stomdevice

TECNO-GAZ
dental and medical equipment

Instructions for use

TECNO15
TECNO25
TECNO16B

VASO/POT 1L
VASO/POT 2L

I GB

WARNING

- BEFORE USING THE DEVICE, READ THE INSTRUCTIONS
- BEFORE USING THE DEVICE, CHECK THE CORRECT WORKING OF ITS FUNCTIONS
- DURING ITS WORKING, CHECK THE ASPIRATION CIRCUIT
- THE SUCTION UNIT MUST BE USED BY SKILLED STAFF
- DO NOT OPEN THE DEVICE, ADDRESS TO A CUSTOMER SERVICE FOR ASSISTANCE.
- DO NOT USE IT IF THERE ARE ELECTROMAGNETIC INTERFERENCES WHICH COULD INFLUENCE THE CORRECT WORKING OF THE ASPIRATOR
- VERSION TECNO 16-B CONTAINS A SEALED LEADEN – CALCIUM BATTERY, IT DOESN'T NEED MAINTENANCE. FOR THE REPLACEMENT ADDRESS TO THE CUSTOMER SERVICES.
- Check the integrity of the device and of its parts, possible failures, cracks or breaking.
- Make sure that the feeling cables (12V, 230V) are whole.
- Don't use the plugs when your hands are wet.
- Don't plunge the device in water.
- Keep away from heat sources and don't expose to atmospheric agents.
- Use the device for the aims expected by the manufacturer.
- DON'T USE THE DEVICE IN POTENTALLY EXPLOSIVE ATMOSPHERE.

1.3

WARRANTY

THE PORTABLE SUCTION UNIT is under warranty for twelve months except for the parts subject to wear.
This warranty starts from the delivery to the customer and is proved by the return of the coupon properly filled in, stamped and signed by the seller.
If there are any objections, the date on the sale bill is considered as valid.
The reparation or the replacement of parts under warranty is made after unquestionable permit of the manufacturer and doesn't include the staff travelling expenses, the packing expenses and the delivery expenses.
The warranty doesn't include the failures or damages caused by a wrong maintenance, lack of carefulness, negligence or other reasons which cannot be attributed to the manufacturer.
Any kind of compensation for people or things is therefore excluded.
The whole suction unit cannot be replaced.
No compensation for the not working of the device is possible.
The warranty automatically stops if the customer or not authorized people repair or modify the device.
The customer must address only to the dealer or the customer services indicated by the manufacturer.

1.4

INDIRIZZI UTILI / USEFUL ADDRESSES

- Tutti gli interventi d'assistenza tecnica e riparazione sono eseguiti direttamente dalla ditta Tecno-Gaz nel proprio laboratorio prove e riparazioni.
- All interventions for technical assistance and reparation are made by Tecno-Gaz in its test and reparation laboratory.

TECNO-GAZ S.p.A.
Strada Cavalli n°4 – 43038 Sala Baganza – Parma – Italy
Tel. +39 0521-833926 – Telefax +39 0521-833391
e-mail: info@tecnogaz.com
http://www.tecnogaz.com

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02 INTRODUCTION OF THE PRODUCT

2.1 COMPOSITION

The PORTABLE SURGICAL SUCTION UNIT has a structure made of thermoplastic material (PTS) equipped with control board and place for 2 pots (the reducer integrated in the model with 2 LT container can be removed to use 4 LT containers).

The surface in thermoplastic material (PTS) is equipped with 3 pivoting wheels made of grey-nylon (anti-marks), the two rear wheels are equipped with brake.

The pump doesn't unload anything in the environment.

The control board is easy to use.

The switches have a IP65 protection and the device is IPX1 (protected against dripping).

The device is equipped with rubber feet ensuring stability.

The pot is made of transparent polycarbonate(in polysulfone upon request) and its capacity is 2L or 4L on request, marked with their own value, expressed in millimetres.

Thanks to a gradation the user has an indication of the volume, with intervals of 100 ml.

