

# **MOVABLE SUCTION UNIT**

## **USER'S SERVICE MANUAL**



**MODEL: DF-506M**

*Technology product • Humanizing design • Environmental protection*

**ISO 13485    CE 2460    GMP**

## SPECIFICATIONS & CLASSIFICATION

	Model No.	<b>DF-506M</b>
	Machine size (cm)	L38 ×W28 ×H85
	Packing size (cm)	L42 ×W36 ×H95
	Machine Weight	12.0 kg
	Bottle Capacity	3000c.c. × 1pc
	Specification	Standard
	Vacuum Range	>650 mmHg
	Safety Device	Level float control
	Max. Flow	45 Liters / min
	Max. hp	200W 1/4 hp
	Warranty	One year

### IMPORTANT SAFEGUARDS

When using electrical products among the target population of adults, basic safety precautions should always be followed. Read all instructions before using. Important information is marked by these terms:

**DANGER**- Urgent safety information for hazards that will cause serious injury, death or product damaged.

**WARNING**- Important safety information for hazards that might cause serious injury.

**NOTE**- Information that you should pay special attention.

SAVE THESE INSTRUCTIONS. READ ALL THE INFORMATION BEFORE USING.

#### **△ DANGER**

The DF-506M MOVABLE SUCTION UNIT is a vacuum suction device designed and only for the collection of fluid materials in medical applications. Improper use during medical applications can cause injury or product damaged.

Suction unit should be operated under the strict accordance with appropriate procedures that have been established by a licensed medical authority. Checked all the accessories were assure proper fit before using.

To reduce the risk of electrocution:


1. Do not use while bathing.
2. Do not drop into or place in water or any other liquid.
3. Unplug immediately if the products has fallen into water.

#### **△ WARNING**

To reduce the risk of burns, electrocution, fire or injury to persons:

1. When the product is used by, on, near or invalids, close supervision is necessary.
2. Use the product only for its intended use as described in this manual.
3. Keep the power cord away from heated surfaces.
4. NEVER use while drowsy or asleep.
5. NEVER operate this product if
  - 1) It has a damaged power cord or plug.
  - 2) It is not working properly.
6. It has been dropped into water.  
High suction levels may cause tissue damage.
7. A pump containing aspirated fluid can be a source of contamination. Changing the filter and pouring out the liquid after the operation may reduce the infection risk. Operators should follow universal precautions, including wearing gloves, face shields or masks, and gowns.

### NOTE

- 1)  Type BF applied part
- 2) applied part is the surgical suction tube

**NOTE**-Other suggestions.

### Transportation & Storage

0°C – 70°C , 30 % - 90 %, 700 hPa-1060 hPa ( 0 – 3000 m ).

### Operation Environment

10°C – 50°C , 30 % - 90 %, 700 hPa-1060 hPa ( 0 – 3000 m )

## **Preservation & Handling**

The product should be preserved in a dry and well-ventilated place. It should not be placed in a preservation area for chemical drugs or where gas is generated

## **HOW TO OPERATE YOUR DF-506M MOVABLE SUCTION UNIT?**

- Before operating the unit, please make sure that the power cord of the unit is properly connected and the power supply is correct.
- Only qualified personal, doctors or nurses who had professional training are allowed to operate or use this unit.
- Before using the unit, make sure the connecting tube is correctly connected. The bottle and bottle lid are firmly closed.
- Connect the surgical suction tube (size: 6.5 x 11.5mm, length 180cm) to the <PATIENT> hole located on the top lid cover. Then connect the suction tube end to the suction catheter (#14, 14FG x 50 cm).
- There is one closed filter fixed in the middle of connecting tube. The filter has to be replaced immediately if overflow occurs or been polluted.
- The suction pressure should be used as doctor's instruction and can be adjusted by the regulator.
- Some water can be put in the bottle for easy wash but the chemicals are prohibiting from putting into the bottle to avoid breakage.
- The floating control is installed in the bottle. When water overflows, it can automatically close. To secure the pump's life, we suggest to pour out the liquid inside the suction bottle when water exceeds 1/2 level for safety and sanitation.
- Do not drop the equipment or avoid accidental falling of the equipment as this will cause considerable damage on the equipment. When the unit is faulty, please stop using it and send it to the distributor for repair.

