

*ULTRASONIC CLEANER*

# Instruction Manual



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## 1. Caution

Thank you very much for purchasing our ultrasonic cleaner.

Please read and fully understand the following instruction in order to prevent accidents from happening and clean the works cleanly before operating ultrasonic cleaner.

And mis-operation of ultrasonic cleaner could result in serious personal injury or cleaner.

### ⦿ Explanation about warning indication

This manual marks following warning indication for you to do not hurt and for property to do not damage.



**DANGER**

Ignore this expression and user makes contents that danger of death or serious injury can happen in case of use wrong.



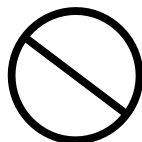
**WARNING**

Ignore this expression and user makes contents that danger of death or serious injury can happen in case of use wrong.



**ATTENTION**

Ignore this expression and makes possibility that user is injured in case of use wrong and damage can happen.





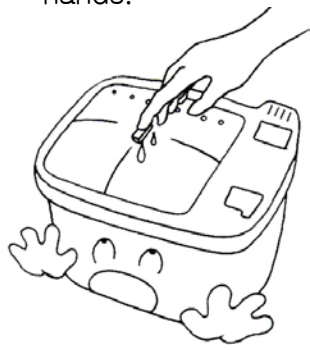



This symbol is marked to prohibit.



This symbol is an indication that you have to run.

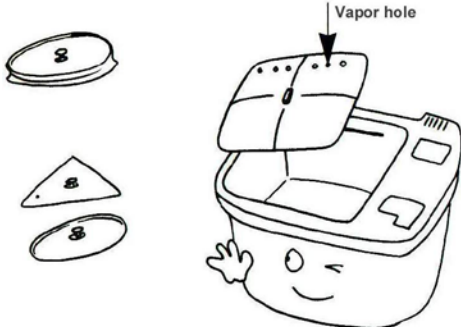

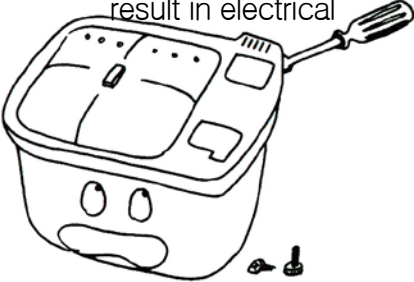

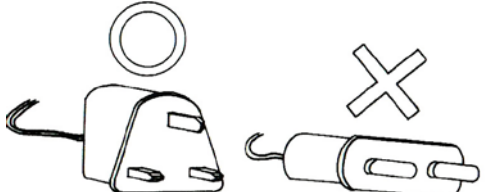

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## [Caution]

<p><b>⚠ Attention</b></p> <p>Make sure you check the proper voltage on sticker before plugging in. Otherwise, it may result in damage to the product.</p> 	<p><b>⚠ Danger</b></p> <p><b>⊘</b> Do not pour solvent in the bath. Otherwise, it may cause the damage to the cleaner.</p> 
<p><b>⚠ Warning</b></p> <p>Do not operate the cleaner with wet hands.</p> 	<p><b>⚠ Danger</b></p> <p><b>⊘</b> Do not pour the flammable solution in the tank. (fire danger)</p> 
<p><b>⚠ Warning</b></p> <p><b>!</b> Make sure of pouring solution up to the indicating level. Otherwise, it may cause the overheat of heater.</p> 	<p><b>⚠ Warning</b></p> <p><b>⊘</b> Do not operate the cleaner without solution. Otherwise, it may cause the overheat of heater and transducer disorder.</p> 

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## [Caution] - Continue

<p><b>⚠ Attention</b></p> <p>Do not use the unventilated cover except for cover or having vapor holes.</p>  <p>The diagram shows three circular covers of different sizes and shapes. To the right, a personified ultrasonic cleaner is shown with its lid open. An arrow points to a hole in the lid labeled "Vapor hole".</p>	<p><b>⚠ Attention</b></p> <p>Keep the controller part clean and dry and do not place the things on the cover.</p>  <p>The diagram shows a personified ultrasonic cleaner with a sad face. A controller unit is placed on top of its lid.</p>
<p><b>⚠ Danger</b></p> <p>Do not attempt to take the cleaner apart to repair it while power is being supplied. Otherwise, it may result in electrical shock.</p>  <p>The diagram shows a personified ultrasonic cleaner with a sad face. A screwdriver is being used to pry open the lid. A screw is shown falling away.</p>	<p><b>⚠ Danger</b></p> <p>Do not put your hands in the bath in operating, particular never clean your dusty hands. (ultrasonic shock)</p>  <p>The diagram shows a hand reaching into the bath of a personified ultrasonic cleaner. A starburst symbol indicates a shock or danger.</p>
<p><b>⚠ Attention</b></p> <p>Make sure of using the plug connected to the ground.</p>  <p>The diagram shows a three-pronged ground plug and a two-pronged non-grounded plug. A large 'X' is drawn over the two-pronged plug.</p>	<p><b>⚠ Attention</b></p> <p>Do not clean with placing the works directly on the bath bottom. (Use a basket or a tray)</p>  <p>The diagram shows a personified ultrasonic cleaner with a smiling face. A basket containing tools is placed inside the bath.</p>

