

VWR® Centrifuge

INSTRUCTION MANUAL

North America Catalog Number

76019-132

76018-988

Version: 1
Issued: 06-16-2017



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Copyright

No part of this manual may be reproduced or transmitted without prior written permission of us.

Warning

Federal Communications Commission Advisory

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Information

Common safety precautions

Carefully read the following safety precautions for a thorough understanding.

- Follow the instructions and procedures described in this manual to operate this centrifuge safely.
- Carefully read all safety messages in this manual and the safety instructions on the centrifuge.
- Safety messages are labeled as indicated below. They are in combination with signal words of "WARNING" and "CAUTION" with the safety alert symbol  to call your attention to items or operations that could be dangerous to you or other persons using this centrifuge. The definitions of signal words are as follows:



WARNING : Personal Danger

Warning notes indicate any condition or practice, which if not strictly observed, could result in personal injury or possible death.



CAUTION : Possible damage to centrifuge

Caution notes indicate any condition or practice, which if not strictly observed or remedied, could result in damage or destruction of the centrifuge.

NOTE : Notes indicate an area or subject of special merit, emphasizing either the product's capability or common errors in operation or maintenance.

- Do not operate the centrifuge in any manner not described in this User Manual. When in doubt or have any troubles with this centrifuge, ASK FOR HELP.
- The precautions described in this User Manual are carefully developed in an attempt to cover all the possible risks. However, it is also important that you are alert for unexpected incidents. Be careful operating this centrifuge.



WARNING

- This centrifuge is not explosion-proof. Never use explosive or flammable samples.
- Do not install the centrifuge in or near places where inflammable gases are generated or chemicals are stored.
- Do not place dangerous materials within 30cm of the centrifuge.
- Prepare all necessary safety measures before using samples that are toxic, radioactive or contaminated with pathogenic micro-organisms. Use of these is at your own responsibility.
- If the centrifuge, rotor and accessories that have been contaminated by solutions with toxic, radioactive or pathogenic materials, clean it according to the decontamination procedure as specified.
- If you require service at site, please sterilize and decontaminate the centrifuge in advance, and then notify the service center the details of the materials and procedure.
- To avoid electrical shocks, insure hands are dry before handling the power cord or turning on/off the power switch.
- For safety purposes, do not enter within 30cm around this centrifuge when it is in operation.
- While the rotor is rotating, never release the door lock.
- Unauthorized repairs, disassembly, or modifying the centrifuge except by our service center are strictly prohibited.



CAUTION

- This centrifuge must be located on a firm and level table.
- Make sure the centrifuge is horizontal before running.
- Do not move or relocate the centrifuge when it is running.
- If fluid spills in the rotor chamber, please promptly clean and dry with a dry cloth to avoid sample contamination.
- Ensure to remove any objects and fragments of the tubes dropped inside the rotor chamber before running the centrifuge.
- Cautions with rotor
 - (1) Always check for corrosion and damage on the rotor surface before using it. Do not use the rotor if an abnormality is found.
 - (2) Do not set the speed beyond the allowable minimum speed of the rotor kits (rotor and adapters). Make sure to run it below the allowable maximum speed.
 - (3) Do not exceed the allowable imbalance.
 - (4) Use the rotor and tubes within their actual capacities.If any abnormal condition occurs during operation, please stop it immediately and contact our service center. Notify the service center if a warning code is displayed.
- Vibrations are likely to damage the centrifuge, contact our service center if abnormality is observed.

Package Contents

Description	Quantity
Centrifuge	1 each
15mL fixed angle rotor <i>(with model 76019-132)</i>	1 each
Instruction Manual	1 each
Power Cords	
US	1 each
EU	1 each
UK	1 each

Upon Receiving the Instrument

Examine the unit carefully for any damage that may have occurred during transit. Any damage claims must be filed with the carrier. The warranty does not cover in-transit damage.



To ensure safe, reliable operation, always operate the 300V Hi Amperage Power Supply in accordance with the manufacturer's instructions. Always wear protective gloves and safety glasses when working in a laboratory environment.

See Safety Information and Warranty Information in this manual.

Intended Use

This device is a medical product (laboratory centrifuge) within the context of the IVD Directive 98/79/EC.

The centrifuge is used for the centrifugal separation of human blood or urine samples in the rotor in accordance with EN ISO 12772. Operator should be trained before using the centrifuge. Detailed operation, please refer to the **User Manual below**.

