CENTRIFUGE NEYA

Instruction and Maintenance Manual

Extract from the original instructions

NEYA 8

NEYA 10

NEYA 16

NEYA 10R

NEYA 16R

Manufacturer:
REMI ELEKTROTECHNIK LTD
Survey 65/1, Valiv Village, Vasai (East),
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India

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Summary

1. Safety informations

• Definitions of warning words and symbols

The safety information in this manual is very important to avoid personal injury, damage to the machine, accessories, malfunctions or incorrect results due to non-compliance with them. Read this manual carefully in its entirety and make sure you are familiar with the centrifuge before operating and starting to work with it.
This manual must be kept near the device in an easily accessible place, therefore the operator can consult it if necessary. Always attach the instruction manual in case of transfer of the device to third parties.
Safety instructions are indicated with warning terms or symbols.

• Signal terms

ATTENTION for a hazardous, medium risk situation which could lead to serious injury or death if not avoided.

ATTENTION for a hazardous situation with reduced risk which, if not avoided, can result in material damage, loss of data, or minor or moderate injury.

WARNING for important product information.

NOTE for useful product information.

• Warning symbols:

ATTENTION
This symbol indicates a potential risk and warns you to proceed with caution.

ATTENTION
This symbol draws attention to a possible danger **due to electric current.**

ATTENTION
This symbol draws attention to a possible **danger of explosion.**

ATTENTION
This symbol draws attention to possible damage to health **due to infectious liquids and pathogenic germs.**

ATTENTION
The instrument must be used following the instructions in the reference manual. Carefully read the instructions.

WARNING
This symbol draws attention to possible damage to instruments or instrumental parts.

NOTE
This symbol highlights additional information and suggestions.

ATTENTION
This symbol highlights a general prohibition.

• Fundamental requirements for safe use

The correct functionality of the centrifuge and the safety of the operator are guaranteed only if all the following indications are respected:

- The centrifuge may only be used for the purposes for which it was built and only in accordance with the specifications mentioned in this manual. Any other use may cause damage, contamination and injury with serious consequences.
- The centrifuge must only operate in the environmental conditions indicated in this manual.
- Normal use of the centrifuge may require the handling of biological and hazardous materials. For the centrifugation of this substance, use aerosol-tight closure systems and put on personal protective equipment. Users and maintenance personnel must have specific professional requirements for each substance they use; they must be trained to operate safely.
- Keep a space 30 cm at least around the centrifuge.
- The mains power plug must always be freely accessible. Pull out the power plug or disconnect the power supply for emergency.
- The centrifuge must only be connected to properly grounded sockets using only the power cable supplied.
- Verify that the power supply and the frequency correspond to the values indicated in the identification label of the instrument.
- The centrifuge must only be used with the rotors and accessories supplied. If you need to replace or purchase them, contact your local distributor.
- The load must always be balanced and symmetrically distributed in the rotor housings.
- The machine must not be dismantled and opened by the user for any reason. Execute this operation only if explicitly authorized by the manufacturer.

• Unauthorized use

The centrifuge must not be started if:

- It is visibly damaged (for example due to shipment)
- It has been stored for a long period of time in adverse conditions (exposure to direct light, heat sources or places saturated with gases or vapours) or in environments with conditions other than those mentioned in this manual.
- For structural reasons and due to environmental conditions, this centrifuge is not suitable for use in a potentially explosive atmosphere or in an environment where you work with substances at risk of explosion.
- Do not treat explosive, highly reactive substances or substances that may contribute to create a potentially explosive atmosphere with this centrifuge
- the centrifuge must therefore only be used in a safe environment, such as the open environment of a properly ventilated laboratory or an extractor hood. The final assessment of the risks associated with the use of these substances falls within the responsibility of the user of the device.

• Responsibility of the owner of the instrument

The person who holds the ownership and who uses the centrifuge or authorizes its use by other people is the owner of the instrument and as such is responsible for the safety of all users of the machine and of third parties. The owner of the machine must inform users to use it safely in their workplace, to manage potential risks and providing the required protective devices. When using chemicals or solvents, follow the manufacturer's safety data sheets. In the following cases it is possible that the protection provided for the centrifuge is compromised. The responsibility for any damage to persons and materials falls on the user if:

- The centrifuge is not used in accordance with the instructions for use;
- The centrifuge is used outside the scope of application described in this manual;
- The centrifuge is used with accessories or consumer articles not recommended by the supplier;
- The centrifuge has been serviced and repaired by a person not authorized by the supplier;
- The user makes unauthorized changes to the device.

2. General warnings

	Only authorized personnel can use this centrifuge. The user must go through the instructions and understand every aspect before using this machine. In case of malfunction, contact the supplier.
	This centrifuge must not be placed inside another unit or electrically or mechanically connected to another unit. Only the rotors and accessories supplied with this centrifuge and by this manufacturer should be used with this machine. Check that they are not damaged before each use. The rotors and accessories of this centrifuge must not be used on centrifuges of other brands and viceversa.
	Do not place flammable samples, chemicals with exothermic properties, explosive or highly reactive substances for centrifugation inside this centrifuge.
	No person other than those authorized by the manufacturer is authorized to make modifications to the centrifuge after shipment from the factory.
	In case of any damage to the unit or in the presence of abnormal noises or anomalies, stop the use of this centrifuge and immediately report the fault to the supplier.
	In case of liquid spills, disconnect the device from the power supply and thoroughly clean the device and accessories, following the cleaning and disinfection instructions given in the instruction's manual.
	Never attempt to override the safety systems and / or work with the centrifuge lid open.
	Give particular attention when using dual sand witch tubes with internal filters, when the filter porosity is not similar in the tubes, it can lead to unbalance at high speeds thereby causing irreparable damage to the machine.
	When opening and closing the lid, do not grasp the part between the lid and the centrifuge, do not insert your fingers into the centrifuge closure and do not grasp the lid locking mechanism, this could cause physical damage.
	Make sure that the centrifuge lid opens completely and remains in the open final position. Regularly check that the gas spring works perfectly. In case of malfunction, contact the supplier's technical service.
	In case of emergency lid release, the rotor could continue rotating for a few more minutes. Check through the peephole in the lid that the rotor has stopped before intervening on the "emergency opening".
	When changing the rotor, the power supply must be disconnected. This operation must be carried out by qualified personnel.
	The tubes must always be weighed complete with contents and caps.
	Place the tubes symmetrically before starting centrifugation. Use only metal buckets suitable for the type of rotor used and tubes suitable for adapters used. Use only tubes that have been approved by the manufacturer with the desired g (rcf) values. Do not use fragile or deforme tubes.
	The centrifuge is designed for centrifuging substances with a maximum density of 1.2 g / ml, at maximum speed and at maximum volume filling / load. Do not exceed the maximum rotor load.
	Never use chemicals or cleaners which could be naturally corrosive. This could cause damage to the centrifuge. Use a dry cloth to clean the inside of the chamber.
	The interior of the chamber must be cleaned and checked regularly for contamination.
	In case of continuous use of the refrigerated models, turn off the centrifuge regularly to let the ice melts, remove any deposits and condensing formation using a soft and absorbent cloth. This is useful for decreasing icing and compressor overheating during cooling.

