

# BARREL AND CONTAINER PUMP TUBE USER'S MANUAL


**MODEL NUMBER**  
**DEF-1000-B**

## F. MOVING AND TRANSPORT

The barrel pump and motor should have enough protective packing material included in the carton box. It is unable to bear improper external force, heavy load and so on. Please transport, stack and store the pump according to the instructions. Please keep the warehouse dry so to avoid damaging the pump tube and motor parts.

## G. TUBE MAINTENANCE

Clean the tube before maintaining!  
Please inspect the sliding bearing wearing after using some time. Replacing the shaft and bearing could extended the lifetime.

 **ATTENTION!**  
Please replace the sliding bearing and seal ring every 100~150 hours.

## H. PROBLEMS AND SOLUTIONS

PROBLEM	POSSIBLE CAUSE	CORRECTIVE ACTION
No flow rate OR Slow flow rate	Electric OR air source close.	Open the power source
	Motor failure, unable to turn	Check Motor
	Outlet closed	Open outlet valve
	Too big head lift	Shorten delivery distance and height
	Heavy liquid viscosity	Check the model with supplier
	Without liquids	Stop the pump
	Inlet blocking	Clean the inlet
Big Noise and Vibration	Liquids drain out	Stop the pump
	Motor overload	Check the liquid viscosity and head lift
		Replace the sliding bearing and seal ring
Pump tube leaking	Unworkable seal ring	Replace the coupler Replace the seal ring

## J. NOISE LEVEL

Under normal working conditions the noise emission from all models does not exceed the value of **80 db at a distance of 1 meter** from the electric pump.

## K. DISPOSING OF CONTAMINATED MATERIALS

In the event of maintenance or demolition of the machine, do not disperse contaminated parts into the environment.  
**Refer to local regulations for their proper disposal.**



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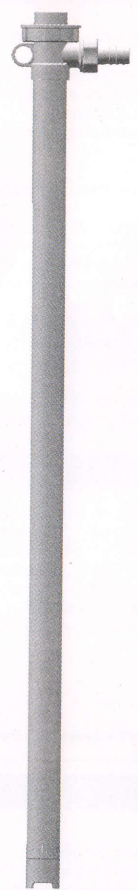
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 **WARNING:** Carefully read and understand all INSTRUCTIONS before operating. Failure to follow the safety rules and other basic safety precautions may result in serious personal injury.

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## A. SAFETY

Please read the operating instructions carefully and completely before operating, installation and maintaining.

### Before Using

1. There are high-speed rotating parts inside, any abnormal operation may cause unforeseen personal injury, please be sure to operate in strict accordance with these instructions;
2. Before installing and starting the barrel pump, the corresponding engineer must be familiar with the manuals as well as have the considerable qualification;
3. The installation and maintenance is required in strict accordance with the existing mechanical and electrical specification or standard operating;
4. The life time of spare parts will be affected by abrasion and corrosion, and some trouble will be caused by different operating environments. The operator has the responsibility to operate and maintain the pump accordingly. Please stop running when the pump is working improperly or there is obvious danger is occurring.
5. The pump should set up the reliable detection alarm system once it is installed at the possible endanger personal safety points.

### Operating

1. Be sure to wear protective clothing, protective eyewear and follow safety procedures when you are operating with corrosive and harmful substances;
2. Ensure the pump tube is inserted to the liquid before using and all the connections are tight, with no leakage and shedding. Make sure you are using the suitable hose during the dispensing of high temperature liquids.
3. The liquids temperature, viscosity and density should not exceed the upper limit.
4. Please install the filter in the tube bottom when delivering liquids with impurities or solids. In the meantime, please regularly check and clean to avoid blocking.
5. Ensure the motor is under closed status before connecting it to the power source. The pump must only be used under the surveillance of the operator. Close the motor immediately after dispensing. Run dry is not allowed for the pump.
6. Do not touch the tube bottom when the pump is connected to the power source. The high speed rotating impellers may cause damage or injury of the equipment and personal.
7. Make sure the pump tube is placed in the vertical position. Upending or laying the tube flat are prohibited. It is suggested to be put on the special holder. Meanwhile, please pay attention the damage or injury to environment and personal from the residual liquids.

## B. MACHINE DESCRIPTION

The drum and container pump tube are suitable for universal use, which are able to meet 80% applications. The pump material includes polypropylene, PVDF, stainless steel, aluminum alloy etc. Also apply to the transfer of low to middle viscosity liquid. The diversion hole designing could avoid the liquid leakage while the sealless structure could avoid any leakage caused by the damage of the mechanical seals. The outlet is G1-1/4 male thread which could connect different kinds of connectors conveniently.

There are two Motor drive modes for this pump tube: Electric and Air-operated. The pump tube and motor are connected by quick coupling, which can be assembled and disassembled within several seconds.

