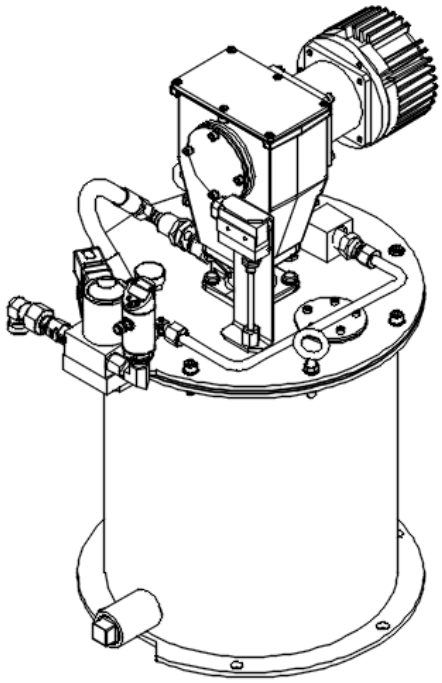
CFM Series Electric Lubrication Pump

User Manual

CFM-27/CFM-41/CFM-54



Ciaponi centralized lubrication systems since 1969 – Italy

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1. Safety Instructions

Scope of application

CFM electric lubricating pump is used for delivering lubricant quantitatively to the position where there is lubricating demand in a centralized lubricating system.

General Safety Instructions

N O T I C E

This operating manual is part of the equipment supply and must be always assured of availability to the operating and maintenance personnel. When the device is resold, this operating manual must be handed over and the safety instructions contained therein must be followed.

N O T I C E

In addition to this operating manual, care should be taken to comply with the applicable laws and regulations of the country of use.

1.1 General Safety Instructions

1) The products described are produced according to the latest technology. Risks, however, may arise from use that is not intended for its intended purpose and may result in injury to persons or damage to significant assets.
2) Any faults that may affect safety must be cleared immediately. In addition to these instructions, the general statutory regulations for accident prevention and environmental protection must be observed.
3) This product can only be used under suitable technical conditions and in accordance with the information in this manual when the potential danger is recognized.
4) All operations must follow the specified steps and requirements.
5) Any doubts about proper condition or proper assembly/operation must be promptly eliminated. Any operations are prohibited until the issue is clarified.
6) Always wear personal protective equipment.
7) Preventive measures and instructions of operation and working must be followed.
8) Safety-related protection and safety equipment shall not be disassembled, modified or otherwise affect

its function, and its integrity and function shall be checked regularly.

9) If the protective safety device is dismantled, it must be reassembled immediately after work and checked for proper function.

10) Do not use lubricating pump stations as standing or climbing aids.

1.2 User Training Requirements

Anyone who operate an CFM electric lubrication pump must be authorized and trained and they must be able to identify and avoid potential risks, which also includes knowledge of accident prevention regulations, first aid measures and local rescue facilities.

NOTICE

This electric lubrication pump should only be inspected, maintained, and repaired by specially trained technicians.

1.3 Personal Protective Equipment

Operators must provide suitable personal protective equipment for different operating positions and operating purposes.

1.4 Operation

The following regulations must be observed during commissioning and operation:

1) Any information in this manual and information in the referenced documents

2) Users should abide by all local laws and regulations.

1.5 Transport, Installation, Maintenance and Repair

1) All relevant personnel must be informed before starting work and observe precautionary measures and working instructions.
2) At low or high temperatures, maintenance and repair work may be limited (such as changes for the flow characteristics of grease), therefore, if possible, try to carry out maintenance and repair work at room temperature.
3) Before carrying out work, the machine into which the product will be integrated must be depressurized and protected against unauthorized restarts.
4) Through appropriate measures, ensure that movable or detachable parts are fixed during the working process to avoid inadvertently pinching hands and feet.
5) The assembling of the product must be done outside the working range of the moving parts, be sure to keep a proper distance from the heat or cold source. The function of other parts of the machine must

not be damaged by installation.

6) Observe the possible wear points and protect the corresponding parts.
7) All components used must be designed according to the maximum working pressure and the maximum/minimum ambient temperature.
8) No part of the lubrication pump shall be affected by torsion, shear or heavy pressure.
9) Check all the parts for contamination before use and clean if necessary.
10) Observe the specified tightening torques and be sure to use a calibrated torque wrench during tightening.
11) Avoid confusion or wrong assembly of disassembled parts. Label these sections accordingly.