• Biological safety

During operation, the centrifuge can generate particles suspended in the air. Since these NEYA 8/10/16 models are not refrigerated centrifuges therefore they do not have a completely sealed chamber. This type of ventilated centrifuge helps to reduce the excess heat created by the friction of the rotor with air in the internal chamber, while the Neya 10R / 16R refrigerated models have a totally sealed chamber. To minimize the risks of aerosols coming into direct contact with the person, always use tubes with biosafe lids. Glass tubes, if used, should not be filled to the top to avoid spilling of liquid. Also, since the lid on the top has a gasket, you must make sure that this gasket is not damaged. As it prevents direct exposure of the user with the sample. It is also advisable to open the centrifuge lid 3 minutes after the centrifuge has stopped. This will give the particles time to disperse into air.
Bioseals (biological seal) is a part of biological safety systems, which are unable to guarantee the safety of people and the environment when handling pathogenic microorganisms or infectious liquids. When working with pathogenic organisms or infectious liquids of a high-risk group, more than one aerosol-tight seal must be provided. If liquids are spilled into the chamber or into the rotor housing, the centrifuge must be thoroughly and entirely cleaned by specialized personnel. In case of contact with infectious liquids and pathogenic germs, comply with national regulations, the biological safety level of your laboratory, the safety data sheets and the manufacturers' instructions for use. Wear personal protective equipment's.

• Safety and/or protection devices

- Safety lid interlock to prevent lid opening during centrifugation.
- Detection of unbalances and stop of centrifugation with display error.
- Emergency unlocking of the lid.
- Gas hinge to prevent the door from falling.

See descriptions in the rest of the manual.

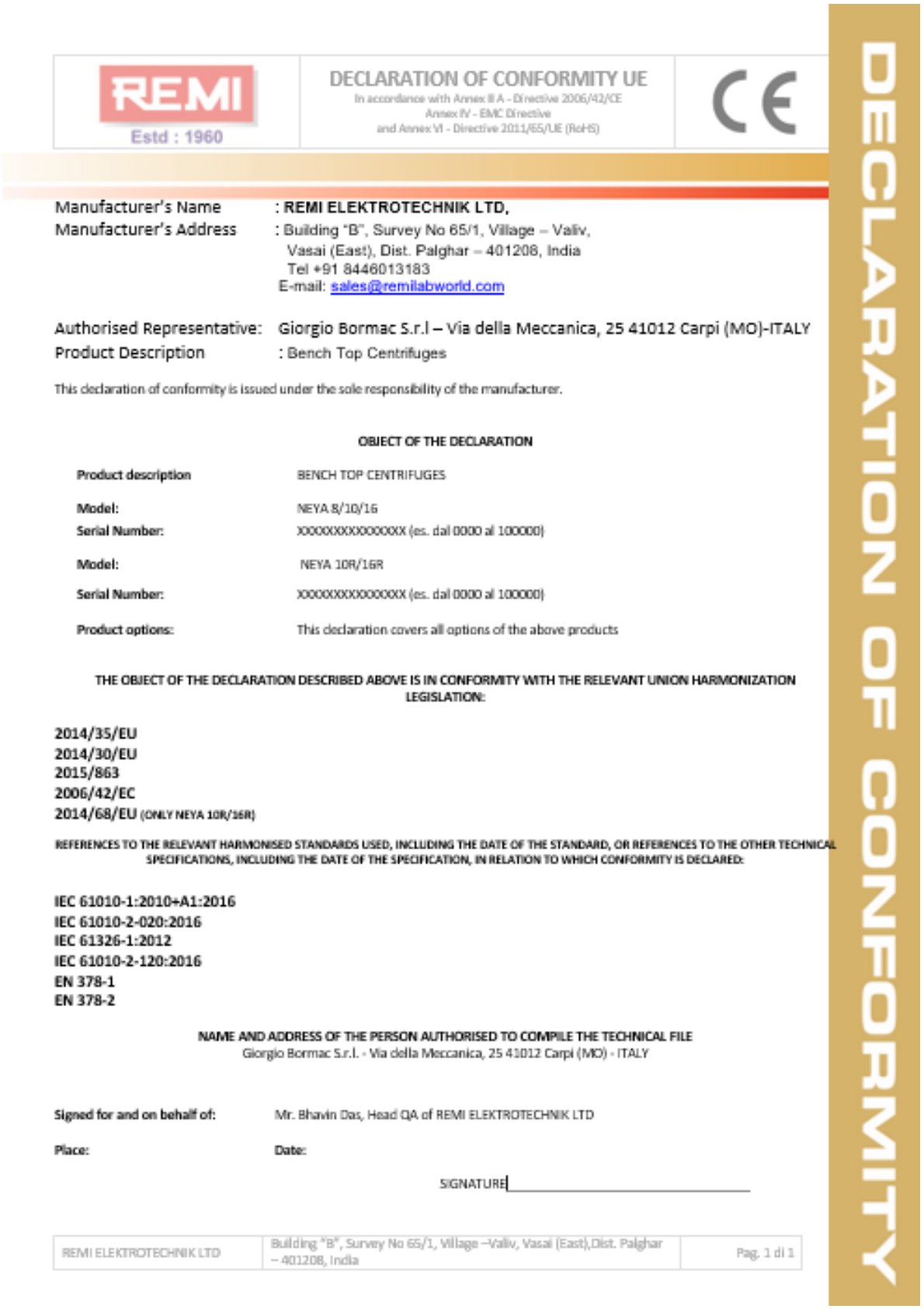
• Intended use

Centrifuges are widely used in auxiliary laboratories, hospitals, industries, research institutes, medical and pharmaceutical laboratories. They are also suitable for determining the settlement of paints, cosmetics and food products. This centrifuge is designed exclusively to accelerate the separation between substances having different densities by using of the centrifugal force or, more precisely, centrifugal acceleration.

ATTENTION:
Only qualified technical personnel in the above-mentioned areas of destination can use the product described in this manual. Any use not expressly described above and within this manual, such as for products other than those specified, in environmental conditions other than those specified, with accessories other than those specified, is to be considered prohibited use.

3. CE marking data

The equipment is made in accordance with Directive 2006/42/EC and the relevant and applicable Community Directives at the time of its placing on the market (fac-simile below).



