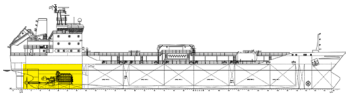
Part # DA02
25 L 0731851223781

AIR COOLER CLEANER

Cleaning of Diesel Engine Air Cooler

Technical Information

USAGE AREAS



Carbon Remover

PACKAGING

Physical Data

Appearance:	Clear liquid
Specific Gravity:	1.1 at 20°C
Flash Point:	Above 70°C (158°F). In solution: None
Corrosive Action:	Metal: None.
	Plastic, Rubber, Paint: make a preliminary test.

Description

Uniservice Unisafe AIR COOLER CLEANER (ACC) is a liquid blend of highly active cleaning and corrosion inhibiting compounds. ACC has been developed for safe, fast, and economical in-service cleaning of the air handling systems of turbocharged diesel engines. By using ACC, airborne contaminants that have been carried into and deposited on scavenger air trunks, air coolers, and inlet valves are removed. This ensures that all surfaces are kept clean and free of deposits. ACC keeps the air cooler clean, maintains the scavenge air system clean, and stabilizes the air cooler at continuous peak efficiency.

Application

By using ACC and Uniservice Unisafe ACC Injection System, fouling of air coolers is reduced, improving heat transfer and engine efficiency. Pressure drop across the air cooler and air temperature after the air cooler are kept to a minimum. This minimizes fire hazards from the build-up of grease and residue. Downtime and expenses related to periodic dismantling of the air handling system for cleaning are eliminated. Scavenging efficiency is improved by reducing deposit build-up around scavenging ports. ACC contains water-displacing surfactants that form a monomolecular film throughout the air handling system, protecting the metals and reducing the adherence of airborne contaminants.

Directions for Use

Usage

ACC is suitable for all types of diesel engines. The ACC/fresh water mixture has no flashpoint, and cylinder lubrication is not impaired.

Dosage

The following table shows our recommendation for the initial dosage per air cooler, based on one injection every 24 hours. This can be varied based on the performance of the pressure drops across the air coolers.

Suggested Daily Dosage Table 1

Engine HP	ACC / Water Solution Ratio (liters)
6,000 – 12,000	1 : 3
12,000 – 24,000	1. 5 : 4. 5
24,000 >	2 : 6

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Handling Instruction

Precautionary Measures:

- Protect the eyes.
- ACC concentrate actually has a very high flash point, but it should be kept away from open fire.
- If ACC comes in contact with the skin, rinse it off with plenty of water, and then apply an oily cream.

Application

ACC can be applied by **immersion**, **circulation**, or **injection**. For immersion and circulation, cleaning time is considerably reduced by heating the chemical to a maximum of 50°C (122°F). If the air coolers are very dirty, it may be advisable to use undiluted ACC by means of the circulation method to thoroughly clean the system before commencing ACC injection treatment.

Immersion Method

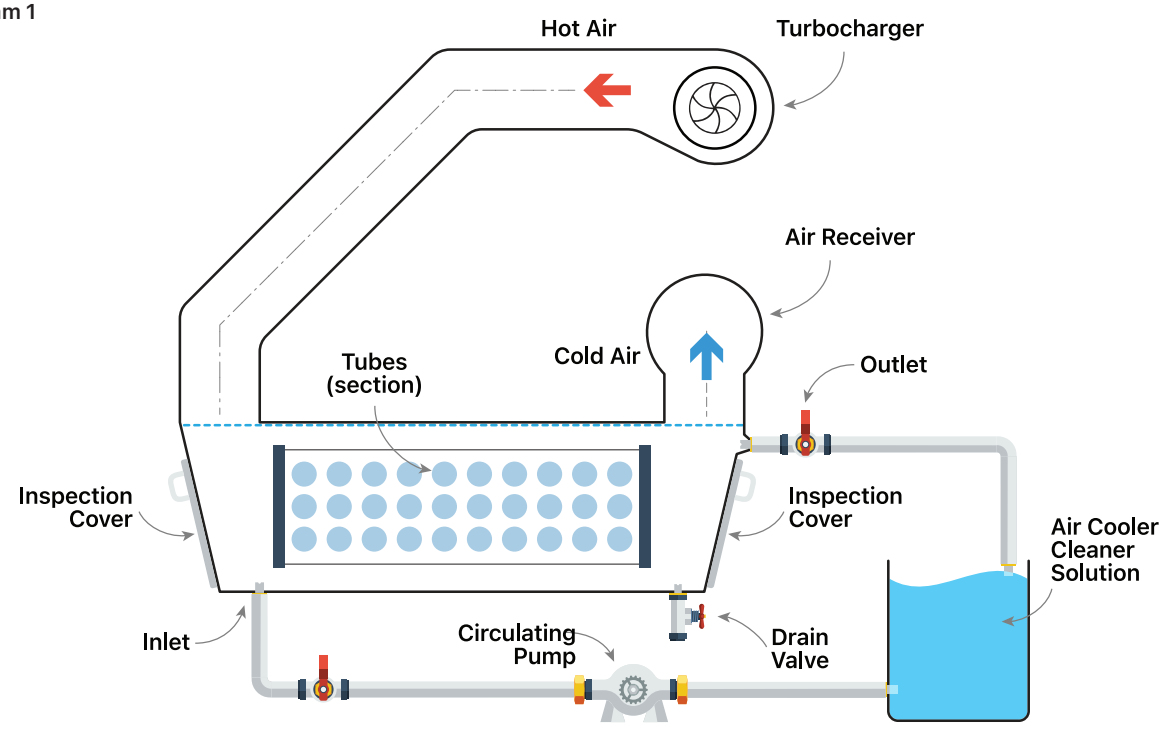
The dismantled parts to be cleaned are placed in a tank specially designed for the purpose, which has been filled with undiluted ACC. Movement is achieved by means of compressed air. The surface is washed with a high-pressure water hose or compressed air. ACC can be reused for several cleanings. Cleaning time: 5-12 hours. (Generally ACC is used undiluted)