## **CLEANING INSTRUCTION**

Bottles:

1. Switch off the power and allow vacuum to drop.
2. Remove the lid then the bottle can be taken out from the holder.
3. Collection bottles and lids should be thoroughly cleaned each time after using by the following methods.
4. Wash with water only. Chemical solutions, flammable solutions and other strong disinfectants MUST NOT be used in cleaning the bottle. The use of chemical solutions and other detergent mentioned above may weaken the bottle's structure and quality and thus may break the bottle. The capacity of the bottle for model DF-506M is 3000c.c. and it is made by PC material which can resist high temperature pressure, impact resistant.

**NOTE-** Do not substitute any other brands of bottles, ex: disposable bottle. Substitution may lead to poor performance or caused damage; use only original DOCTOR'S FRIEND collection bottle.

Tubing

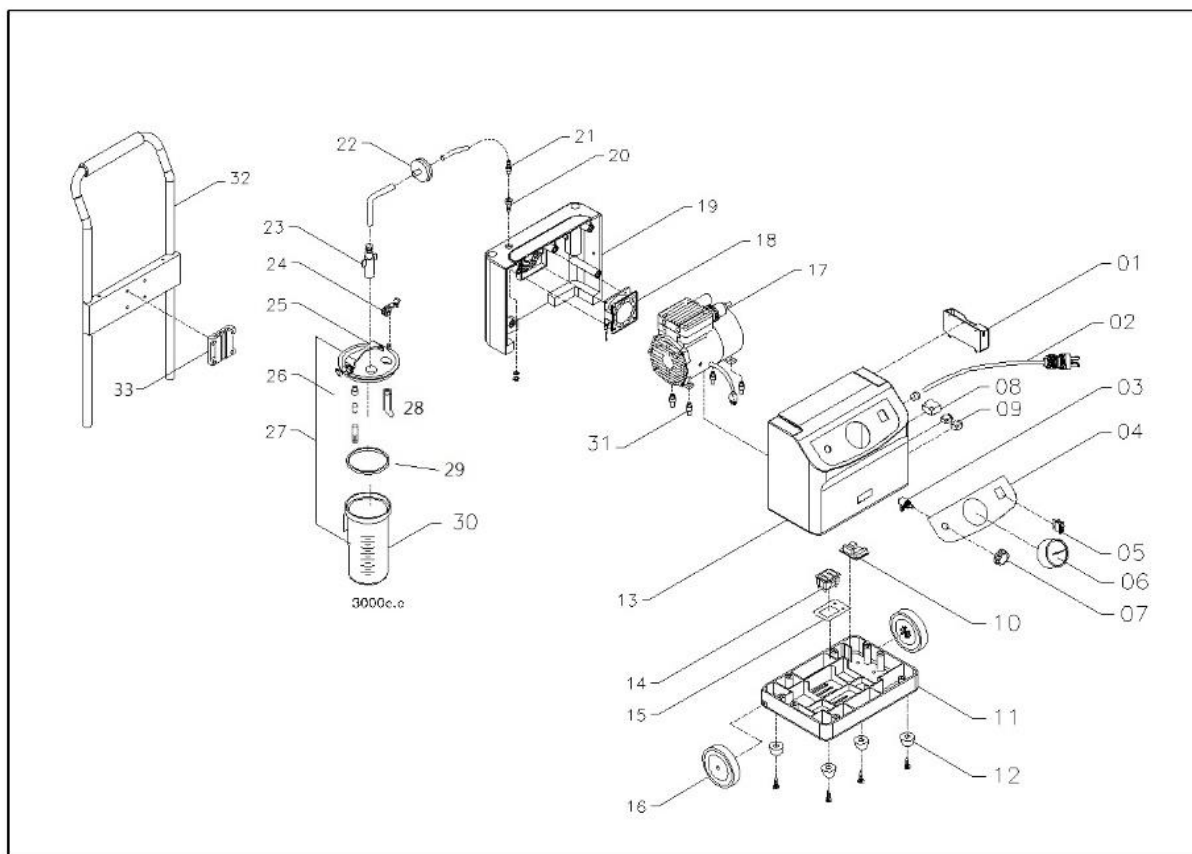
1. Disconnect the tubing from the unit.
2. Rinsing the tubing thoroughly by running water after every single use.
3. Keep the outer surface of the tubing clean by wiping with a clean damp cloth.
4. Recommend size of tubing, suction tube (size: 6.5 x 11.5mm, length 180cm), suction catheter (size: #14, 14FG x 50cm), please see the photo description as below.