REMI
Estd : 1960

DECLARATION OF CONFORMITY UE
In accordance with Annex II A - Directive 2006/42/CE
Annex IV - EMC Directive
and Annex VI - Directive 2011/65/UE (RoHS)

CE

DECLARATION OF CONFORMITY

Manufacturer's Name : **REMI ELEKTROTECHNIK LTD,**
Manufacturer's Address : Building "B", Survey No 65/1, Village – Valiv,
Vasai (East), Dist. Palghar – 401208, India
Tel +91 8446013183
E-mail: sales@remilabworld.com

Authorised Representative: Giorgio Bormac S.r.l – Via della Meccanica, 25 41012 Carpi (MO)-ITALY
Product Description : Bench Top Centrifuges

This declaration of conformity is issued under the sole responsibility of the manufacturer.

OBJECT OF THE DECLARATION

Product description	BENCH TOP CENTRIFUGES
Model:	NEYA 8/10/16
Serial Number:	XXXXXXXXXXXXXX (es. dal 0000 al 100000)
Model:	NEYA 10R/16R
Serial Number:	XXXXXXXXXXXXXX (es. dal 0000 al 100000)
Product options:	This declaration covers all options of the above products

THE OBJECT OF THE DECLARATION DESCRIBED ABOVE IS IN CONFORMITY WITH THE RELEVANT UNION HARMONIZATION LEGISLATION:

2014/35/EU
2014/30/EU
2015/863
2006/42/EC
2014/68/EU (ONLY NEYA 10R/16R)

REFERENCES TO THE RELEVANT HARMONISED STANDARDS USED, INCLUDING THE DATE OF THE STANDARD, OR REFERENCES TO THE OTHER TECHNICAL SPECIFICATIONS, INCLUDING THE DATE OF THE SPECIFICATION, IN RELATION TO WHICH CONFORMITY IS DECLARED:

IEC 61010-1:2010+A1:2016
IEC 61010-2-020:2016
IEC 61326-1:2012
IEC 61010-2-120:2016
EN 378-1
EN 378-2

NAME AND ADDRESS OF THE PERSON AUTHORISED TO COMPILE THE TECHNICAL FILE
Giorgio Bormac S.r.l. - Via della Meccanica, 25 41012 Carpi (MO) - ITALY

Signed for and on behalf of: Mr. Bhavin Das, Head QA of REMI ELEKTROTECHNIK LTD

Place: **Date:**

SIGNATURE_____

REMI ELEKTROTECHNIK LTD | Building "B", Survey No 65/1, Village –Valiv, Vasai (East),Dist. Palghar – 401208, India | Pag. 1 di 1

4. Guarantee

Thank you for purchasing a centrifuge NEYA. In normal use conditions, the instrument is guaranteed for a period of 24 months from the date of purchase. The warranty is valid only if the product is original.
It does not apply to any product or parts of it that have been damaged due to incorrect installation, improper connections, improper use, accident or abnormal conditions of operation.
The manufacturer declines all responsibility for damage caused by failure to follow instructions, lack of maintenance and any unauthorized modification.

5. Unpacking of the centrifuge

Open the external packaging of the centrifuge and remove all the content.
Lift the centrifuge from the pack holding it from the bottom and taking care do not handle it in the front part plastic but taking it in the metal part. Place the centrifuge on the table as described at paragraph "First use".
Put inside the external box all the packaging parts and conserve the total packaging.

Note: *In case of shipment of the centrifuge to technical assistance, the user is required to pack it in its original box to send it for repair service. In case it is not present, pack it properly to avoid damages during transportation. All eventual damages caused by improper packaging will be not covered by warranty.*

• Content of package

The centrifuge is shipped complete of the below parts:

- n. 1 wrench for fixing the rotor
- n. 1 Allen key for manual opening of the lid
- n. 1 small bottle with maintenance grease
- n. 1 power supply cable
- n. 1 user manual

• First use

• *Getting started*

1. The instrument must be installed in the below conditions:
2. Dry, clean and stable worktable with a flat horizontal surface;
3. Respect minimum spaces around instrument 30 cm;
4. Room temperature between 20 °C and 30 °C and maximum relative humidity of 80%;
5. Power supply socket with earth connection;
6. Power supply between 220-240 V - 50 Hz with minimum current intensity capacity of 5 A;
7. The location of the device is not exposed to direct sunlight;
8. Do not place the centrifuge near sources of strong electromagnetic radiation.

- ***Parts of the instrument***

Figure 1 – Frontal view

Figure 2 – Side view

Note: *some parts of the pictures above, such as the commands and the cooling part, may be present or absent and different according to the centrifuge model.*

6. Technical specifications

Table 1

Features	**NEYA 8**
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)
Maximum speed	4.500 rpm (swing out) - 6.000 rpm (fixed angle)
Setting RPM	Yes
Setting RCF	-
Display RCF	-
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode
Date and Time	-
Acceleration levels	L-M-H (Low - Medium - High)
Deceleration levels	L-M-H (Low - Medium - High)
Spin function	-
Programs	-
Indication of rotor	Yes
Noise	≤ 55 dB
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg
Height of access to the chamber	275 mm
Voltage / Power	220 ±10% V 50 Hz / 450 W

Table 2

Features	**NEYA 10**	**NEYA 10R**
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)	
Maximum speed	4.500 rpm (swing out) - 6.000 rpm (fixed angle)	
Setting RPM	Yes	
Setting RCF	Yes	
Display RCF	Yes	
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode	
Date and Time	Yes	
Acceleration levels	0÷9 (0 = min - 9 = max)	
Deceleration levels	0÷9 (0 = no brake, 1= min - 9 = max)	
Temperature range	-	-10 ÷ +40°C / +14 ÷ +114°F
Precool function	-	Yes
Display temperature	-	Yes (°C and °F)
Spin function	Yes	
Programs	10 programs with protection function	
Indication of rotor	Yes	
Noise	≤ 55 dB	≤ 55 dB
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg	730 x 640 x 330 mm / 70 Kg
Height of access to the chamber	275 mm	
Voltage / Power	220 ±10% V 50 Hz / 450 W	220 ±10% V 50 Hz / 750 W