1.6 Initial Operation / Daily Start

Be sure

1) All safety devices are fully functional.
2) All connections are properly connected and installed.
3) All labels on the product are complete, clearly visible and intact.
4) Illegible or missing warning labels must be replaced immediately.

1.7 Cleaning

1) Only use non-flammable cleaning agents that are suitable for the purpose of this product during cleaning process.
2) Do not use harsh cleaning agents.
3) Thoroughly remove the residual cleaning agent in the product
4) Do not use steam jets and high-pressure cleaners as electrical components may be damaged. Pay attention to the type of pump protection.
5) Cleaning work cannot be carried out on live parts.

1.8 Residual Risk

There is no residual risk when the CFM electric lubricating pump is used correctly, and all the prescribed maintenance / repair cycles /measures are followed.

1.9 Improper Use

DANGER

Any violation of this manual or usage beyond the norm may result in serious personal and property damage.

Predictable incorrect operation or improper use:

1. conveying of flammable or explosive medium;
2. the conveying medium can react with the material used by the pump;
3. beyond the specified ambient temperature range;
4. carry out no prescribed operation;

1.10 Disclaimer

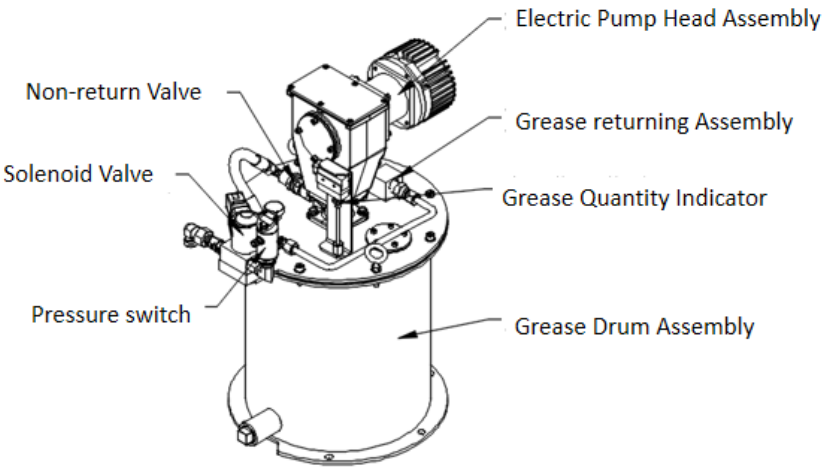
Ciaponi Centralized Lubrication shall not be liable for any damage to persons, objects, environment and/or property, whether intentional or not, caused by failure to comply with this Manual. In addition, all warranty claims will be rejected, which also applies to any and all collateral damages.

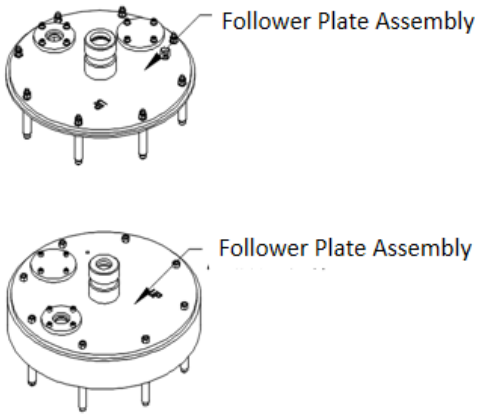
2. CFM Electric Lubrication Pump

CFM series electric lubricating pump is a kind of lubricating pump controlled by DC power supply. The output displacement of the grease is proportional to the speed of the motor, which is suitable for complex and changeable working conditions. The pump is mainly designed for centralized lubrication system, such as single-line sliding system, progressive lubrication system. The lubrication pump is driven by the rotary motion of the DC motor, and the pump head is converted into the up and down reciprocating motion of the parts in the pump tube through the eccentric crank mechanism. This pump is used in conjunction with a control system and is primarily designed for single-line centralized lubrication systems. When the lubricating point needs to be filled with grease, the motor and the solenoid valve are energized, and the lubricating pump works. When the lubricating operation is performed, the system pressure rises, the drive pressure switch starts and resets the control system, cuts off the power supply of the motor and the solenoid valve, the system releases the pressure, and enters the next lubricating cycle.