The modular designing integrate the least parts of tube and motor in order to convenient cleaning and maintenance without any special tools.

### ⚠ ATTENTION!

- Never operate the motors without pump.
- Never leave the pump unattended.
- Never dry run the pump.
- The pump should not be immersed deeper into the liquid than the outlet connection.

## C. TECHNICAL DATA

### C1. Structure Configuration

The pump tube consists of outer tube, drive shaft, impeller, suction inlet and bearing etc. Different liquids require different material pump tube like metal and non-metal. Furthermore, choose the tube length as per the liquids required height.

Attention: As the drive part, the motor includes electrical and air-operated types. Please choose the suitable power and anti-explosion grade according to the liquids application.

### Pump tube material:

Model#	Pump tube	Shaft	O Ring	Sliding bearing	Lenght
DEF-1000-B	PP	304SS	FKM	PTFE	1000mm

PS.: Some special liquids will require particular O-Ring.

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## D. OPERATING CONDITIONS

### D1. Environmental Conditions

#### Temperature

The pump operation temperature is affected by material. See below highest temperature: -PP: 50°C

#### D2 Viscosity:

The pump is enabled to transfer liquids under max. 200cps by the adjustable-speed motor. The common motor may cause overload during the dispensing of high viscosity liquids. The max. allowed viscosity is 200cps.

**Attention:** The flow rate and head lift of the pump will decrease when dispensing the varying degrees of viscosity liquids. Over the rated viscosity, the motor will be overloaded which may damage the motor.

#### D3 Proportion: Max.1.80.

**Attention:** The flow rate and head will decrease when delivering the high viscosity liquids.

**D4 Liquid:** Only apply to the liquids for cleaning. The filter will be necessary if the liquids include any solid so to avoid damage the motor shaft and bearing.

**D5 RPM of the barrel pump motor:** No-load speed 20000~22000rpm; Load speed around 11000rpm.

## E. INSTALLATION

Check if there has any damage or missed parts before opening the packing.

### Safety Check

- Electric source: The supply voltage must comply with the voltage specified on the nameplate.
- Temperature: The medium temperature has to be in accordance with the requirement.
- Viscosity and proportion: The medium viscosity and proportion must comply with the pump tube requirement.
- Corrosion resistance: Check if the pump material has the Chemical resistance with the medium.

### F1 Pump tube Installation

1. Put the pump tube into the transportation barrel or container. To ensure the pump tube is in the suitable position in the barrel, please fix it by the fixator.
2. Install outlet pipe: The outlet pipeline requires you to install a plastic hose or metal tube per the actual demand. The required screw is G1-1/4 with the 1" hose connector.

### ⚠ ATTENTION!

The non-metal screw is not allowed to connect the metal screw tube so as to avoid damaging the outlet.

3. The outlet must be supported when the tube is longer. The weight should not be undertaken by the pump in case out of shaping or tipping.

### F2 Motor Installation

1. Check the pump tube: If any connection is loose. The coupler and pump shaft could be able to rotate flexibly.
2. Check the Motor: Open the motor and run-in testing for short time to check if the power wire and switch are complete and well. Do not put hands to the motor output shaft.
3. Check the air motor: Check the air source if install the filtration and lubrication elements, and pressure regulating valve and silencer works very well in the air source inlet.
4. Put the motor coupler point to the pump tube and assemble it. Be sure the tube head is inserted into the motor head completely.
5. The location of motor and tube could be rotated by 360°, put the tube outlet adjusted to suitable position and lock the screw during installation. Please keep the pump outlet away from the motor power wire!

### F3 Start

Check all the connections for leakage. The tube liquid outlet should be well fixed in case the tube is thrown off pressure. Support the motor or tube with hands when starting the power or air source until it is running stable.

### F4 Running

Normally, the pump needs 3 minutes to pump out one 200L standard barrel. Staff supervision is needed during transporting. Close the motor once the liquid was pumped out, and pump dry running is prohibited.

The pump can not pump out the liquids completely. There will be around 2cm residual liquid in the bottom of the barrel. Tilting the barrel and pump again could reduce the residual liquid maximum.

Do not take out the running pump from liquid to other barrel.

### F5 Stop.

Power off the electronic or air source and stop the pump once the barrel liquid has been pumped out.

If the pump needs to be used in other barrels, please take it out until the liquid backflow but avoid the liquid polluting the environment.

### F6 Storage

Please take out the pump if it isn't used by some time. Clean it timely under corrosive or harmful liquids.

Keep putting the pump tube motor upwards. Backwards is prohibited in case the tube inside causes liquid backflow to the motor and is corrosive to the bearing or pump. Please place it on the specified holder so to avoid unexpected falling.