## **MAINTENANCE**

Filter Changing

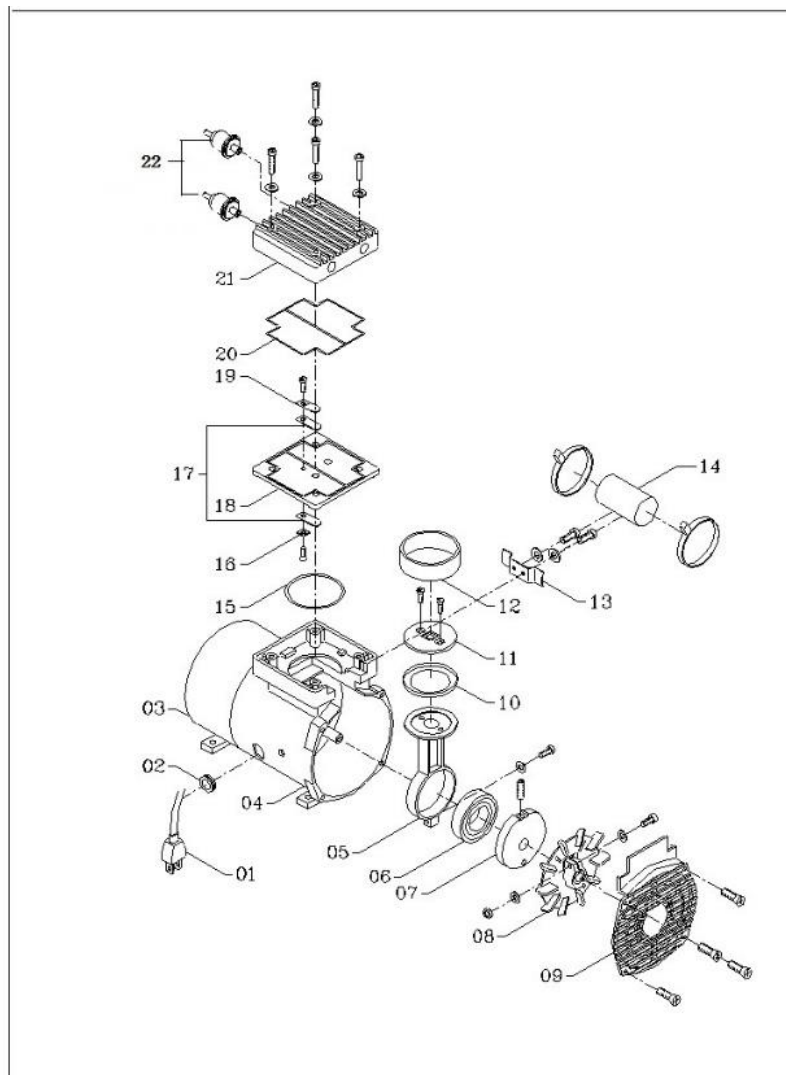
1. The filter has to be replaced if overflow occurs or every two months.
2. Remove filter by disconnecting it from suction unit and lid assembly.
3. Replace with a clean filter (90-031) and remount to suction unit and lid.

**NOTE-** Do not substitute any other material for this bacteria filter. Substitution may lead to contamination or poor performance; use only original DOCTOR'S FRIEND filter.



No.	Item No.	Description	No.	Item No.	Description
1	01-047A	Power cord box	18	08-008	Cooling fan (110V)
2	06-005	Power cord		08-009	Cooling fan (220V)
3	90-019A	Regulator valve	19	01-042A	Plastic outer shell (back)
4	17-033L	Operation plate	20	16-049A	Metal adaptor
5	09-001	Switch	21	01-006	Plastic adaptor (red)
6	90-014F	Vacuum gauge	22	90-031	Filter (L)
7	90-019A	Regulator valve	23	01-076A	Vertical adaptor (B)
8	08-016	Foot switch inlet	24	01-054C1	Fixed hood (for bottle lid)
9	08-024	Fuse (5A, 110V)	25	92-316F	3000C.C. bottle lid set
	08-024A	Fuse (3A, 220V)	26	90-006A	Safety device (S)
10	08-023A	Circuit board (for foot switch)	27	92-307F	3000C.C. bottle full set
11	01-044A	Plastic outer shell (bottom)	28	01-079C	Angle pipe (S)
12	14-013C	Rubber stand	29	14-027	Silicon bottle sealer
13	01-041A	Plastic outer shell (front)	30	13-012A	3000C.C. bottle
14	08-011	Motor input seat	31	14-019	Shock absorber
15	16-039	Shelf for fixing motor input	32	16-038	Trolley for DF-506M
16	05-013	Caster	33	01-073A	Bottle shelf
17	90-025	Oil-less vacuum pump (1/4HP, 110V)			
	90-025A	Oil-less vacuum pump (1/4HP, 220V)			