# ULTRASONIC CLEANER

## 2. Specification

### A. JAC Series

-. Dimension

Contents \ Model	JAC-3010	JAC-5020
Capacity	10 L	20 L
Tank Size (WxDxH)	295x240x150	500x290x150
Overall Size (WxDxH)	490x368x297	721x451x297
Temp. Range	0 ~ 70 °C	
Time Range	1 ~ 99 min, 4 hour	
Transducer	BLT Type	
Ultrasonic Freq.	40 KHz	
Input Power	AC220V/60Hz	
Body Material	ABS	
Ultrasonic Power(Max)	300W	500W
Heater Power	190W	320W
Weight	9 Kg	15 Kg

-. Image of front and rear of the product



# ULTRASONIC CLEANER

## B. NXPC-B Series

-. Dimension

Name	NXPC-B Series Portable Ultrasonic Cleaner		
Model	NXPC-B2005S(B)	NXPC-B3010S(B)	NXPC-B5020S(B)
Capacity	5.7 Liter	10 Liter	20 Liter
Transducer	40KHz BLT TYPE		
Ultrasonic Power(Max)	200W	300W	500W
Heater Power	150W	190W	320W
Ultrasonic Freq.	40 KHz		
Input Power	Single Phase AC220V 50/60Hz		
Temp. Range	-10 ~ 70 °C		
Time Range	1 ~ 99 min, 4 hour		
Body Material	SUS-304(S) or SUS-430 Painting(B)		
Control Method	Microcontroller Control Method		
Switching Method	FET Switching		
Tank Size(mm <sup>3</sup> )	295 x 160 x 150	295 x 240 x 150	500 x 290 x 150
Overall Size(mm <sup>3</sup> )	325 x 230 x 320	325 x 330 x 320	530 x 330 x 297
Weight	9 Kg	11 Kg	15 Kg

-. Image of front and rear of the product



# ULTRASONIC CLEANER

## C. NHF/NHPC-B Series

-. Dimension

Name	NHF/NHPC-B Series High Ultrasonic Cleaner		
Model	NHF-3010	NHPC-B2005S	NHPC-B3010S
Capacity	10 Liter	5.7 Liter	10 Liter
Transducer	BLT TYPE		
Ultrasonic Power(Max)	300W	200W	300W
Heater Power	190W	150W	190W
Input Power	Single Phase AC220V 50/60Hz		
Frequency	68Khz, 80Khz, 100Khz, 132Khz Order Made		
Temp. Range	-10 ~ 70 °C		
Time Range	1 ~ 99 min, 4 hour		
Control Method	Microcontroller Control Method		
Body Material	ABS	SUS-304(S)	
Tank Size(mm <sup>3</sup> )	295 x 240 x 150	295 x 160 x 150	295 x 240 x 150
Overall Size(mm <sup>3</sup> )	490 x 368 x 297	325 x 230 x 320	325 x 330 x 320
Weight	11 Kg	9 Kg	11 Kg

-. Image of front and rear of the product



## 3. Operation

### A. Function Key

#### [ DISPLAY ]

- ① FND-TEMP : Display of Temperature.
- ② FND-TIME : Display of Operation Time(Displays the remaining time in minutes)
- ③ Display of Operation Mode : Normal, Pulse, Sweep
- ④ Display of Ultrasonic Power : Low, Middle, High
- ⑤ Display whether to use Heater : Press Heater Key, ON→OFF /OFF→ON is repeatedly. If water temperature is lower than set temperature, it shows that turn on the heater. Actual operation of Heater is displayed as DOT LED on FND-TEMP window.
- ⑥ Display whether to operate DeGAS.
- ⑦ Display whether to generate ULTRASONIC.

