

Edwards EMF20

Edwards EMF20 Oil Mist Filter Instruction Manual

Model: EMF20 (Part Number A462-29-000)

1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of the Edwards EMF20 Oil Mist Filter. The EMF20 is designed to reduce oil mist emissions from rotary vane vacuum pumps, ensuring compliance with health and safety regulations and protecting the working environment. It is suitable for use with Edwards RV12, E1M18, and E2M18 vacuum pump models.

2. SAFETY INFORMATION

Always observe standard safety precautions when working with vacuum equipment and oil. Failure to follow these instructions may result in personal injury or damage to the equipment.

- Ensure the vacuum pump is switched off and isolated from the power supply before installation or maintenance.
- Allow the pump and filter to cool down before handling, as surfaces may be hot.
- Wear appropriate personal protective equipment (PPE), including gloves and eye protection, when handling vacuum pump oil or filter elements.
- Dispose of used oil and filter elements according to local environmental regulations.
- Do not operate the filter if any components are damaged or missing.

3. PRODUCT OVERVIEW

The Edwards EMF20 Oil Mist Filter is an exhaust filter assembly designed to capture oil mist from the exhaust of compatible vacuum pumps. It features a durable plastic body with a semi-transparent lower half for easy oil level monitoring. The filter is highly efficient, achieving 99.999% DOP test efficiency, and is azide proof. An integral pressure relief valve opens if the oil element becomes blocked, preventing overpressure.

3.1 Key Features

- Effective oil mist emission reduction.
- Integral pressure relief valve for safety.
- Semi-transparent body for visual oil level inspection.

- High filtration efficiency (99.999% DOP test).
- Azide proof construction.
- Compatible with Edwards RV12, E1M18, and E2M18 rotary vane vacuum pumps.

3.2 Components

The EMF20 filter assembly includes the main filter unit, an oil element, and an odor element. It is supplied with an NW25 clamp, centering ring, O-Ring, and an NW25 to 3/4 BSP adapter for connection.



Figure 1: Edwards EMF20 Oil Mist Filter with its oil element, odor element, clamp, and O-ring.



Figure 2: The Edwards EMF20 Oil Mist Filter unit, showing its grey upper body and semi-transparent lower body.

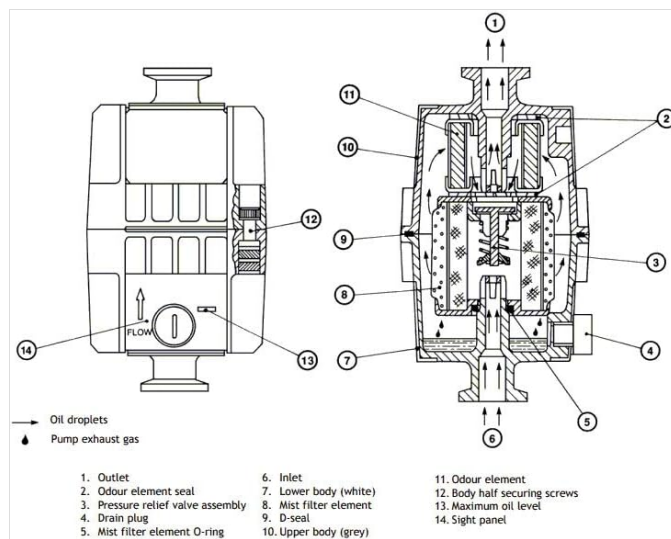


Figure 3: Internal diagram of the EMF20 Oil Mist Filter, illustrating the flow path of pump exhaust gas and oil droplets, and identifying key components such as the outlet, odor element seal, pressure relief valve, drain plug, mist filter element, inlet, lower body, D-seal, and upper body.

1. Outlet
2. Odor element seal
3. Pressure relief valve assembly
4. Drain plug
5. Mist filter element O-ring
6. Inlet
7. Lower body (white)
8. Mist filter element
9. D-seal
10. Upper body (grey)
11. Odor element
12. Body half securing screws
13. Maximum oil level
14. Sight panel

4. SPECIFICATIONS

Feature	Specification
Model	EMF20
Part Number	A462-29-000
Compatible Pump Models	Edwards RV12, E1M18, E2M18
Inlet & Exhaust Flanges	ISO KF25 (NW25)
Height	191 mm (approx. 7.5 inches)
Width	118.4 mm (approx. 4.7 inches)
Weight	1.5 lb (approx. 0.68 kg)

Feature	Specification
Material	Durable Plastic Body
Odor Filter Element Type	Activated Carbon
Replacement Odor Filter Part No.	A223-04-077
Oil Filter Element Type	Epoxy Impregnated Glass Fiber
Replacement Oil Filter Part No.	A223-04-199
Filtration Efficiency	99.999% DOP test

5. SETUP AND INSTALLATION

The EMF20 Oil Mist Filter is designed for easy installation onto the exhaust port of compatible Edwards vacuum pumps. Ensure the pump is turned off and depressurized before beginning installation.