2.1 Component details

The electric lubricating pump is composed of grease drum assembly, electric pump head and tube assembly, follower plate assembly, solenoid valve assembly, grease quantity indicator and pipeline accessories. With characteristics of safety and reliable working, high working pressure, and easy to use, the electric lubricating pump is capable of conveying NLGI2 and below NLGI2 grease, which is widely used in centralized lubrication systems and the scope of application covers construction machinery, ports and other places that require centralized lubrication systems.





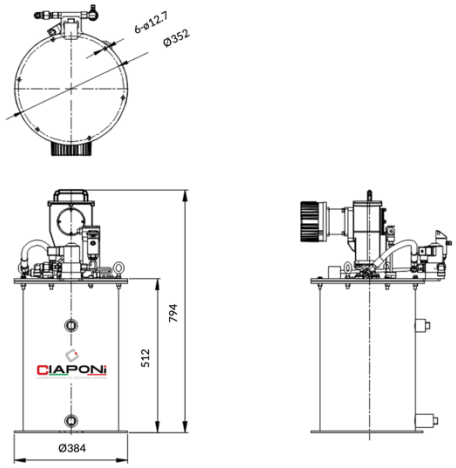
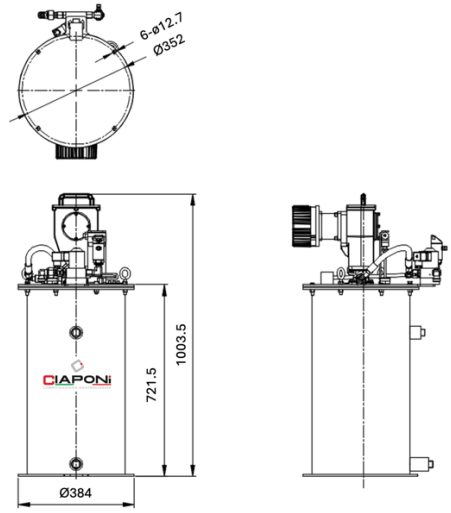
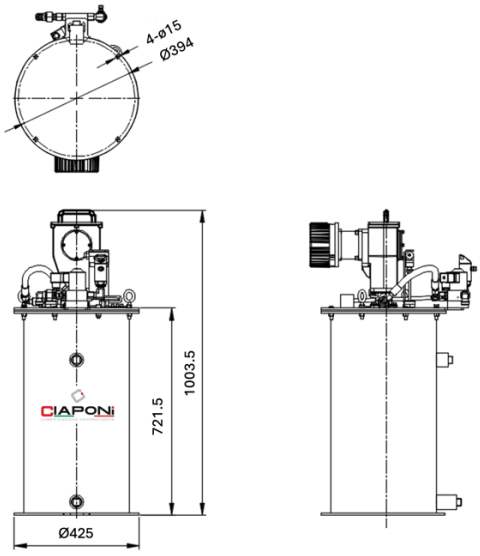
2.2 Performance Parameters

1. Power source：DC 24V
2. Grease outlet flow per stroke at room temperature: 1.8ml/stroke
3. Maximum delivery pressure: 30MPa
4. Motor Speed：1500RPM
5. Reduction Ratio：100：1/40:1/20:1/8:1
6. Operating voltage of solenoid valve：24VDC
7. Working Environment：-29℃ to 66℃
8. Applicable grease: grease of NLGI2 and below

2.3 Specification

Parameter / Data	CFM-27	CFM-41	CFM-54
Max Grease Weight	27Kg	41Kg	54Kg
Motor operating voltage	24VDC	24VDC	24VDC
Motor Power	200W	200W	200W
Maximum output pressure of lubricating pump	30MPa	30MPa	30MPa
Operating voltage of solenoid valve	24VDC	24VDC	24VDC
electrical interface of solenoid valve	DIN 43650	DIN 43650	DIN 43650
Outlet Thread（inner）	G 1/4	G 1/4	G 1/4