DIFFERENT VERSIONS:

PORTABLE SURGICAL SUCTION UNIT

ITEM	REFERENCE	DESCRIPTION
TECNO16-B	**111-A**	PORTABLE SUCTION UNIT WITH BATTERY 16L/MIN WITH 1 L POT
TECNO16-B-2L	**114-A**	PORTABLE SUCTION UNIT WITH BATTERY 16L/MIN WITH 2 L POT
TECNO15	**112-A**	PORTABLE SUCTION UNIT 15 L/MIN WITH 1 L POT
TECNO15-2L	**115-A**	PORTABLE SUCTION UNIT 15 L/MIN WITH 2 L POT
TECNO25	**113-A**	PORTABLE SUCTION UNIT 25 L/MIN WITH 1 L POT
TECNO25-2L	**116-A**	PORTABLE SUCTION UNIT 25 L/MIN WITH 2 L POT

SURGICAL SUCTION UNIT WITH TROLLEY

ITEM	REFERENCE	DESCRIPTION
TECNO40	121-A	SUCTION UNIT WITH TROLLEY 40 L/MIN WITH 2 LT POT
TECNO40-4L	144-A	SUCTION UNIT WITH TROLLEY 40 L/MIN WITH 4 LT POT
TECNO70	122-A	SUCTION UNIT WITH TROLLEY 70 L/MIN WITH 2 LT POT
TECNO70-4L	145-A	SUCTION UNIT WITH TROLLEY 70 L/MIN WITH 4 LT POT
TECNO100-4L	146-A	SUCTION UNIT WITH TROLLEY 100 L/MIN WITH 4 LT POT

- Some versions have been omitted, for further information please contact TECNO-GAZ S.p.A

03 PRESENTATION OF THE CONTENT AND WAY OF CONSULTATION

3.1 GLOSSARY

VACUUM	Pressure lower than the atmospheric pressure
FREE AIR FLUX	Air flux without limits passing through an appointed entry
LOW VACUUM	No more than 20kPa under the atmospheric pressure
MEDIUM VACUUM	Between 20kPa and 60kPa under the atmospheric pressure
HIGH VACUUM	More than 60kPa under the atmospheric pressure
LOW FLUX	Less than 20 l/min
HIGH FLUX	More than 20 l/min
VACUUM PUMP	Device for generating vacuum
VACUUM INDICATOR	Device for checking the vacuum level
VACUUM REGULATOR	Device for checking the highest vacuum applied to the patient
FILTER	Device for holding particles
ENDING PART	Part of the aspirator applied to the patient from the ending part to the first removable joint
INTERMEDIATE TUBES	Tube between the pot and the vacuum source
ASPIRATION TUBE	Tube for the liquids and/or solid particles transport from the ending part to the pot
ASPIRATION	Application of vacuum for the aspiration of fluids and/or solid particles
POT	Container for liquids and solid particles

3.2 REMARKS ON THE GRAPHIC CAPTION


FEEDING FROM NETWORK (USED ONLY ON TECNO16-B)


BATTERY (USED ONLY ON TECNO16-B)


MEASUREMENT OF THE VACUUM LEVEL (VACUUM-METER)


REGULATOR OF THE VACUUM LEVEL

04 DATI E CARATTERISTICHE TECNICHE

VERSION	TECNO16B	TECNO15	TECNO25
EN ISO 10079 - 1			
Surgical Suction Unit	HIGH VACUUM LOW FLOW		HIGH VACUUM HIGH FLOW
EN 60601 - 1			
Protection against electric dangers	Class 1		
Protection against direct/indirect contacts	TYPE B		
Level of protection against the penetration of substances	IPX1		
Level of protection in zone AD-FT (CEI64-4)	NOT SUITABLE		
Level of safety with anesthetic and/or explosive mixtures	NOT SUITABLE		
Use in field structures	NOT SUITABLE		
Use on means of transport	NOT SUITABLE		
Use for thoracic drainage	NOT SUITABLE		
Intended to be used for pharyngeal suction	NOT SUITABLE		
TECHNICAL FEATURES			
Power supply	230V ~ - 12 V d.c.	230V 50 Hz	230V 50 Hz
Max. absorbed electric power	25 W	80 W	140 W
Electric protection	2 fuses Ø 5x20 F 1 AL 250V	2 fuses Ø 5x20 F 2 AL 250V	
Battery	12 Volt – 4 Ah	/	/
ASPIRATION			
Pump	WITH PISTON NOT-OILED		
Nominal flow of the pump	30 l/min	30 l/min	40 l/min
Flow at the utilization - max. established rate	16 l/min	15 l/min	25 l/min
Max. Depression	-0.79 bar		-0.82 bar
COLLECTION POTS			
N° pots	1		
Capacity	Version 1 Lt and version 2 Lt		
Material	POLYCARBONATE OR POLYSULFONE UPON REQUEST		
Single use collection bag	UPON REQUEST		
Non-return valve system	VALVE WITH FLOAT		
HYDROFOBIC FILTER			
Filtering Capacity	0.2 μm (more than 99.99999 %)		
Material	PTFE		
TUBE			
Material,diameter	SILICON FOR MEDICAL USE $Ø_{INTERNAL=}$ 5 $Ø_{EXTERNAL=}$ 9		
VACUUM REGULATION			
Valve for vacuum regulation	PRESENT WITH SCALE		
Vacuum-meter of graduated control	Ø 50 0 / -1 bar		
DIMENSIONS			
Length (mm)	410 mm		
Depth (mm)	205 mm		
Height with 1 l pot (with 2 l pot)	260 (335) mm		
Weight	5.6 kg	4 kg	4.4 kg
ACOUSTIC LEVEL	/		
USE LIMITATIONS	SEE INSTRUCTION MANUAL		
CONFORMITY	MDD 93/42 EEC - EN60601-1-2 (62-5) - EN ISO 10079-1		
EXPECTED LIFE OF THE DEVICE	5 years		

