaporation is stopped. As the rod is lowered into the bowl, the sleeve is forced down to expose the wick to air flow. The farther the control rod is lowered, the faster alcohol evaporates into the system.

**OPERATION**

Changing temperatures affect humidity and may cause moisture to form in a pneumatic circuit. If this moisture converts to ice during freezing weather, the circuit can become clogged and fail to function. An Antifreezer combines methyl alcohol with the moisture by means of a porous wick extending from the bowl up into the air stream. The resulting mixture will not freeze when condensed to a liquid.

The intake-type Antifreezer functions at atmospheric pressure, while the line type is used with operating pressures up to 150 psi (10 bar).
MAINTENANCE

Before freezing weather begins, clean the bowl and wick assembly with a nonflammable solvent. A drain plug is located at the bottom of the bowl.

Check the alcohol level daily during cold-weather operation, making sure the one - quart bowl is filled to near maximum. A depth gage is affixed to the filler cap.

Turn off the compressor before checking the alcohol level or refilling the intake - type Antifreezer. Before checking or refilling the line-type Antifreezer, vent line pressure to atmosphere through the cut-out cock. If pressure is not exhausted when the filler cap is first loosened, a small stream of air will escape between the cap and bowl through a small hole drilled in the cap. Because of the fillercap safety factor, and to avoid overfilling, never refill the Antifreezer through the wick cap.

Only methyl alcohol should be used in the Antifreezer. Permanent types of antifreeze do not evaporate fast enough to provide adequate protection for a pneumatic system.

**PARTS LIST**

(In Order of Disassembly)

<table>
<thead>
<tr>
<th>REF.</th>
<th>QTY.</th>
<th>DESCRIPTION</th>
<th>Part No.</th>
<th>OLD Part No.</th>
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<td></td>
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<td>ANTIFREEZER, Compressor-Intake Type, Complete (1½&quot; NPT)</td>
<td>R431000004</td>
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<td>ANTIFREEZER, Pressure-Line Type, Complete (2&quot; NPT)</td>
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<td>-543722-00000</td>
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<td>ASSEMBLY, Filler Cap Nut and Rod</td>
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<td>PLUG, Drain</td>
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* Recommended spare parts to be retained in stock at all times.
1. WARNING: FLUID MEDIA
AVENTICS pneumatic devices are designed and tested for use with filtered, clean, dry, chemical free air at pressures and temperatures within the specified limits of the device. For use with media other than air or for human life support systems, AVENTICS must be consulted. Hydraulic cylinders are designed for operation with filtered, clean, petroleum based hydraulic fluid; operation using fire-resistant or other special types of fluids may require special packing and seals. Consult the factory.

2. WARNING: MATERIAL COMPATIBILITY
Damage to product seals or other parts caused by the use of noncompatible lubricants, oil additives or synthetic lubricants in the air system compressor or line lubrication devices voids AVENTICS warranty and can result in product failure or other malfunction. See lubrication recommendations below.

AIR LINE LUBRICANTS! In service higher than 18 cycles per minute or with continuous flow of air through the device, an air line lubricator is recommended.* (Do not use line lubrication with vacuum products.) However, the lubricator must be maintained since the oil will wash out the grease, and lack of lubrication will greatly shorten the life expectancy. The oils used in the lubricator must be compatible with the elastomers in the device. The elastomers are normally BUNA-N, NEOPRENE, VITON, SILICONE and HYTREL. AVENTICS recommends the use of only petroleum based oils without synthetic additives, and with an aniline point between 180° F and 210° F.

COMPRESSOR LUBRICANTS! All compressors (with the exception of special “oil free” units) pass oil mist or vapor from the internal crankcase lubricating system through to the compressed air. Since even small amounts of non-compatible lubricants can cause severe seal deterioration (which could result in component and system failure) special care should be taken in selecting compatible compressor lubricants.

3. WARNING: INSTALLATION AND MOUNTING
The user of these devices must conform to all applicable electrical, mechanical, piping and other codes in the installation, operation or repair of these devices.

INSTALLATION! Do not attempt to install, operate or repair these devices without proper training in the technique of working on pneumatic or hydraulic systems and devices, unless under trained supervision. Compressed air and hydraulic systems contain high levels of stored energy. Do not attempt to connect, disconnect or repair these products when a system is under pressure. Always exhaust or drain the pressure from a system before performing any service work. Failure to do so can result in serious personal injury.

MOUNTING! Devices should be mounted and positioned in such a manner that they cannot be accidentally operated.

4. WARNING: APPLICATION AND USE OF PRODUCTS
The possibility does exist for any device or accessory to fail to operate properly through misuse, wear or malfunction. The user must consider these possibilities and should provide appropriate safeguards in the application or system design to prevent personal injury or property damage in the event of a malfunction.

5. WARNING: CONVERSION, MAINTENANCE AND REPAIR
When a device is disassembled for conversion to a different configuration, maintenance or repair, the device must be tested for leakage and proper operation after being reassembled and prior to installation.

MAINTENANCE AND REPAIR! Maintenance periods should be scheduled in accordance with frequency of use and working conditions. All AVENTICS products should provide a minimum of 1,000,000 cycles of maintenance free service when used and lubricated as recommended. However, these products should be visually inspected for defects and given an “in system” operating performance and leakage test once a year. Where devices require a major repair as a result of the one million cycles, one year, or routine inspection, the device must be disassembled, cleaned, inspected, parts replaced as required, rebuilt and tested for leakage and proper operation prior to installation. See individual catalogs for specific cycle life estimates.

6. PRODUCT CHANGES
Product changes including specifications, features, designs and availability are subject to change at any time without notice. For critical dimensions or specifications, contact factory.

*Many AVENTICS pneumatic valves and cylinders can operate with or without air line lubrication; see individual sales catalogs for details.

LIMITATIONS OF WARRANTIES & REMEDIES
AVENTICS warrants its products sold by it to be free from defects in material and workmanship to the following:
For twelve months after shipment AVENTICS will repair or replace (F.O.B. our works), at its option, any equipment which under normal conditions of use and service proves to be defective in material or workmanship at no charge to the purchaser. No charge will be made for labor with respect to defects covered by this Warranty, provided that the work is done by AVENTICS or any of its authorized service facilities. However, this Warranty does not cover expenses incurred in the removal and reinstalation of any product, nor any downtime incurred, whether or not proved defective.

All repairs and replacement parts provided under this Warranty policy will assume the identity, for warranty purposes, of the part replaced, and the warranty on such replacement parts will expire when the warranty on the original part would have expired. Claims must be submitted within thirty days of the failure or be subject to rejection.

This Warranty is not transferable beyond the first using purchaser. Specifically, excluded from this Warranty are failures caused by misuse, neglect, abuse, improper operation or filtration, extreme temperatures, or unauthorized service or parts. This Warranty also excludes the use of lubricants, fluids or air line additives that are not compatible with seals or diaphragms used in the products. This Warranty sets out the purchaser's exclusive remedies with respect to products covered by it, whether for negligence or otherwise. Neither, AVENTICS nor any of its affiliates will be liable for consequential or incidental damages or other losses or expenses incurred by reason of the use or sale of such products. Our liability (except as to title) arising out of the sale, use or operation of any product or parts, whether on warranty, contract or negligence (including claims for consequential or incidental damage) shall not in any event exceed the cost of replacing the defective products and, upon expiration of the warranted period as herein provided, all such liability is terminated. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. No attempt to alter, amend or extend this Warranty shall be effective unless authorized in writing by an officer of AVENTICS Corporation.

AVENTICS reserves the right to discontinue manufacture of any product, or change product materials, design or specifications without notice.