Table 3

Features	**NEYA 16**	**NEYA 16R**
Maximum capacity	4 x 175 ml (swing out) - 6 x 100 ml (fixed angle)	
Maximum speed	4.500 rpm (swing out) - 16.000 rpm (fixed angle)	
Setting RPM	Yes	
Setting RCF	Yes	
Display RCF	Yes	
Timer	00:30 ÷ 99:50 (mm:ss) and continuous mode	
Date and Time	Yes	
Acceleration levels	0÷9 (0 = min - 9 = max)	
Deceleration levels	0÷9 (0 = no brake, 1= min - 9 = max)	
Temperature range	-	-10 ÷ +40°C / +14 ÷ +114°F
Precool function	-	Yes
Display temperature	-	Yes (°C and °F)
Spin function	Yes	
Programs	10 programs with protection function	
Indication of rotor	Yes	
Noise	≤ 55 dB	≤ 55 dB
External dimensions WxDxH/Weight	450 x 590 x 330 mm / 40 Kg	730 x 640 x 330 mm / 70 Kg
Height of access to the chamber	275 mm	
Voltage / Power	220 ±10% V 50 Hz / 450 W	220 ±10% V 50 Hz / 750 W

7. Display and control panel

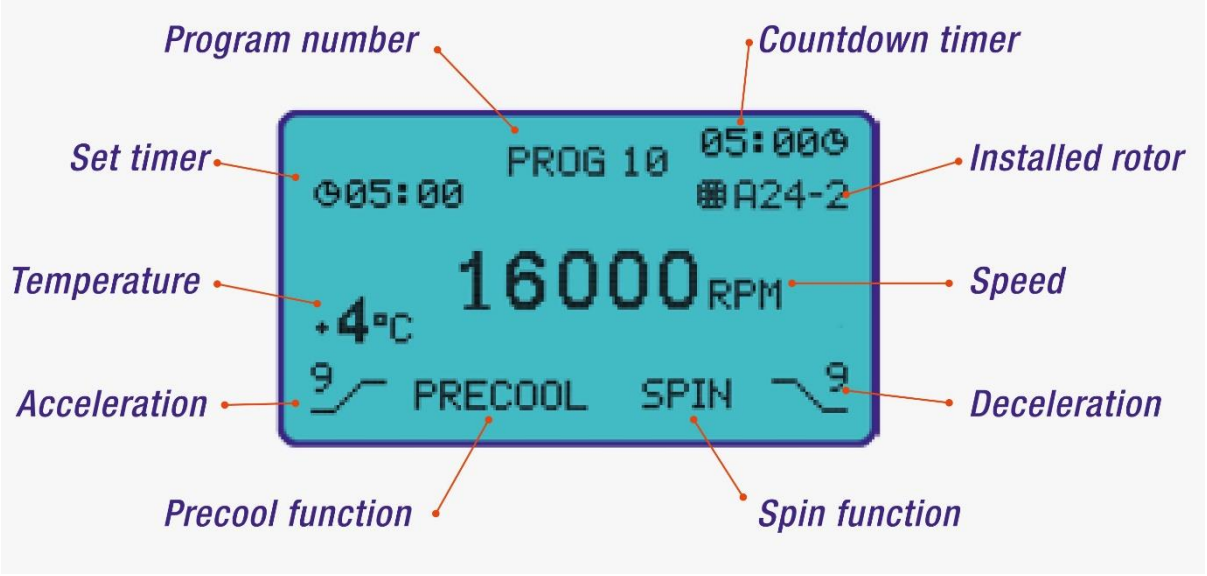


Figure 3 – Complete display

Figure 4 – Standby display

Figure 5 – Working cycle

Figure 6 – Protected program

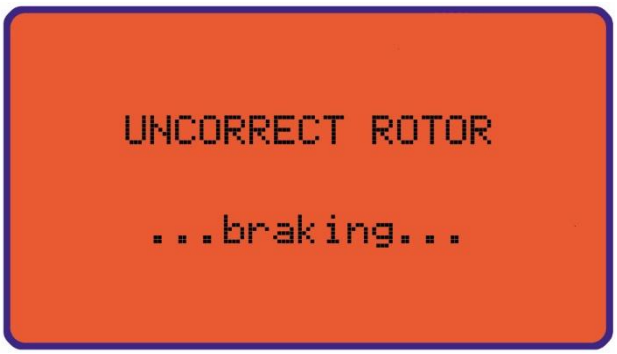


Figure 7 – Alarm signaling

NOTE: *some parameters of the above screens are different depending on the model centrifuge.*

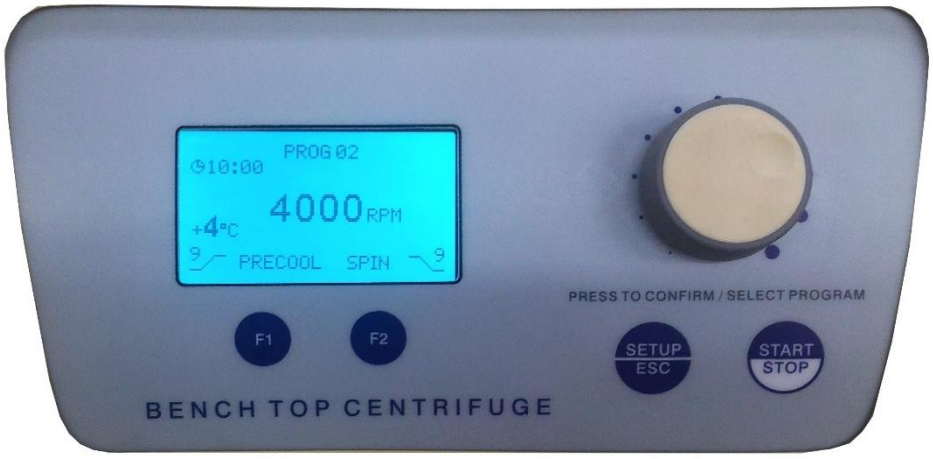


Figure 8 – Frontal panel

		RIGHT/LEFT	Permits to scroll inside menus
		RIGHT	Increases the value you are editing
		LEFT	Decreases the value you are editing
		ENTER	Chooses the program, confirms the selected menu or a modification
	START / STOP		Permits to start and stop a centrifugation cycle or to stop a precool cycle
	SETUP / ESC		In standby screen it permits to enter in SETUP menu, in all the rest of screens permits to return to the previous one (ESCAPE)
	MULTIFUNCTION F1		Pressing this key, the corresponding operation present on display is activated
	MULTIFUNCTION F2		Pressing this key, the corresponding operation present on display is activated
	ON / OFF		The ON/OFF button permits to switch on and switch of the centrifuge

8. Operation

• Switching on the centrifuge

Turn on the centrifuge by the button ON / OFF on the left side (Frontal view).
The display switches on and shows for few seconds:

- centrifuge model;
- software version;
- date;
- time.

After a few seconds, the standby screen is automatically displayed (see Figure 4).

• Opening the lid

To open the lid, the centrifuge must be switched on and there must not be a work cycle in progress.
Move the opening lever of the lid on the left side (frontal view), the lid opens and rises by the action of the gas spring. If necessary, conclude manually the opening of the lid.

