

ECONOMIZER TREATMENT LIQUID

Low-Temperature Exhaust Gas Soot Deposits Preventer

Technical Information

Physical Data

Appearance:	Green/blue-colored neutral product containing special metal salts. Fully miscible with water.
Specific gravity:	Approximately 1.19 kg/l
Flash point:	None
pH (1% solution):	≈ 7
Contains:	Inorganic Nitrates (NOS)

Description

Active blend of mineral-based salts, containing slag modifiers and carbon oxidation catalyst.

Advantages

- ▶ Effective above 200°C
- ▶ An easily dosed liquid
- ▶ Complete coverage of the entire exhaust gas unit
- ▶ Greatly improved heat transfer
- ▶ Neutralizes sulfuric acid
- ▶ Reduces corrosion and fire risk

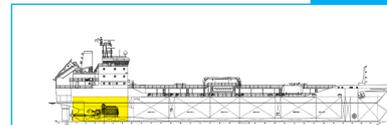
Application

Today's main propulsion units have low exhaust gas outlet temperatures. This is due to increased engine and turbo blower efficiency. Lower gas temperatures are also the result of running at reduced power. The low temperature and reduced gas volume give increased soot deposition and subsequent corrosion. The increased deposition greatly reduces the thermal efficiency of the economizer. As the "dew point" is often reached in the unit, causing the generation of sulfuric acid, the corrosion process is greatly accelerated.

ECONOMIZER TREATMENT LIQUID is a specially developed liquid that is easily dosed into the system, using a special Uniservice Injection Unit. The special air-assisted nozzles create a fine mist so that the liquid vaporizes on contact with the hot gas. The vapor mixes intimately with the exhaust gases, and the active material is dispersed throughout the system in microscopic particles. These tiny particles have an extremely large "active surface area" and being lightweight, they remain in the gas fully dispersed. This ensures that all parts of the economizer are efficiently covered. In the past, powder products have been developed for this purpose. However, their large particle size and greater weight make them difficult to inject efficiently, so they cannot reach all areas requiring treatment. This leads to product wastage and ineffective cleaning of the upper areas, where most of the soot is deposited.

ECONOMIZER TREATMENT LIQUID catalyzes the post-combustion process, resulting in modified soot particles that are dry and non-adherent. The resulting deposit is more friable and can be more easily removed by the action of the soot-blowers.