5.1 Installation Steps

1. Identify the exhaust port on your vacuum pump.
2. Place the O-ring (5) onto the pump's exhaust port.
3. Position the adapter (4) over the O-ring and onto the pump's exhaust port (6).
4. Place the centering ring and O-ring (2) onto the adapter.
5. Mount the EMF20 filter (1) onto the adapter, ensuring the "FLOW" arrow on the filter body points upwards, indicating the direction of exhaust gas flow.
6. Secure the filter to the adapter and pump using the provided clamp (3). Tighten the clamp firmly but do not overtighten.



Figure 4: The Edwards EMF20 Oil Mist Filter shown installed on an Edwards vacuum pump, demonstrating its typical operational setup.

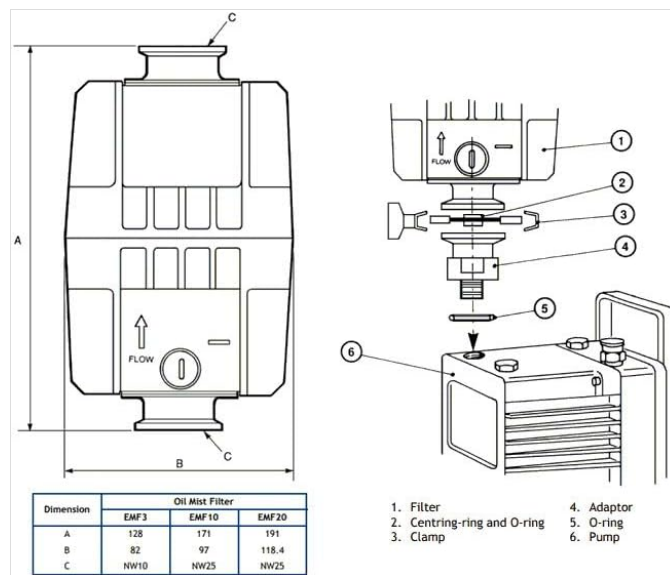


Figure 5: Diagram illustrating the connection of the EMF20 filter to a vacuum pump, with numbered components: 1. Filter, 2. Centering-ring and O-ring, 3. Clamp, 4. Adaptor, 5. O-ring, 6. Pump. Also includes a table of dimensions (A, B, C) for EMF3, EMF10, and EMF20 models.

6. OPERATION

Once installed, the EMF20 operates automatically with the vacuum pump. The filter captures oil mist, which then drains back into the lower body of the filter. The semi-transparent lower body allows for visual monitoring of the collected oil level. Ensure the oil level does not exceed the maximum indicated level (13 in Figure 3).

In the event of a blocked oil filter element, an integral pressure relief valve will open to prevent excessive pressure buildup within the system. While this ensures safety, a persistent opening of the relief valve indicates that the oil filter element requires immediate replacement.

7. MAINTENANCE

Regular maintenance of the EMF20 Oil Mist Filter is crucial for optimal performance and longevity. This primarily involves monitoring the oil level and replacing the filter elements.

7.1 Monitoring Oil Level

Periodically check the oil level through the semi-transparent lower body (7) or sight panel (14) of the filter. If the collected oil reaches the maximum level indicator (13), it should be drained. To drain, place a suitable container beneath the drain plug (4) and carefully open the plug. Close the drain plug securely after draining.

7.2 Replacing Filter Elements

The oil filter element (8) and odor filter element (11) will eventually become saturated and require replacement. The frequency of replacement depends on the application and usage intensity. A noticeable increase in oil mist emissions or the persistent opening of the pressure relief valve indicates that the oil filter element needs replacement. A decrease in odor absorption indicates the odor filter element needs replacement.

1. Ensure the vacuum pump is off and isolated from power.
2. Allow the filter to cool and drain any collected oil.
3. Carefully loosen the body half securing screws (12) and separate the upper and lower bodies of the filter.
4. Remove the old oil filter element (8) and odor filter element (11).
5. Clean any accumulated debris from the filter housing.
6. Install new oil filter element (Part No. A223-04-199) and odor filter element (Part No. A223-04-077). Ensure they are seated correctly.

7. Reassemble the filter bodies, ensuring the D-seal (9) and odor element seal (2) are properly in place. Tighten the securing screws evenly.
8. Verify all connections are secure before restarting the pump.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Excessive oil mist from exhaust	Saturated oil filter element	Replace oil filter element (A223-04-199)
Pressure relief valve constantly open	Blocked oil filter element	Replace oil filter element (A223-04-199)
Unpleasant odor from exhaust	Saturated odor filter element	Replace odor filter element (A223-04-077)
Oil leakage from filter body	Improperly seated seals or damaged body	Check D-seal (9) and odor element seal (2) for proper seating. Inspect filter body for cracks. Ensure securing screws are tightened evenly.

9. WARRANTY AND SUPPORT

For warranty information, technical support, or to purchase genuine replacement parts, please contact your authorized Edwards distributor or the supplier from whom you purchased this product. Always use genuine Edwards replacement parts to ensure optimal performance and maintain warranty validity.

For further assistance, refer to the official Edwards documentation or visit their website.

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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