ATTENTION:
The centrifuge has a safety opening system usable in case of power supply absence.
For safety reasons it is strongly recommended to open the machine in this condition only if necessary.

In that case, you must respect the instructions written on safety sticker that cover the emergency opening hole (see Figure 9).

In case of emergency opening, wait at least 15 minutes before open the lid. **Warranty and safety rules are not guaranteed if this sticker is broken.**	

Figure 9 – Safety sticker

After have waiting at least 15 minutes from the moment of power supply absence, visually check that rotor is stopped through the observation window on the lid of centrifuge.
Using the small Allen key supplied or alternatively a small screwdriver, pierce the safety sticker and leveraging down. At the same time pull the opening handle.

Warning:

As specified on safety sticker, the warranty and safety rules are not guaranteed if this sticker is broken.
The above sticker is not removable and not modifiable, so in case that operator needs to open the lid in case of power supply absence, please contact the technical assistance service for specifying the incident and restore the label of safety.

• Installation of the rotor

To properly install the rotor, it is necessary follow below instructions:

1		Turn the motor shaft until the flat part is aligned to the arrow ▼ present on the seal (see side picture).
2		Turn the rotor in order that the arrow ▲ printed on it is aligned with the arrow ▼ present on the seal (see side picture).
3		Insert the rotor on motor shaft making that the flat part of the shaft matches with the one of the rotor.

4		Hold the motor with one hand and with the other one screw the lock nut clockwise. Using the wrench supplied, tighten the lock nut until it is well locked (see side picture).
5		Check that rotor is properly fixed trying to move it with both hands.

• Load and balancing of the rotor

• *Automatic rotor detection*

The centrifuge is equipped of an automatic rotor detection system.
This feature is very important for the safety of operator and of the machine, which prevents that:

- the centrifuge works beyond the speed limit of the rotor;
- the centrifuge works without rotor installed.

ATTENTION:
Even if it's not necessary set the rotor during programming and the automatic recognition avoids exceeding the maximum permitted speed, it is still essential that the operator knows well the limits of the rotor and accessories with which equips the machine. These limits are always specified on the accessories.

• *Load of the rotor*

Warning:
<u>The centrifuge has been designed and built to centrifuge liquids or liquid samples containing small solid particles. It is strictly forbidden centrifuge solids of any kind.</u> Any damage caused by the use during centrifugation of this type of materials is not covered by warranty.
<u>Moreover, also the centrifugation of explosive materials or having dangerous chemical reactions is strictly prohibited.</u> Any damage caused by the use during centrifugation of this type of materials is not covered by warranty. **<u>It is strictly forbidden to centrifuge samples loaded directly into the metal bucket or carrier.</u>**
Samples must always be centrifuged within a container (tube or bottle with flat bottom).
Any damage caused by failure to comply with these conditions of use is not covered by warranty.
<u>The samples to be centrifuged should never exceed the density of 1.2 g/ml.</u> The tubes must be realized in very good quality material. They tend to heat up during centrifugation, so before use them check their temperature limits. **<u>Moreover, check their speed limit that often is lower than the one of rotor: for example, for glass tubes.</u>**
In case of the tubes have caps, seal properly them before centrifugation, to avoid eventual losses of sample.

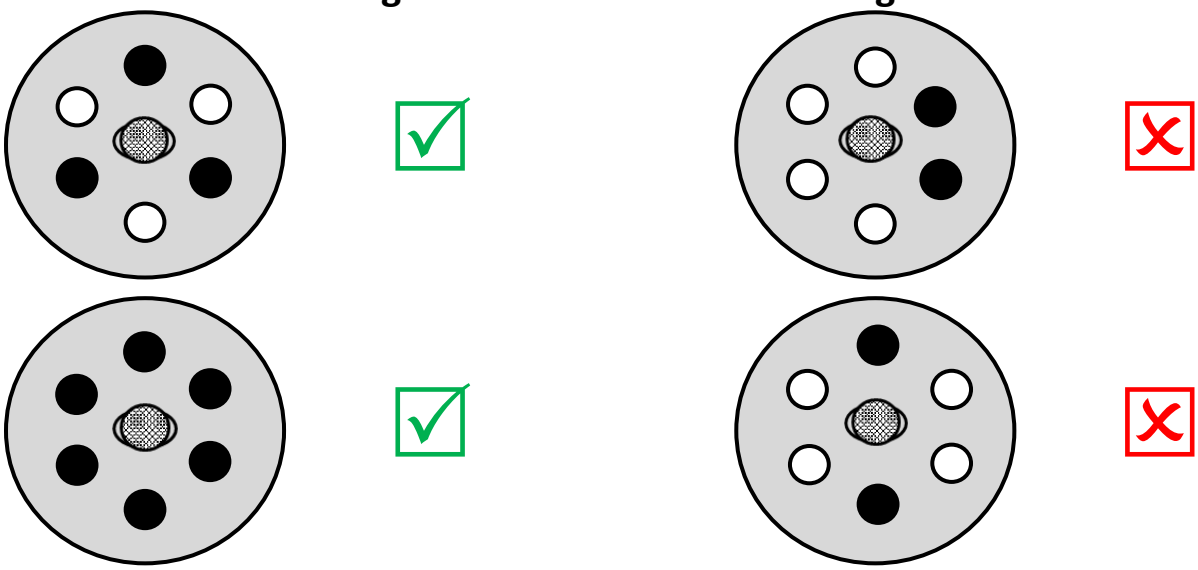
• *Balancing of the rotor*

Warning:
<u>Before to start a centrifugation cycle is essential to properly balance the rotor loads.</u>
<u>The load balancing should always be performed in accordance with the rule of the loads symmetry, which must always be considered in terms of weight and not by volume.</u>