05 TRANSPORT, STORAGE, INSTALLATION

The PORTABLE SURGICAL SUCTION UNIT weighs 4 / 4.4 / 5.6 kg., it is possible to raise and carry the device only using its special handle.

Protected by a cellophane bag, placed in a foam polystyrene cover and inserted in a corrugated paper sealed with adhesive tape.

During the transport shakes and crashes must be avoided.

In version TECNO16B the battery is insulated from the electronic board by the main switch in order to preserve the battery during the period of storage.

ISTALLAZIONE:

1. Remove the packaging, make sure that the parts are whole, proceed to assemble the filter and silicon tubes.
2. TECNO15/TECNO25: Connect the alimentation cable to the network and to the device, set the main switch on ON position, verify that the pump works.
3. In version TECNO16B verify the charge of the battery: switch on the device and check on the control panel if the battery is flat connect the device to the network supply, keep in charge for about 24 hours.
4. We don't supply suction catheters, if necessary, use only catheters according to norm ISO 8836: 1997

WARNING:

The packaging must be kept during the warranty time.

Do not disperse the packaging in the environment, recover the recyclable products and hand the others over to a company of rubbish disposal.

The packed machines must be kept in dry places and at a temperature between -10°C and +40°C.

5.1 DEMOLITION

When the device is ready to be thrown away, you have to respect the rules for the disposal of special rubbish accordance with the current laws of destination countries for special waste disposal and hospital .

06 WORKING AND USE

The Portable Surgical Suction Unit in its different versions is suitable for the aspiration of body and extra-body liquids.

They've been conceived for displacements in hospital wards and little surgery.

Small dimensions, different typologies of alimentation, make the device versatile, handy and easy to carry.

The device is not suitable for "camp use".

With the cable supplied with all models it's possible to feed the aspirator from 230 V AC network and in version TECNO16B it's possible to charge the inner battery.

With the further cable supplied with model TECNO16B the device works plugging in the special plug in the lighter of the car (external battery).

The switching on of the device is signaled by the light on the switch on models with alimentation only from network.

In version TECNO16B 3 led on the control panel allow a constant monitoring of the charge of battery and of the type of alimentation in use, if the battery is flat a red led lights and a buzzer starts to ring. (double safety system).

Charged battery lasts for more than 60 minutes.

The good working of the device depends on the correct use, maintenance and cleaning.

The improper use causes bad working, damages to the device and to the environment.

The position of work must allow to reach the control panel and to have a good view of the vacuum indicator, of the pot and filter.

Place the suction unit on a flat and solid surface in order to have easy movement and the complete volume of use of the pot and the major efficacy of the non return valve system.

The suction stops when the non return valve system starts to work. Switch off the system and clean the pot (see page 8).

Room temperature 5 – 35 °C

Remove the equipment and make ordinary/extraordinary maintenance in case liquids are sucked by the pump (Suction Rubber holder pad.12 pos. B) inside the unit.

We recommend a check up in TECNO-GAZ

The correct use of the device is granted by the correct working of the vacuum meter and by an effective aspiration.

In case of bad working or for a check on parameters please contact Tecno-gaz.