#### [ KEY ]

- ① SET KEY : Operated as NORMAL → TEMP → TIME → OP MODE → POWER → NORMAL. Selected FND or LED is blink.
- ② In selected Mode, Down Key
- ③ In selected Mode, Up Key
- ④ HEATER Operation Selection Key. In state ON, when water temperature is lower than set temperature, Heater is ON automatically. In contrast, the higher the Heater is OFF.
- ⑤ DeGAS Key : DeGAS ON/OFF Key. Operates only if the sonic off.
- ⑥ POWER Key : POWER ON/OFF Key.
- ⑦ SONIC Key : Ultrasonic output ON/OFF Key. Operates only if the DeGAS off.

### B. Starting Method

- i. If you have basket, put in the sump.

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- ii. Put cleaning stuff into sump.
- iii. Put liquid into sump until going to indication line.
- iv. POWER ON. LED and FND test and then wait to be ready to operate.
- v. Press SET KEY once and set temperature of liquid. (TEMP SET MODE).
  1. If press SET KEY first time, FND-TEMP is blink. UP/DOWN Key to set the desired temperature can be used.
  2. Heater lamp is automatically ON/OFF, compared with the current temperature and the set temperature.
- vi. In TEMP SET MODE, press SET KEY once more and then FND-TIME is blink. In same way, set cleaning time by pressing UP/DOWN KEY. (TIME SET MODE).
- vii. In TIME SET MODE, press SET KEY once more and the selected MODE LED is blink, changing into Operation Selection Mode. UP/DOWN Key to select the proper mode can be used. (OPERATION SELECTION MODE).
- viii. In OPERATION SELECTION MODE, press SET KEY once more again and then goes into POWER SELECTION Mode. The selected POWER LED is blink. UP/DOWN Key to select the power can be used. (OUTPUT POWER SELECTION MODE)
- ix. In OUTPUT POWER SELECTION MODE, if press SET KEY. Every setting is finished and changed into NORMAL Operation MODE. All of the selected are stored. Even though POWER is OFF, it is maintained.
- x. Press SONIC ON/OFF, SONIC LED lights up and begins to ultrasonic cleaning.
- xi. Cleaning time is displayed in minutes in subtraction mode while ultrasonic cleaning. Namely, remaining time is displayed by MIN.
- xii. If you want to stop cleaning before settled time, press SONIC KEY.
- xiii. The ultrasonic cleaning time is set to 00, four hours of continuous use is possible.

## 4. Cleaning Method

### A. Direct Cleaning

- i. It is to clean the works directly by putting the works in bath. It is easy and good detergency.
- ii. Pour Cleaning solution up to the indication line(When works are put)
- iii. Put the works in the perforated Basket or Pallet, and put it in the bath. And then Ultrasonic ON.
- iv. Put the works in the bath hung on wire or string. And then Sonic ON.
- v. After cleaning, you need to rinse the works away with water to keep clean. Because the residue is remained in the bath.
- vi. High concentrations of acid, alkaline cleaning solution may corrode the internal surface of the tank.

### B. Indirect Cleaning

- i. It is to clean the works put in the beaker in the bath. The inspection of cleaning result, filtering and disposal are simple.
- ii. Pour water up to the indication line.(When the beaker are put)
- iii. Pour the solution to a beaker or several one containing the works.
- iv. Put the beaker containing the works in the bath and clean it.
- v. When putting the beaker in the bath, take care that not to enter water into the beaker by ultrasonic wave.

### C. Effective Cleaning

- i. Pour cleaning solution up to indication line. (When the works are put) Or otherwise, it causes overheat of heater.
- ii. Put the works in the basket or pallet in the bath. Using the basket or pallet is easy to put or take out.
- iii. Temp. of solution in the bath is proper at 40°C.
- iv. Do not use the highly Volatile Solution.(ex, Solvent, Thinner etc.)
- v. Strong acid, strong alkali solution should be avoided because it may cause corrosion.
- vi. After cleaning, rinse well in water, allowed to dry out.

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- vii. After using the Ultrasonic Cleaner, discharge the solution through the drain, rinse with clean water and wipe clean with a towel or tissue.