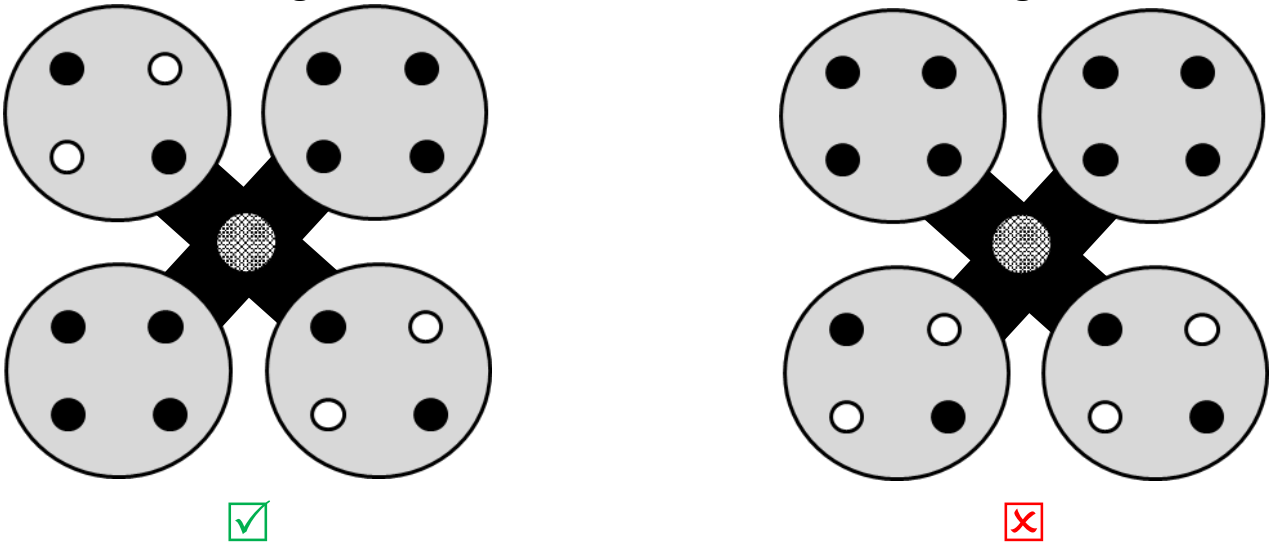
Rotors are generally used completely full: all the places are filled with tubes**. If the samples are not sufficient to fill all the places, it is recommended to use all of them filling the empty ones by tubes with water.**
This permits the correct symmetric balancing necessary for acceleration and deceleration phases more linear.

Warning:
In any case, both with complete filling or with partially filling, it is absolutely necessary to distribute the loads symmetrically around the axis of the rotor.
If the loads were not well balanced and the centrifuge went into unbalance, the centrifuge would stop immediately and go into "unbalance error" (see Figure 7). Here are some examples of correct and incorrect balances:

Fixed angle rotor with 6 tube housings



Swing out rotor with inserts for 4 tube housings



Warning:
In case of configuration with aluminium carriers, the use of the same type and model is strongly recommended for all four rotor housings. The use of alternating and different carriers would damage the rotor and the centrifuge.

• Message “Motor Imbalance”

The centrifuge is equipped by an automatic system for imbalance detection.

If it is used with a load not balanced correctly, the machine will automatically stop and signals a fault to the operator with intermittent beep and message "Motor Imbalance" on flashing red screen. If this occurs, you should wait until the centrifuge stops and open the lid. Opening the lid the error message will disappear. **Once you open the lid to check the correct load balancing as described at § 8.**

• Message “ERROR check imbalance switch”

Note: *The system for the imbalance detection is magnetic, so it can sometimes happen that it remains "closed" and then the centrifuge gives the following error message "ERROR Check imbalance switch".*

To eliminate the error is sufficient to slightly push for a couple of seconds the motor shaft towards the rear part of the centrifuge by directly pressing the rotor by the hand. If it’s necessary, repeat the operation.

When you switch on the centrifuge for the first time, it may give the above error message. The situation is normal and is due to the transport of the machine with tabs that hold the motor shaft. Follow the steps above to clear the error.

• Setting of programs (if present)

The follow instructions are valid for centrifuges NEYA 10/10R and NEYA 16/16R. To set centrifugation parameters for NEYA 8 please refer to paragraph 8. With closed lid and centrifuge in standby mode (see Figure 4), press shortly SETUP/ESC key, display goes into SETUP menu and word “PROGRAM” starts to blink (see Figure 10).

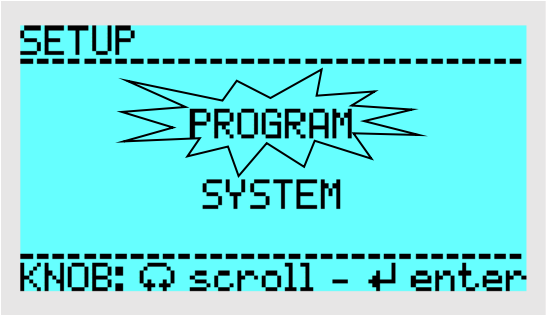


Figure 10

Press shortly the knob to confirm the flashing selection, display passes into the choose of program to be modified menu (see Figure 11).

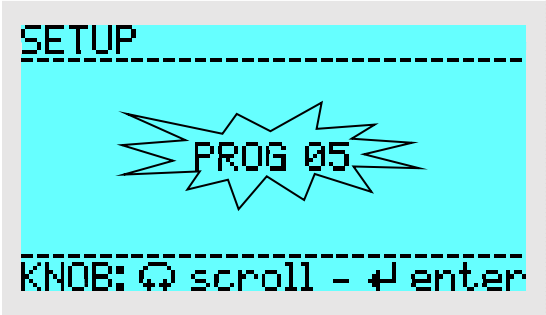


Figure 11

Turn the knob if you desire to change the program to be modified and confirm the selected program pressing shortly the knob. The display passes in the adjusting menu of the selected program parameters “SETUP PROG” (see Figure 12).

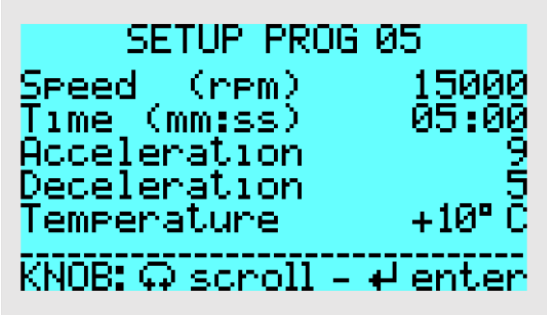


Figure 12

In the left part of the screen there are the editable parameters and the selection (flashing) is already active. Through the knob move the selection on the desired parameter. Press shortly the knob and the selection moves on the value of the chosen parameter (right part of the screen).

Increase or decrease the value turning the knob in clockwise or counterclockwise. Press again the knob to confirm the value. The selection moves on the parameters.

Note: *when speed is the flashing parameter, the online guide present on the bottom part of the screen disappears and the word “rcf” or “rpm” appears in correspondence of the multifunction button F2 F2. Pressing shortly F2 button it’s possible alternately change the speed parameter between rpm (revolutions per minute) and rcf (relative centrifugation force).*

Note: *the parameter “temperature” is present only in the refrigerated versions NEYA 10R and NEYA 16R.*

After having edited the parameters press more times the SETUP/ESC SETUP ESC button to return to standby display (see Figure 4).