Circulation Method for In-Place Cleaning

See **Diagram 1**

- Generally ACC is used undiluted.
- Arrange to collect ACC at the bottom of the unit with a drain back to a drum.
- Circulate by pump and/or spray (airless spray or steady low-pressure flow - do not atomize) on deposits through access doors. A perforated pipe placed between tubes is effective for reaching normally inaccessible tubes.
- Thoroughly saturate deposits and allow them to stand for a minimum of one hour.
- Wash off with a high-pressure water hose and drain to a collecting tank.
- Dry with compressed air.

Circulation Method for In-Place Cleaning
Diagram 1



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Cleaning Fuel Oil Heaters or Lube Oil Coolers
See **Diagram 2**

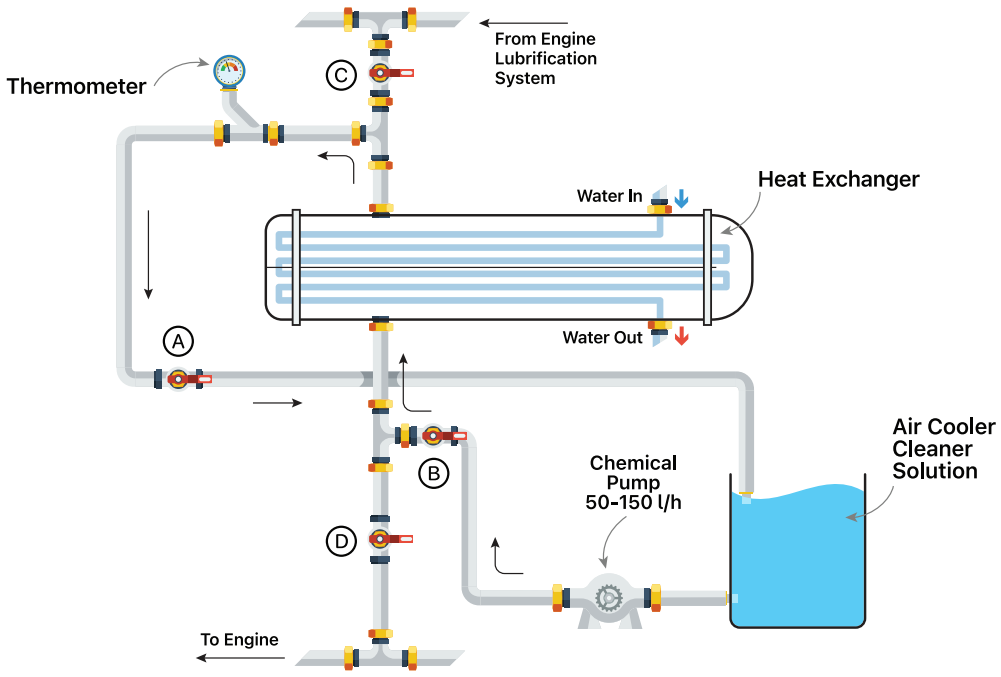
For best results, ACC should be circulated through the heat exchange unit for 6 to 8 hours, depending on the amount of deposits present and the time since the last cleaning. When ACC is used as a preventive maintenance item periodically, circulating times can be substantially reduced. ACC solution can be saved and reused until it becomes thoroughly contaminated.

- ACC is used undiluted - Use 3/4" or 1" pipe.
- Flushing the unit with kerosene before using ACC will prevent excessive dilution.
- During cleaning, solids may accumulate in the reservoir drum. These solids may be removed by allowing the solution to settle and decanting clean liquid from the top.
- When the cleaning action of ACC has been reduced by excessive dilution with fuel oil, the material can then be dumped into the bunker tanks and burned. For circulating ACC, a pump with a large discharge volume should be used to ensure rapid flow through the unit.
- A 50- or a 200-liter drum fitted with a wooden cover containing an opening for the discharge pipe can be used as a reservoir. Use enough ACC to fill the unit, piping, and enough additional material to keep the reservoir one-third full.
- Take pump suction from the reservoir and discharge into the lowest connection on the heat exchanger.
- Pipe the overflow from the highest point on the heat exchanger back into the reservoir.
- A fine mesh screen should be adapted to the reservoir return for removing large pieces that become dislodged during the cleaning operation.
- To aid the dislodging of loosened particles, a method of backflushing can be used, as indicated in the schematic drawing showing recommended hook-ups for the use of ACC.