### 5. Trouble Shooting

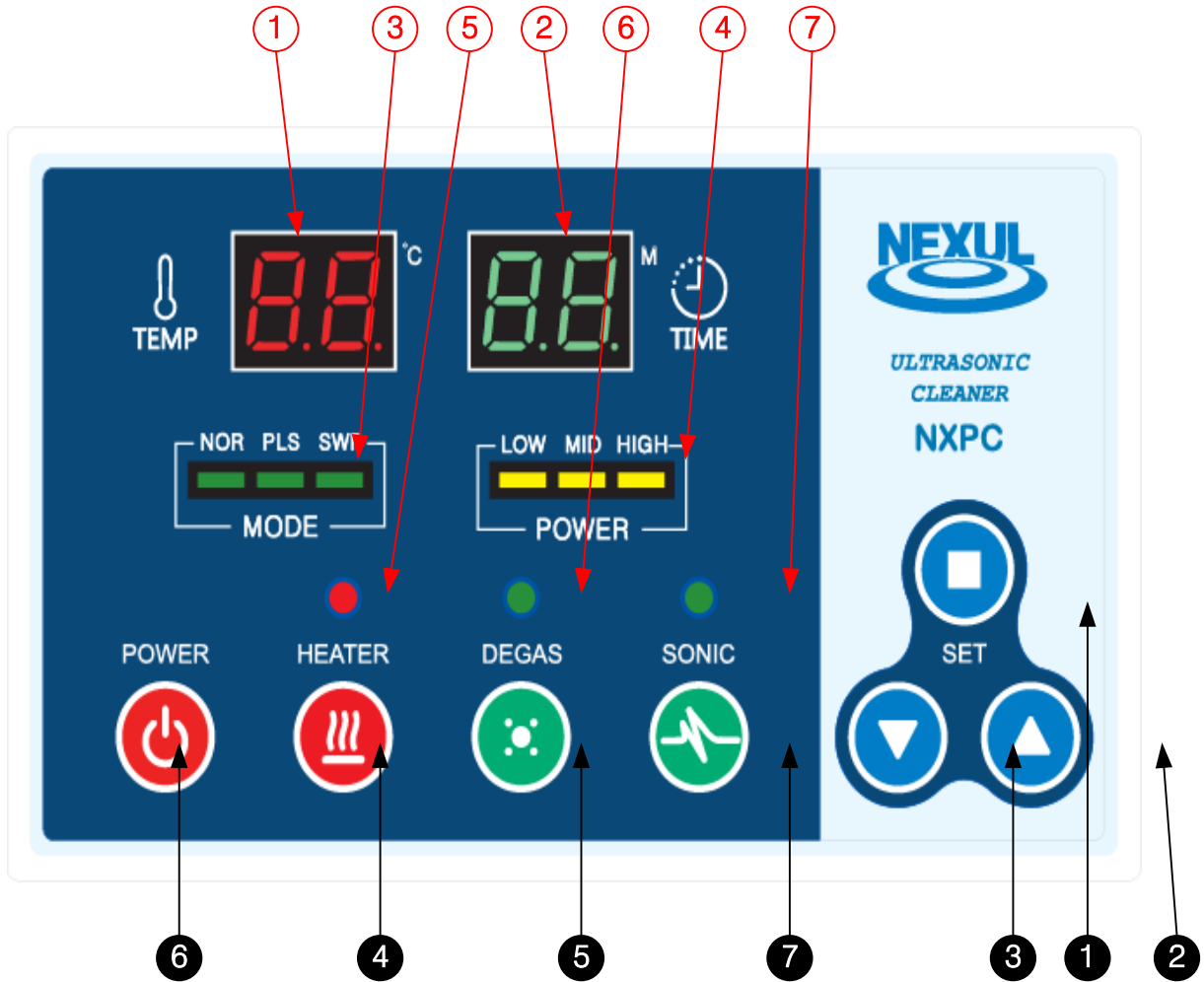
Troubles	Causes	Solutions
Cleaner is not powerd.	<ol style="list-style-type: none"><li>1. Bad connection Power Plug</li><li>2. Power inlet Fuse is bad</li><li>3. Fuse unit in generator is bad.</li></ol>	<ol style="list-style-type: none"><li>1. Check the power inlet</li><li>2. Replace Fuse</li><li>3. Request A/S</li></ol>
Key doesn't operate	<ol style="list-style-type: none"><li>1. Key pad defective</li></ol>	<ol style="list-style-type: none"><li>1. Check the key</li><li>2. Request A/S</li></ol>
The temp. of solution doesn't rise	<ol style="list-style-type: none"><li>1. Heater is not set properly</li><li>2. Heater disconnected</li></ol>	<ol style="list-style-type: none"><li>1. Check the Heater Set</li><li>2. Request A/S</li></ol>
Time function doesn't operate	<ol style="list-style-type: none"><li>1. PROGRAM abnormal</li></ol>	<ol style="list-style-type: none"><li>1. Check Time Set</li><li>2. Request A/S</li></ol>
Cleaning power is weakened	<ol style="list-style-type: none"><li>1. Solution is old, pollution level is high.</li><li>2. Solution is insufficient</li><li>3. Residue on bath bottom is solidified</li><li>4. The works are too much put in the bath</li></ol>	<ol style="list-style-type: none"><li>1. Replace Solution</li><li>2. Add Solution</li><li>3. Clean the Bath</li><li>4. Adjust the amount of the works until cleaning power is normal</li></ol>
Temperature display as the ER.	<ol style="list-style-type: none"><li>1. Temp. sensor is damaged</li></ol>	<ol style="list-style-type: none"><li>1. Replace temp. sensor</li><li>2. Request A/S</li></ol>

### 6. Warranty

- A. The warranty period is 1 year from the date the product was purchased.
- B. During this period, damage caused by defects is repaired freely.
- C. Damage resulted from mis-operation is responsible for the end-user.