Note: *if the last parameter down, “deceleration” for the ventilated centrifuges, “temperature” for refrigerated centrifuges, is changed, the word “parameters saved” shortly appears on display and it automatically returns in standby (see Figure 4).*

• Setting of centrifugation cycle (NEYA 8 Only)

With closed lid and centrifuge in standby mode (see Figure 4), press shortly SETUP/ESC SETUP ESC key, display goes into SETUP menu of centrifugation parameters. In the left part of the screen there are the editable parameters and the selection (flashing) is already active. Through the knob move the selection on the desired parameter. Press shortly the knob and the selection moves on the value of the chosen parameter (right part of the screen).

Increase or decrease the value turning the knob in clockwise or counterclockwise. Press again the knob to confirm the value. The selection moves on the parameters.

Increase or decrease the value turning the knob in clockwise or counterclockwise. Press again the knob to confirm the value. The selection moves on the parameters. After having edited the parameters press more times the SETUP/ESC SETUP ESC button to return to standby display (see Figure 4).

Note: *if the last parameter down “deceleration” is changed, the word “parameters saved” shortly appears on display and it automatically returns in standby (see Figure 4).*

- **Selection of the program (if present)**

With closed lid and centrifuge in standby mode (see Figure 4) press shortly the knob. The program number in the upper central part of display starts to blink (see Figure 13).

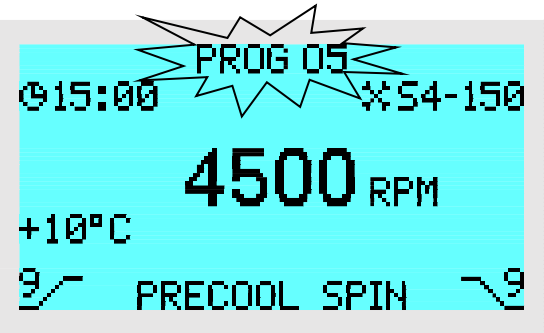


Figure 13

Turn the knob to modify the program number and after press it to confirm the desired program.

- **Start/stop of a centrifugation cycle**

ATTENTION:

Before executing a centrifugation cycle check the rotor is properly locked as described at § 8 and to have rightly balanced the loads as specified at § 8.

With closed lid and centrifuge in standby mode (see Figure 4), press shortly the START/STOP button. The centrifugation cycle starts with the set parameter of that program or centrifugation cycle and display appears green as shown in Figure 14.

Figure 14

Note: *the display contemporary shows the set timer (on the left) and actual timer (countdown) on top right. As shown at Picture 14, the actual timer remains "--:--" until the set speed is achieved.*

Once the set speed is achieved the countdown starts and icon blinks (see Figure 15).

Figure 15

Note: *during the centrifugation cycle it is possible to see alternatively the speed in "rcf" and "rpm" pressing the multifunction key F2 (except NEYA 8).*

At the end of set timer or pressing START/STOP button the centrifugation cycle stops and the centrifuge starts to decelerate. When rotor is completely stopped, if it is not excluded by the operator in SYSTEM menu, a short intermittent beep alerts the user that the spin cycle has ended.

Note: *simultaneously to the sound alert and until the lid is opened, the LED bar flashes to indicate that the spin cycle has been completed (see Figure 16).*

Figure 16

Note: *only in the refrigerated centrifuges, at the end of centrifugation cycle, the display remains in green color and shows the word "0 RPM" flashing and the detected temperature inside the chamber.*

Only in refrigerated centrifuges at the end of the centrifugation cycle the display remains green and displays the flashing "0 RPM" and the temperature detected inside the chamber. If the temperature of the chamber is higher than the set one for that program, the cooling system remains active until the lid is opened. The possible ice on the chamber during this phase is normal.

- ## Block/unblock of a program (if present)

With closed lid and the centrifuge in standby mode (see Figure 4), press shortly the SETUP/ESC button, the display passes in SETUP menu and the word "PROGRAM" starts to blink (see Figure 17).

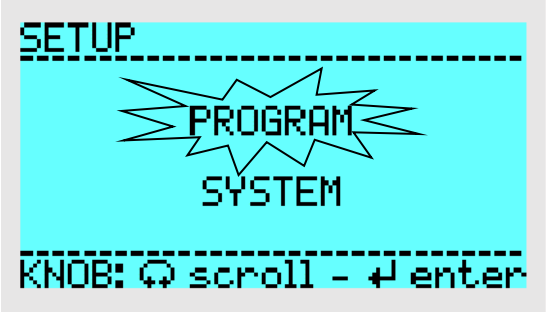


Figure 17

Press shortly the knob to confirm the blinking selection, the display passes in the menu of program number selection (see Figure 18).

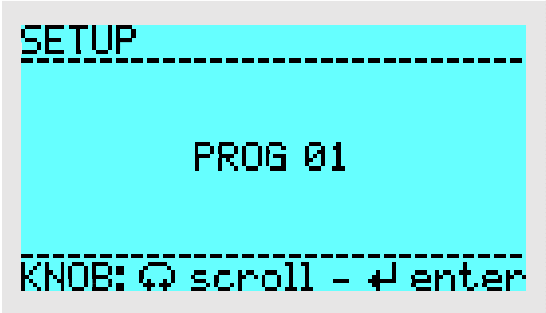


Figure 18 – Program not protected

Turn the knob if you desire to modify the program number to be blocked/unblocked. To block or unblock the selected program, keep contemporary pressed both the multifunction keys F1 and F2 for some seconds (about 5). The unblocked program become blocked with purple screen (see Figure 19) and viceversa.

Figure 19 – Program protected

Note: *when a program is blocked it is not editable. Unblock the program to make it editable.*

• PRECOOL function (if present)

In the refrigerated version NEYA 10R and NEYA 16R the precooling function "PRECOOL" is available.
With closed lid and the centrifuge in standby mode (see Figure 4), press shortly the multifunction button F1. The precooling function "PRECOOL" starts with the following preset parameters (see Figure 20):

- Speed= 2000 rpm
- Timer= 15 minutes
- Acceleration= 5
- Deceleration= 5
- Temperature= 4°C

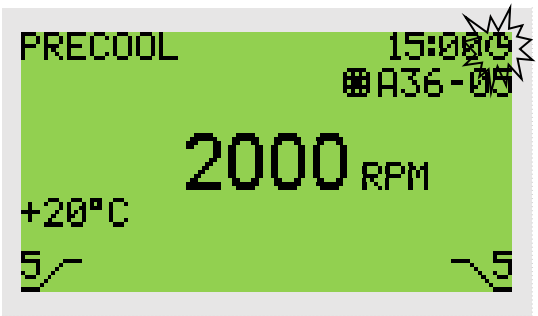


Figure 20 –PRECOOL cycle

• SPIN function (if present)

With closed lid and the centrifuge in standby mode (see Figure 4), press and keep pressed the multifunction button F2. The centrifuge starts the centrifugation cycle with the parameters set in the selected program increasing speed until the F2 is pressed arriving to the set speed maximum. Releasing the F2 key the SPIN cycle stops and the centrifuge decelerates to the complete rotor stopping.
Note: *due to the SPIN cycle, the set timer in the program is not considered and instead of the countdown on the top right of display the effective timer (countup) is shown (see Figure 21).*

Figure 21 – SPIN cycle

9. SYSTEM Menu

In the menu there are some settings of the centrifuge that operator can modify.

