

Danfoss 071N0107

Danfoss BFP 21 L3 Oil Burner Pump (Model 071N0107) Instruction Manual

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1. INTRODUCTION

This instruction manual provides essential information for the safe and efficient installation, operation, and maintenance of the Danfoss BFP 21 L3 Oil Burner Pump, model 071N0107. Please read this manual thoroughly before attempting any procedures to ensure proper function and to prevent damage or injury.

2. SAFETY INFORMATION

WARNING: To prevent health and bodily harm, installation, maintenance, initial commissioning, repairs, and other inspections must be carried out by authorized professionals, such as contractual installation companies or qualified technicians. Improper installation or service can lead to serious injury or equipment damage.

- Always disconnect power to the burner system before performing any work on the pump.
- Wear appropriate personal protective equipment (PPE) during installation and maintenance.
- Ensure all connections are secure and leak-free to prevent fire hazards.
- Do not operate the pump if it is damaged or malfunctioning.

3. PRODUCT OVERVIEW

The Danfoss BFP 21 L3 is a high-quality oil burner pump designed for reliable fuel delivery in heating systems. This model, 071N0107, is a direct replacement for the BFP 31 series and features a left rotation and an 8 mm shaft diameter.



Figure 3.1: Front view of the Danfoss BFP 21 L3 Oil Burner Pump. This image shows the main body of the pump with its shaft extending forward, ready for connection to a motor.



Figure 3.2: Side view of the Danfoss BFP 21 L3 Oil Burner Pump, highlighting the product label. The label clearly displays "BFP 21



Figure 3.3: Rear view of the Danfoss BFP 21 L3 Oil Burner Pump, focusing on the shaft connection point. This perspective shows the robust construction around the shaft, indicating its connection to the burner motor.

Key Features:

- Model: BFP 21 L3 (071N0107)
- Replaces: BFP 31 series
- Rotation: Left
- Shaft Diameter: 8 mm

4. SETUP AND INSTALLATION

Installation of the Danfoss BFP 21 L3 oil burner pump should only be performed by a qualified technician. Incorrect installation can lead to system malfunction, fuel leaks, or fire hazards. The following steps are general guidelines; always refer to the specific burner manufacturer's instructions and local codes.

1. **Preparation:** Ensure the burner system is completely shut down and power is disconnected. Close all fuel supply valves.
2. **Removal of Old Pump:** Carefully disconnect fuel lines and electrical connections from the old pump. Note the orientation and connections for proper reinstallation. Remove mounting bolts and detach the old pump.

3. **Mounting the New Pump:** Position the new Danfoss BFP 21 L3 pump, ensuring the shaft aligns correctly with the motor coupling. Secure the pump using the appropriate mounting bolts.
4. **Connecting Fuel Lines:** Connect the suction and return fuel lines to the designated ports on the pump. Ensure all connections are tight and sealed to prevent leaks.
5. **Electrical Connections:** Reconnect electrical wiring according to the burner manufacturer's diagram. Verify correct polarity and secure all connections.
6. **Priming the Pump:** After installation, the pump may need to be primed to remove air from the fuel lines. Follow the burner manufacturer's procedure for priming.
7. **Leak Check:** Before full operation, perform a thorough leak check on all fuel connections.
8. **Initial Start-up:** Restore power and fuel supply. Carefully observe the burner's operation during initial start-up, checking for proper ignition and fuel delivery.

5. OPERATING INSTRUCTIONS

The Danfoss BFP 21 L3 oil burner pump operates as an integral part of your heating system. Once properly installed and commissioned by a professional, its operation is typically automatic, controlled by the burner's control unit.

- **Automatic Operation:** The pump will engage and deliver fuel when the burner control calls for heat.
- **Pressure Adjustment:** The pump's pressure is factory-set but may require fine-tuning during commissioning. This adjustment should only be performed by a qualified technician using appropriate pressure gauges.
- **Monitoring:** Regularly monitor your heating system for unusual noises, fuel odors, or performance issues.

6. MAINTENANCE

Regular maintenance is crucial for the longevity and efficient operation of your Danfoss BFP 21 L3 oil burner pump and the entire heating system. All maintenance procedures should be carried out by a qualified service technician.

- **Annual Inspection:** Have the pump and burner system inspected annually by a professional. This includes checking for leaks, wear on components, and proper pressure settings.
- **Filter Replacement:** The oil filter (if external to the pump) should be replaced regularly as recommended by the burner manufacturer. A clogged filter can strain the pump and reduce efficiency.
- **Nozzle Cleaning/Replacement:** The burner nozzle should be cleaned or replaced as part of routine maintenance to ensure proper fuel atomization.
- **Shaft Seal Check:** Inspect the pump shaft seal for any signs of oil leakage. Address any leaks promptly.

7. TROUBLESHOOTING

This section provides general troubleshooting tips. For complex issues or if you are unsure, always contact a qualified service technician.

Problem	Possible Cause	Solution
Burner fails to ignite	No fuel delivery, air in lines, clogged nozzle, faulty ignition.	Check fuel supply, prime pump, inspect/clean nozzle, check ignition system. Contact technician.
Pump making unusual noise	Air in fuel, worn bearings, foreign object.	Check for air leaks in suction line, inspect pump. Contact technician.

Problem	Possible Cause	Solution
Oil leakage from pump	Loose connections, damaged seals.	Tighten connections, replace seals. Contact technician.
Inconsistent flame or poor combustion	Incorrect pressure, partially clogged nozzle, air in fuel.	Check/adjust pressure, clean/replace nozzle, bleed air. Contact technician.

8. SPECIFICATIONS

Below are the key specifications for the Danfoss BFP 21 L3 Oil Burner Pump (Model 071N0107).

- **Manufacturer:** DANFOSS
- **Model Number:** 071N0107 / 88.70100-0040
- **Product Dimensions:** Approximately 10 x 10 x 10 cm (3.94 x 3.94 x 3.94 inches)
- **Item Weight:** Approximately 1.08 kilograms (2.38 pounds)
- **Rotation:** Left
- **Shaft Diameter:** 8 mm
- **Batteries Required:** No
- **Batteries Included:** No
- **ASIN:** B07DCVM3WW
- **Date First Available:** April 15, 2022

9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact your authorized Danfoss dealer or service center. Keep your proof of purchase for warranty claims. Danfoss does not provide specific information regarding spare parts availability directly to end-users. Please consult with your authorized service provider for spare parts inquiries.