07 INSTRUCTIONS FOR USE

Model TECNO16B:

Alimentation is ran by an electronic board, following you can find the description of work in different situations:

WORKING WITH BATTERY

1. *TURN THE MAIN SWITCH ON*
   a) *With charge battery the pump works normally and the yellow led flashes*
   b) *With flat battery the pump works critically , the yellow led flashes, the red led is lightened and the acoustic signal is in function*

WORKING WITH CONNECTION TO THE NETWORK

2. *TURN THE MAIN SWITCH ON*
   a) *Green led lightened and fixed- recharge of battery- pump in function*
   b) *The network runs out –the green led lights on the yellow led flashes–the pump goes on working with the inner battery*
   c) *The network runs out when the inner battery is flat- the green led goes out and the yellow flashing led lights on , red led and acoustic signal are in function*

WORKING WITH CONNECTION 12V DC (LIGHTER ON CAR)

3. *TURN THE MAIN SWITCH ON*
   a) *Yellow led fixed- the pump works*
   b) *Without network and with flat inner battery, external battery starts to work and the pump works regularly red led and acoustic signal go out and the yellow led from flashing becomes fixed*
   c) *Removing the external battery in previous situation the red led lights and acoustic signal stats again and the fixed yellow led starts flashing*

Models: TECNO15 E TECNO25

Connect the alimentation cable supplied with the suction unit in the rear side.

Connect the same cable to the electricity network 230 V AC.

Operate on the switch on control panel to start the aspiration.

ALL MODELS:

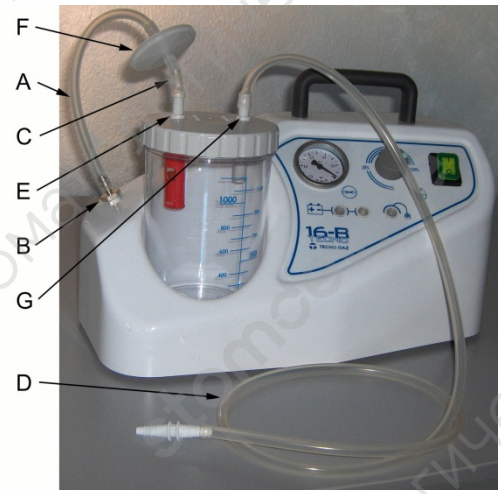
⚠ Follow carefully the instructions for tubes connections and insertion of filter described in the following page.

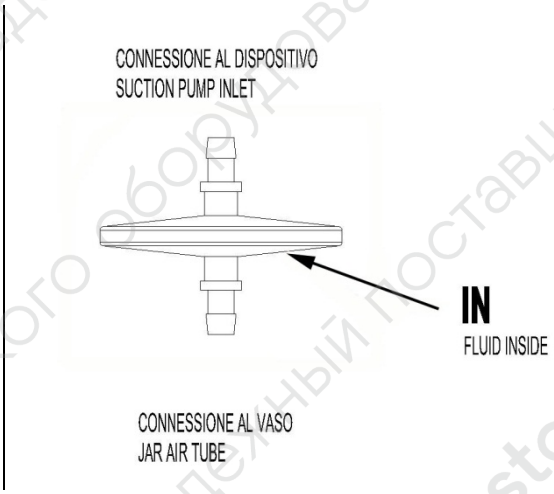
DESCRIPTION OF CONNECTIONS:

Important for a correct use of the device and to preserve the device to wire the external tubes of the suction unit following the indications.

Connect the tubes as described:

1. Fix the tube **(A)** to the tube connector of aspiration **(B)**
2. Insert the hydrophobic filter on the free side of the tube **(A)**
3. Fix the tube(C) to the free extremity of the filter **(F)**
4. Fix the tube **(C)** to the entering connection of the pot **(E)** (vacuum), characterized by the presence of a float to close the aspiration with full pot. This safety system allows to protect the filter from liquids **(F)**.
5. Connect the tube **(D)** to the free connection **(G)** (patient) of the collection pot.
6. The final part (i.e. catheter) is connected to the tube **(D)** trough a connection





IMP: the filter has to be mounted in vertical position above the connection of aspiration (vacuum)

FILTER

The filter has a great importance, it is protected from the liquids coming from the pot by a safety valve, but not from foam and steam that has to keep.

For this reason we suggest to replace it frequently and check its functionality.