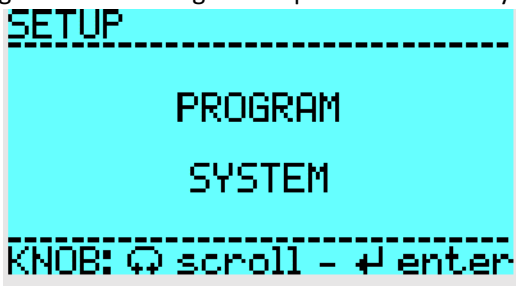


Figure 22

With closed lid and the centrifuge in standby mode (see Picture 4), press shortly SETUP/ESC button, the display passes in SETUP menu and the word "PROGRAM" starts to blink (see Picture 22). Turn the knob to move the selection on "SYSTEM" and press the knob to confirm. The display passes in the next menu in which there are present two items:

- SYSTEM
- SERVICE

Rotate the knob to move the selection on "SYSTEM" and press the knob to confirm.
The display passes in the next menu in which there are present the follow items:

- END cycle beep
- Speed limit
- Time/Date adjustment
- Temperature unit
- Factory reset

- ***END cycle beep***

This function permits to enable or disable the audible signal of the end of centrifugation. By the knob select this parameter, modify in ON or OFF and confirm by pressing of the knob.

- ***Speed limit***

This function permits to set a speed limit that centrifuge cannot overcome even if in the program is set a higher speed. By the knob select this parameter, increase or decrease the value and confirm by pressing of the knob.

- ***Time/Date adjustment***

By the knob select, modify and confirm time and date.

- ***Temperature unit***

By the knob select this parameter, modify in °C or °F and confirm by pressing knob.

- ***Factory reset***

This function permits to reset all the above parameters to the factory conditions.
By the knob select this parameter, modify in ON and confirm by pressing of the knob.

10. Cleaning and maintenance

ATTENTION:

	**All maintenance operations must be carried out by qualified and authorized personnel, equipped with gloves and protective clothing.**
	**It is forbidden to repair or clean moving parts.**
	**In any case, if the equipment does not appear suitable for correct and safe operation, it would be necessary to PUT IT OUT OF SERVICE until the repair or replacement of the damaged parts.**

Proper maintenance and cleaning of the instrument guarantee its good condition. Before proceeding with cleaning, disinfection or maintenance switch off the centrifuge and disconnect it from the mains power. Before proceeding with cleaning or any decontamination, the user must make sure that the method adopted does not damage the instrument. The internal chamber of the instrument is made of stainless steel, so it can be cleaned with any detergent if it is not aggressive and / or corrosive. For refrigerated models, regularly free the internal chamber of ice deposits by melting it, leaving the centrifuge lid open or running a short cycle at about 30 ° C. Remove condensation from the chamber using a soft, absorbent cloth. It is advisable to regularly clean the internal and external surfaces with a normal multipurpose detergent sprayed on a soft damp cloth so as not to use it concentrated. Regularly clean the rotor and accessories outside the centrifuge chamber and separately to ensure thorough cleaning. Clean the rotors and all accessories with a neutral detergent suitable for use with the materials, sprayed on a soft damp cloth. If in doubt, contact the detergent manufacturer. If there are any sample leaks in the rotor or accessories, rinse with distilled water and neutral detergent and dry properly and immediately after cleaning with a dry cloth and place them on a plastic grid with the cavities facing down to allow complete drainage and drying. If necessary, put them in an oven at a temperature not exceeding 50 °C.
Make sure that the grease on the rotor pins (pivot point of the swinging buckets) is removed.
Use a soft brush without metal bristles to remove stubborn residue.
Grease the motor shaft and the rotor pins after cleaning.

Attention:
If the instrument is to be sent to technical assistance, it is necessary to provide for proper cleaning and eventual decontamination of the same from pathogens.
Note: *It is also advisable to put the instrument back in its original packaging to send it to the repair service and in the absence of this to provide to pack it adequately to be able to face transport.*
Any damage caused by incorrect shipment will not be covered by the warranty.

• Greasing of the motor shaft and the rotor pins

To facilitate the insertion of the rotor, it is advisable to regularly grease the crankshaft and in the oscillating rotors it is necessary to regularly grease the pins on which the frames or glasses oscillate.
The frequency of these maintenance depends on the frequency of use, the working temperature, the centrifuged loads, etc., therefore it is advisable to check these parts weekly.
Before proceeding with greasing, it is essential to remove the old grease.

11. Troubleshooting Guide

The following table lists the main problems and possible solutions.

Defect	Solution
Fuse that blows immediately on power up 'ON'	Replace the defective fuse and restart. If the anomaly persists, contact the supplier's technical assistance.
The centrifuge causes mild electric shocks	Check the power socket and make sure that the earth is present. Check the current capacity of the 230 V AC power line that is sufficient and not less than 5 A.
The centrifuge starts and stops immediately, indicating an error message on the display.	Switch the centrifuge off and on again after a period> 30 s. Disassemble and assemble the rotor. If the error persists, contact the supplier's technical service.
- The centrifuge vibrates during start-up or operation. - The "Imbalance rotor" error appears on the display.	Place the centrifuge on a fixed and stable surface. Load the rotor in a balanced and symmetrical way. If the anomaly persists, contact the supplier's technical service.
Burning smell	Stop the centrifuge immediately. Contact the supplier's technical service immediately
Display showing anomalies	Contact the supplier's technical service
The engine does not start	
The display does not light up when turned on	
Set temperature is not reached	Check the temperature setting. Check the gasket and closure of the lid that there is no air escaping.
“Err” appears on the display and the temperature is not displayed	Contact the supplier's technical service
The lid does not open	Wait for the rotor to stop and act on the emergency opening to open the lid. Contact the supplier's technical service.

Note: *If the problem is not listed in this table or in the manual, contact the technical assistance of GIORGIO BORMAC S.r.l.*

12. Spare parts

Contact the after-sales service. Use only original spare parts.

13. Disposal of electronic equipment

This equipment is subject to regulations for electronic devices. Dispose of in accordance with local regulations. The illegal disposal of electrical and electronic equipment is punished with an administrative fine.