Cleaning Fuel Oil Heaters or Lube Oil Coolers
Diagram 2

Valves Cleaning Position	
A	Open
B	Open
C	Closed
D	Closed

Valves Normal Position	
A	Closed
B	Closed
C	Open
D	Open



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Cleaning of Diesel Engine Air Cooler

Injection Method Using ACC (Daily) Underway
(To be diluted with water as per Dosage Table 1)
See **Diagram 3**

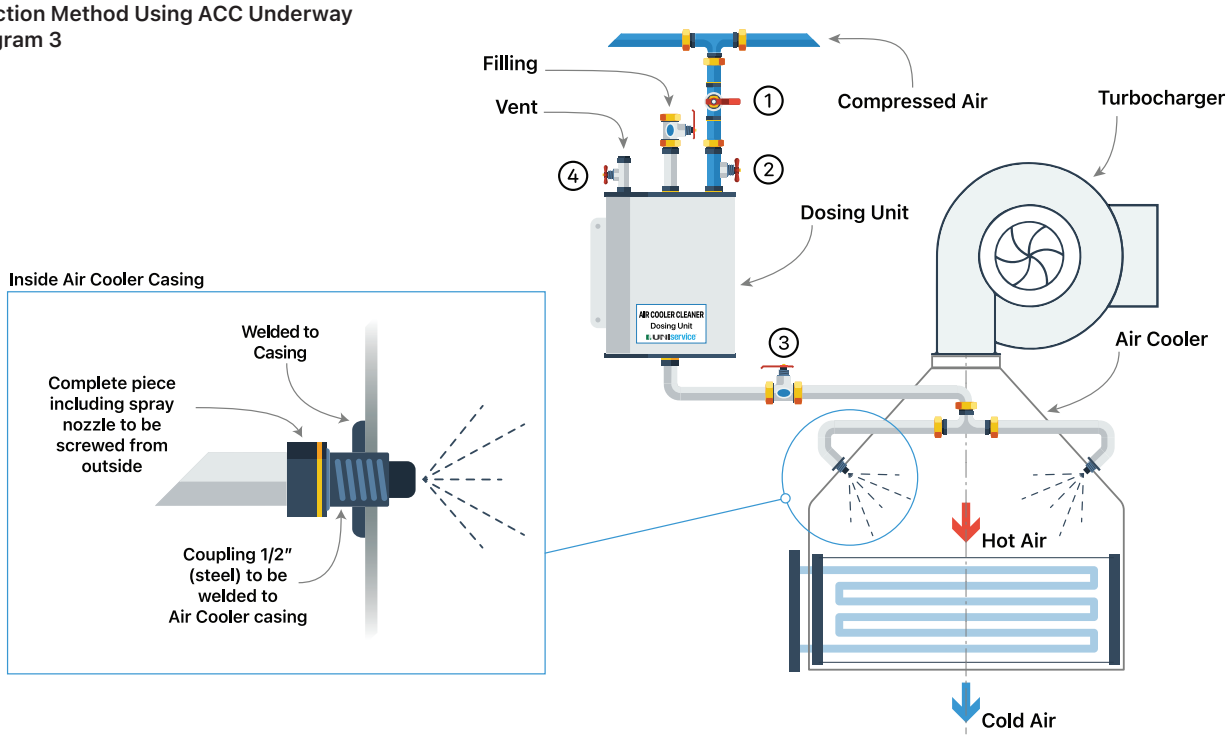
Simple, safe application of Uniservice Unisafe AIR COOLER CLEANER (ACC) is provided by the use of the Uniservice Unisafe ACC Injection System.

- This system consists of a steel 6-liter dosage tank complete with all necessary valves, an atomizer, and required fittings for 6x8 mm copper tubing.
- The dosage tank may be installed in any appropriate place in the engine room.
- Copper tubing (6x8 mm) is fitted from the dosage tank to the atomizer, from the dosage tank to the casing on the pressure side of the turbo blower (equalizing line), and from the ship's compressed air system to the atomizer.

By means of the Uniservice Unisafe special ACC injection system, a mixture of ACC and fresh water in a ratio of 1:3 (observe the mixture ratio exactly) is injected into the air channel between the turbo blower and the air cooler. This is followed by a second injection of fresh water only. The injection procedure, as per the ACC injection system diagram, is as follows:

1. Fill the dosing tank with the required quantity of ACC fresh water mixture. Close the tank.
2. Open Valve 1 (compressed air for atomizer).
3. Open Valves 2 and 3; the ACC/fresh water mixture is injected in about 5-10 minutes.
4. Close Valves 1, 2, and 3.
5. Open Valve 4 to vent air from the tank.
6. Fill the tank with fresh water. Close the tank. Then repeat steps 2-5.

Injection Method Using ACC Underway
Diagram 3



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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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