- Switch on the suction unit with free flow and check that vacuum-meter doesn't move from ~0 if the degree of vacuum increases, the filter should be replaced
- A fall of the aspiration could indicate the necessity to replace the filter.
- TO REVERSE THE WORKING OF THE FILTER CAUSES POLLUTION AND ENDANGERS THE FUNCTIONING OF THE SUCTION UNIT
- RESPECT THE CONNECTION OF TUBES, FILTERS AND TUBECONNECTOR

VACUUM REGULATOR

A knob on the control board allows to adjust the max. vacuum level applied to the patient.

To check the correct working of the pump and of the vacuum regulator:

- Close the ending part and take the regulator to the highest degree of vacuum.
- Read the value on the vacuum indicator (-0.79 bar)
- Turn the regulator and check the correspondence of the values indicated by the index of the hand-grip and by the vacuum-meter.
- What is above mentioned refers to an efficient circuit.

08 ORDINARY, PROGRAMMED AND EXTRAORDINARY MAINTENANCE

THE ORDINARY MAINTENANCE CONSISTS FIRST OF ALL IN CLEANING:



Cleaning must be careful and done after every use
Important:
Cleaning the accessories and the device allows a correct working of the machine and the protection of both the patient's and the operator's health

INSTRUCTION FOR CLEANING AND DISINFECTION OF THE UNIT:

- Wear latex gloves

External:

- Remove all the accessories and clean the aspirator with a wet cloth with a not aggressive detergent

Pots:

- Empty the pot out (the pot's cleaning can be facilitated by putting some water inside: the aspired diluted liquid will be more easily eliminated)
- Disassemble every part,(the valve "too full" must be correctly reassembled, the float must have the gasket turned upward and the wrapping must be well inserted)

Tubes:

- Wash by running water
- Check that tubes don't present dirty parts with presence of corpuscles
- The tubes can be steam sterilized at 134°c, cold disinfected, or following the sterilization protocol of the site where the unit is used

Filter replacement:

- For a correct working, check the filter and replace it when necessary, in order to avoid every inner pollution which would make it unusable.
- The filter cannot be cleaned, it must be replaced when it is choked
- The accessories (pot, filter…) must be supplied by Tecno-gaz
- Temperature of stockage of the filter +5°c/ +40°C

THE EXTRAORDINARY MAINTENANCE IS NOT EXPECTED. IN CASE OF ANOMALIES CONTACT TECNO-GAZ FOR TECHNICAL ASSISTANCE AND REPARATION

WARNINGS FOR SHIPMENT:
The unit must be **SANITIZED** with particular attention to parts retuned for assistance.
The package must be suitable, the best think is preserve the original package.

09 ANALYSIS AND RESEARCH OF FAILURES

N°	FAULT	CAUSE	ASSISTANCE
1	IT DOESN'T SUCK	THE POT IS BADLY SCREWED DOWN	UNSCREW AND SCREW THE TOP, CHECK GASKET'S INTEGRITY AND RIGHT POSITION
		EXTERNAL PIPES WITH FOLDING	REMOVE NARROWING ON THE PIPES
		FILTER IS OBSTRUCTED	FILTER MUST BE REPLACED
2	THE FLOAT DOESN'T CLOSE	WRONG ASSEMBLING	CHECK THE CORRECT POSITION OF NON RETURN VALVE
3	NOT WORKING	EXTERNAL FUSE INTERRUPTED	⚠ IN CASE OF NOT WORKING, ADDRESS TO TECNO-GAZ

10 COMMERCIAL DATA, SPARE PARTS AND DOCUMENTATION

DESCRIPTION	CODE
POWER SUPPLY CABLE	**CE06006**
POWER SUPPLY CABLE LIGHTER OF THE CAR	**SA1A042**
HYDROPHOBIC FILTER Ø 50 mm	**CPF0030**
KIT OF PIPES FOR EXTERNAL WIRING FOR POT 1L	**SA1A148**
KIT OF PIPES FOR EXTERNAL WIRING FOR POT 2L	**SA4A165**
POT WITH NON RETURN VALVE 1 LT	**CM84150**
POT WITH NON RETURN VALVE 2 LT	**CM84151**

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TECNO-GAZ S.p.A.
Strada Cavalli N°4 • 43038 • Sala Baganza • Parma • ITALIA
Tel. +39 0521 83.39.26 r.a. Fax. +39 0521 83.33.91

www.tecnogaz.com

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