USAGE AREAS



Tank Cleaning and Maintenance

PACKAGING

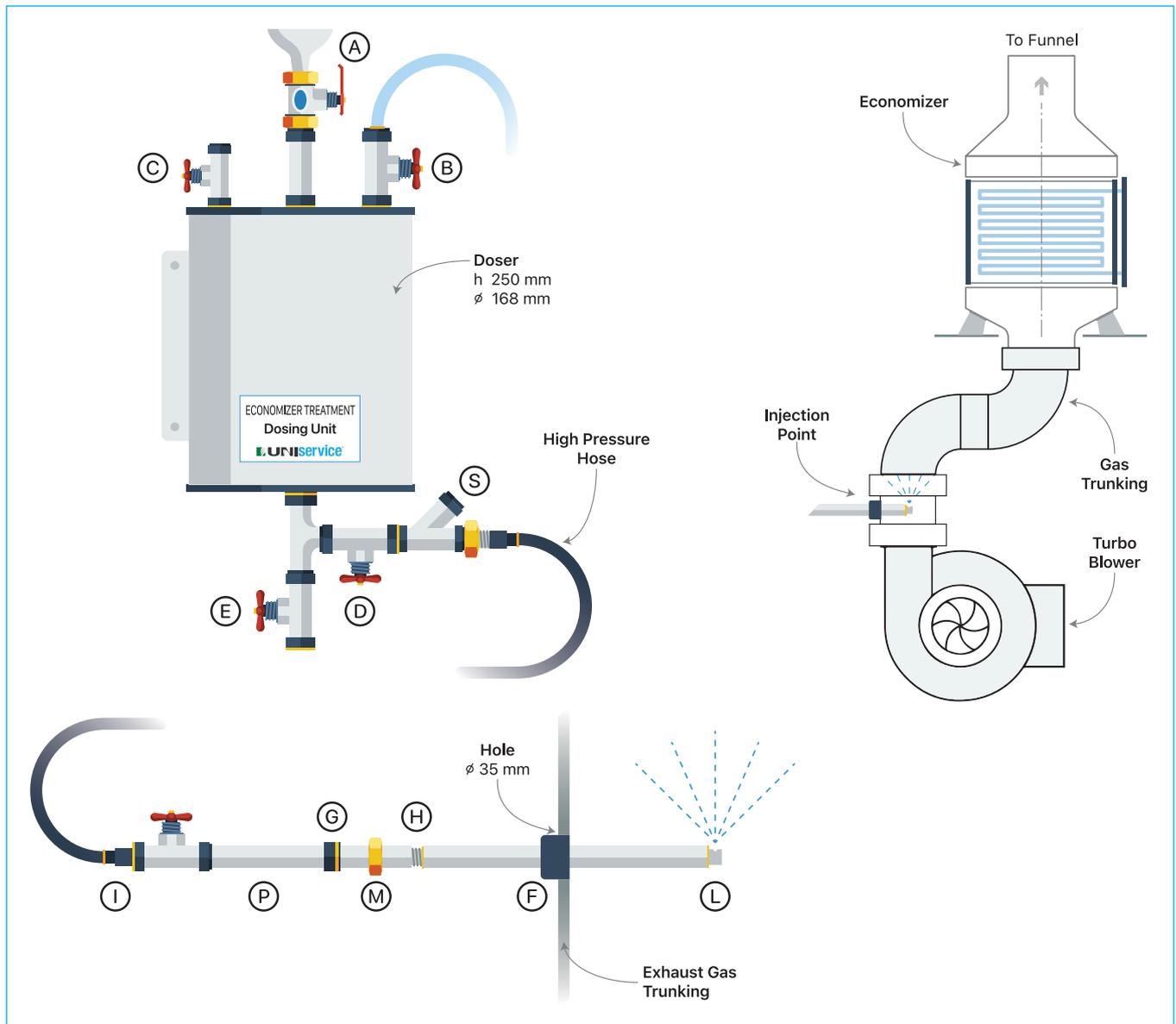


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Exhaust Gas Cleaning System

Schematic of Dosing Unit and Probe for ECONOMIZER TREATMENT LIQUID



Parts Description

- | | |
|------------------------------------|--|
| (A) 1/2" Filling Valve And Tundish | (H) 3/4" Nipple |
| (B) 1/2" Compressed Air Inlet | (I) 1/2" Valve Probe |
| (C) 1/4" Air Cock Relief Valve | (L) Spray Nozzle |
| (D) 1/2" Solution Outlet | (M) Bushing |
| (E) 1/2" Drain Valve | (S) 1/2" Strainer |
| (F) 3/4" Socket | (P) 1/2" Probe Leght 750 mm, |
| (G) 3/4" Cap | High Pressure Hose: 1.5 m each length. |
| | Probe Material: Stainless Steel - Titanium Steel |

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Assembling Instruction

1. Choose a position in the GAS TRUNK, located about 1 to 2 meters above the turbo blower, where the probe needs to be positioned. Drill a 35 mm hole into the plate of the gas trunk and weld the 3/4" socket in place (F).
2. Insert the probe inside the 3/4" socket and screw in the 3/4" nipple (H). The PROBE can slide inside and outside to adjust the exact position of the spray nozzle in the middle of the trunk.
3. Tighten the 3/4" union (G) securely. If the probe hasn't been used for a long time and requires repair or cleaning, it can be pulled out simply by releasing the 3/4" union (G).

When assembling the PROBE, take care to **position it upright**. The doser should be rigidly connected to the pipe-work system with the tundish in a vertical and uppermost position. Ensure that the drain valve is piped to a nearby open drain. Leave access above the tundish for pouring liquid into the unit. The air cock should be easily accessible from the front of the unit.

Operating Procedure

1. Ensure that all doser valves are closed.
2. Open the drain valve (E) and air cock (C) allowing the doser to empty.
3. Close the drain valve (E).
4. Measure the chemical to be added into a small jug or bucket and ensure there are no undissolved particles.
5. Open the filling valve (A) and carefully pour the chemical into the tundish, taking care not to overflow it.
6. When the tundish is empty, close the filling valve (A) and the air cock (C).
7. Open the compressed air inlet valve (B) immediately after the outlet valve (D) and (I) to the injection probe (P).

After a few minutes, when all the chemical has been injected, refill the doser with fresh water and repeat the above operation to flush the system.

Note: the average dosage is 5 liters every 3 days of ECONOMIZER TREATMENT LIQUID. Dosage can be adjusted according to the heating surface area.

Directions for Use

ECONOMIZER TREATMENT LIQUID is designed to prevent major build-ups of soot in service. If the economizer is badly fouled, we strongly recommend a pre-cleaning of the unit using Uniservice Gas Side Cleaner or ALKA-CLEAN.

Dosage Instructions

1–2 liters of ECONOMIZER TREATMENT LIQUID are required for every 1000 m² of heating surface area. This amount should be increased or decreased depending on economizer design and fuel consumption.

Dosage Period

ECONOMIZER TREATMENT LIQUID should be injected daily or twice daily after soot-blowing.

Dosing Equipment

The product must be dosed via the specially developed Uniservice Injection Unit, which is made of materials suitable for prolonged contact with ECONOMIZER TREATMENT LIQUID.

Injection Points

In most cases, a single injector can be placed into the exhaust system immediately after the turbocharger gas outlet. Uniservice Engineers will inspect and make detailed recommendations for exact positioning.

Product Dose

Uniservice Gas Side Cleaner Liquid provides a portable Economizer Washdown Unit for low and high-pressure jetting of economizers, etc. This is a complete pump, hose, and lance system that takes suction directly from the Gas Side Cleaner Liquid drum. Vessels with permanent semi or fully automatic water-washing systems can have a Uniservice Pre-Wash Injection Unit retrofitted. This can be custom-built to give total control over the timing of the whole operation. Please contact Uniservice Unisafe for further details.

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Health Safety and Environment (HSE)

Uniservice Unisafe Srl have carefully developed their products to minimize the safety risks and environmental impact of using their products. However, Uniservice advises that, prior to using its products, users should read in detail the accompanying Safety Data Sheet and ensure that its products are applied within the required HSE regulations of the country in which the user operates. Best practice and safety requirements should be followed which will likely include method statements and risk assessments, together with any specific requirements of the user's own company HSE requirements.

Important Notice

While the descriptions, designs, data and information contained herein are presented in good faith and believed to be accurate, this information is provided for your guidance only. Because many factors may affect processing or application/use, we recommend that you do a test to determine the suitability of a product for your particular purpose prior to use. No warranties of any kind, either expressed or implied, including warranties of merchantability or fitness for a particular purpose, are made regarding products described or designs, data or information set forth, or that the products, designs, data or information may be used without infringing the intellectual property rights of others. In no case shall the descriptions, information, data or designs provided be considered a part of our terms and conditions of sale. Further, you expressly understand and agree that the descriptions, designs, data and information furnished by Uniservice Unisafe Srl hereunder are given gratis, and Uniservice Unisafe Srl assumes no obligation or liability for the description, designs, data and information given or results obtained, all such being given and accepted at your risk. Product images are for reference purposes only.

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