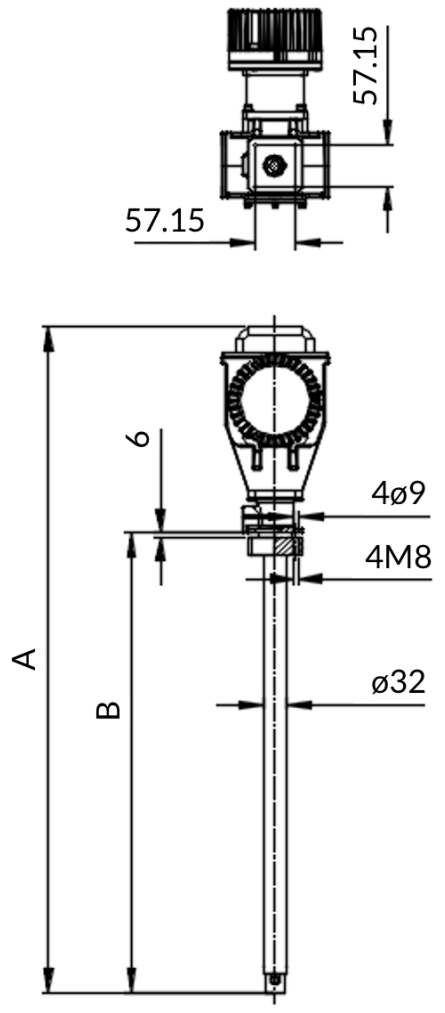
2.4 Dimensions

Model	Dimensions
CFM-27	
CFM-41	
CFM-54	

2.5 Electric Pump Head and tube assembly

The electric pump head assembly is an executive element of the CFM electric lubricating pump, which is driven by the rotary motion of the DC motor. The pump head is transformed into the up and down reciprocating motion of the parts in the pump pipe through the eccentric crank mechanism, which converts the electric energy into the mechanical energy of its output shaft; The pump tube assembly is composed of a transmission part, a booster part and an oil lift part, supplemented by a sealing part to increase the pumping capacity of the pump tube.

Dimensions as below chart

Model	A	B	Dimensions
EPP-16-A	348	630	
EPP-27-A	491	773	
EPP-41-A	690	972	
EPP-180-A	865	1146	

2.6 Non-return valve

The non-return valve can effectively ensure that the lubricant flows out of the lubrication pump.

2.7 Solenoid Valve Assembly

The solenoid valve assembly is used as a pressure relief device for the electric lubrication pump. A safety valve and pressure switch can be installed outside the solenoid valve. By setting the value of the pressure switch, the working pressure of the lubrication system can be changed. When the pressure in the pipeline reaches the set pressure, the lubrication system will release the pressure.

2.8 Grease Quantity Indicator

The grease quantity indicator could real-time display the grease quantity or signal feedback of the grease level.

2.9 Grease Returning Assembly

After the pipeline is depressurized, the grease returns to the drum through the grease returning component and flows into the bottom of the follower plate.

2.10 Follower Plate Assembly

The follower plate is closely matched with the drum wall, which can ensure that there is no lubricant residue on the drum wall during usage, and basically help to absorb the lubricant in the drum completely.

3. Trouble Shooting

1、The pump does not work.	
Failure cause	Measure
Power is not turned on	Check power supply and fuse, troubles hooting
Motor overheated	Turn off the power and restart after 10 minutes
The motor locks the rotor causing a trip	Eliminate the problem of high pressure, repair the lubrication pump
Gear set or shaft damaged	Repair the gear set or shaft
Broken fuse	Replace the damaged fuse and check the cause of overload
Pump motor reverse	Check whether the wiring of the motor is correct

2、Overrunning of pump	
Failure cause	Measure
Check the pump tube for damage or contamination	Repair, inspect or remove foreign objects
Leaked system components	Check the leaked area and repair it
3、Unstable pump operation	
Failure cause	Measure
Insufficient grease in the drum	Fill the pump with clean grease and start the pump until the grease overflows from the lubrication point
The follower plate is chucked and separated from the grease	Check the follower plate and repair damaged parts
The piston in the pump tube or non-return valve is severely worn	Replace the piston or check valve assembly in the pump tube
4、The pump runs normally, but the flow rate is low	
Failure cause	Measure
Motor speed setting is too low	Adjust motor speed
Failure of the non-return valve at the outlet or the inlet of the pump tube	Check and repair the abnormal parts of the inlet and outlet of the pump tube
5、Lubricant flows out of the safety valve	
Failure cause	Measure
System pressure setting is too high	Adjust pressure switch settings
Safety valve is damaged or contaminated	Replace it with a new safety valve