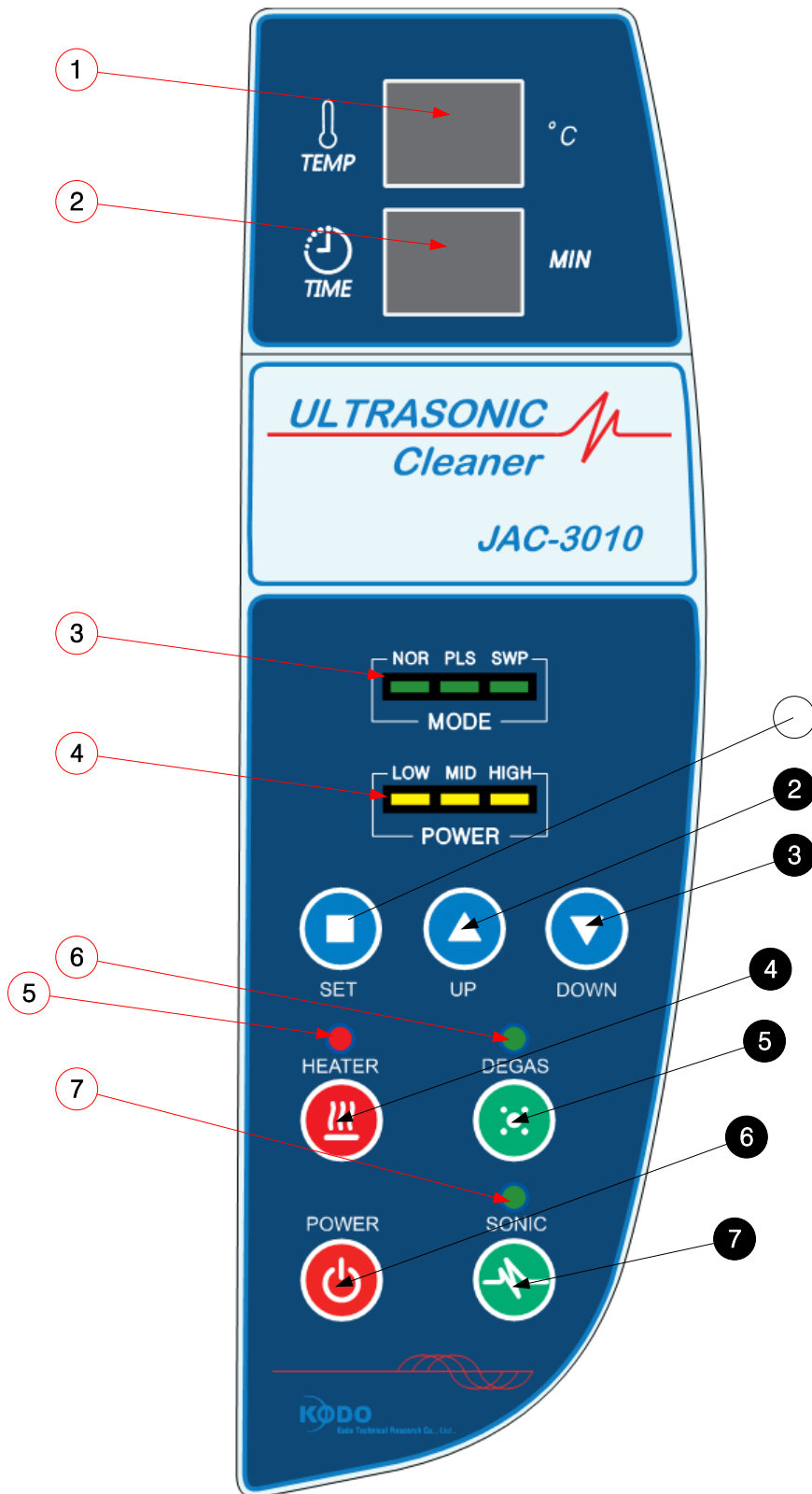
## 7. Membrane

### A. NXPC-B/NHPC-B Series



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## B. JAC/NHF Series



# *ULTRASONIC CLEANER*

MEMO

*ULTRASONIC CLEANER*



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