## The description of oil-less vacuum pump (90-025/90-025A)



NO.	Part NO.	Description	NO.	Part NO.	Description
1		Power cord	15	55-025A	Central diaphragm set (Incl. 14-016A + 14-017 + 16-033-36)
2	08-010	Strain relief bushing	16		
3	16-026	Back cover of motor	17		
4	16-027	Pump	18		
8	01-018	Fan	19		
9	01-019	Fan cover	20	55-025B	Connecting rod & bearing set (Incl. 16-028/29 +05-012)
10	14-010	Sealing cup	5		
11	16-030	Cup Plate	6		
12	16-031	Cylinder	7	55-025C	Pump (upper cover) (Incl. 16-037AP +90-009A)
13	16-032	Capacitor set	21		
14	08-014	Capacitor (13uf, 220V)	22		
	08-014A	Capacitor (26uf, 110V)			
22	90-009A	Filter (yellow)			

## TROUBLESHOOTING

NOTE- Your DOCTOR'S FRIEND SUPER SUCTION UNIT series contains with non user serviceable parts. If you believe your unit is not working properly, please take a few minutes to check for these possible causes before you return it to your distributor.

Problem	Action
Unit does not turn on. (Green external power indicator should be illuminated when power is applied)	Check the power source and connections
Pump runs, but no vacuum	<ol style="list-style-type: none"><li>1. Check all tubing is well connected.</li><li>2. Check tubing connection for breaks or leaks.</li><li>3. Ensure that flow shut-off is not activated.</li><li>4. Check for leaks or cracks in bottle.</li></ol>
Low vacuum	<ol style="list-style-type: none"><li>1. Use regulator gauge to increase vacuum level.</li><li>2. Check system for leaks</li><li>3. Push regulator gauge and then release.</li></ol>

### ISO Classification

DF-506M MOVABLE SUCTION UNIT series- Electrically powered medical suction equipment for non-transport use according to ISO 10079-1.

DOCTOR'S FRIEND will make available on request circuit diagrams, parts lists, etc.

### ONE YEAR WARRANTY

DF-506M is warranted to be free from defective workmanship and materials for a period of one year from date of purchase. Any defective parts will be repaired or replaced at DOCTOR'S FRIEND's option if the unit has not been tampered with or used improperly during that period. Make certain that any malfunction is not due to inadequate cleaning or failure to follow the instructions. If repair is necessary, please contact your service provider.









### LIFETIME GUARANTEE

All DOCTOR'S FRIEND products are designed and manufactured to exacting standards and guaranteed for the end purpose intended. As part of our ongoing commitment we guarantee for the lifetime of the product, that should it fail during normal usage as a result of a component. The product will be repaired at our discretion.

This guarantee is only valid when used properly. The lifetime of the product is 5 years since the date left the factory. Repairs to damage caused by accident, use in inappropriate conditions will be carried out where possible at a reasonable charge. No consequential loss may be claimed under this guarantee. This guarantee in no way affects your statutory rights. If you think your product is faulty you should first contact the distributor from whom the product was purchased. They should then consult with us, to resolve the problem as quickly as possible.

Quality System Standards Applied:	EN ISO13485 Medical Device – Quality Management System-Requirements for regulatory purpose. The conformity assessment procedure described in Article 11.3.a and Annex II excluding section 4 (Module H) of Council Directive 93/42/EEC on Medical Devices. GMP.
Technical Standard:	Medical Device Directive 93/42/EEC, as amended by 2007/47/EC EN 60601-1 (IEC 60601-1);EN 60601-1-1 (IEC 60601-1-1);EN 60601-1-2 (IEC 60601-1-2) EN ISO 14971; EN ISO10079-1; EN ISO 10079-3; EN 980, NE 1041, EN ISO 15223-1.

#### Description of symbols on the label.

No.	Sym.	Description
1.		Serial number
2.		Catalogue number
3.		CE certification with notified body number
4.		Consult instructions for use
5.		Type BF applied parts are those parts not suitable for direct cardiac application.
6.		Date of manufacture
7.		Manufacturer
8.		Authorized representative in the European Community

#### Description of suction tubes & catheter