Product Specifications

Maximum speed	4500rpm(300-4500rpm), increment: 100rpm
Maximum RCF	2490×g, increment: 100×g
Rotors	76018-982 (plastic): 12x10ml, 8x15ml, 4500rpm (100-2490×g) 76018-976 (aluminum): 6x50ml, 4000rpm (100-1800×g)
Timer	30seconds -99minutes-HOLD, continuous operation
Deceleration curves	2
Driving Motor	Brushless DC motor
Safety devices	Door interlock, Over-speed detector, Automatic internal diagnosis
Rotor Identification	Yes
Power requirements	Single-phase, 100V-240V, 50Hz/60Hz, 3A.
Ambient condition	
-Set-up site	Indoor only
-Altitude	Up to 2000 m above sea level
-Ambient temperature	2°C ~ 40°C
-Humidity	80%
-Excess-voltage category	II
-Pollution degree	2
Device protection class	I
EMC	
-Emitted interference,	EN/IEC 61326-1 FCC Class A
Interference immunity	Class A
Dimensions (mm)	(L) 11 × (W) 14.3 × (H) 10.47 in.
Weight	13.2 lbs
Additional features	Speed/RCF switch, Pulse operation, Processing display, Voice reminder

Overview

Required Operational Conditions

Basic operational conditions

- (1) Power: 100V-240V, 50Hz/60Hz, 3A.
- (2) Ambient temperature: 2°C~40°C.
- (3) Relative humidity: ≤80%.
- (4) No vibration and airflow around.
- (5) No electric dust, explosive and corrosive gases around.

Transport and storage conditions

- (1) Storage temperature: -40°C~55°C.
- (2) Relative humidity: ≤93%.

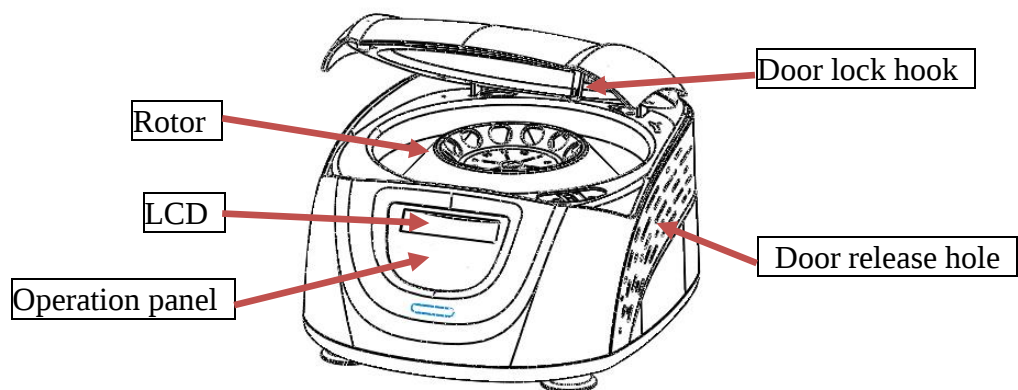


Figure 6-1 Front view of the centrifuge

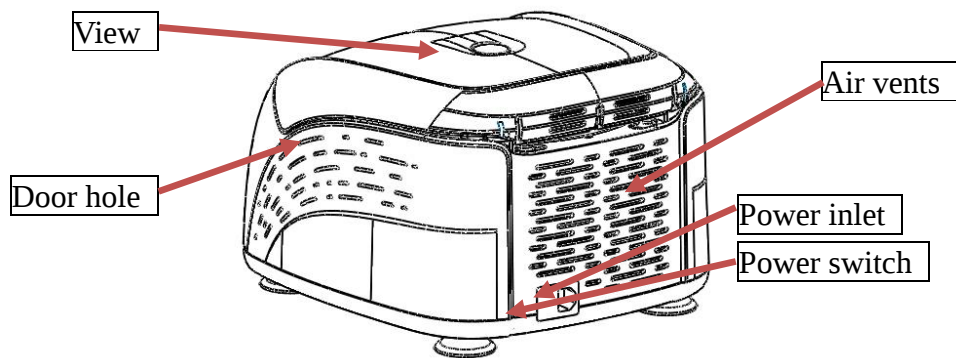


Figure 6-2 Rear view of the centrifuge

Operation Panel

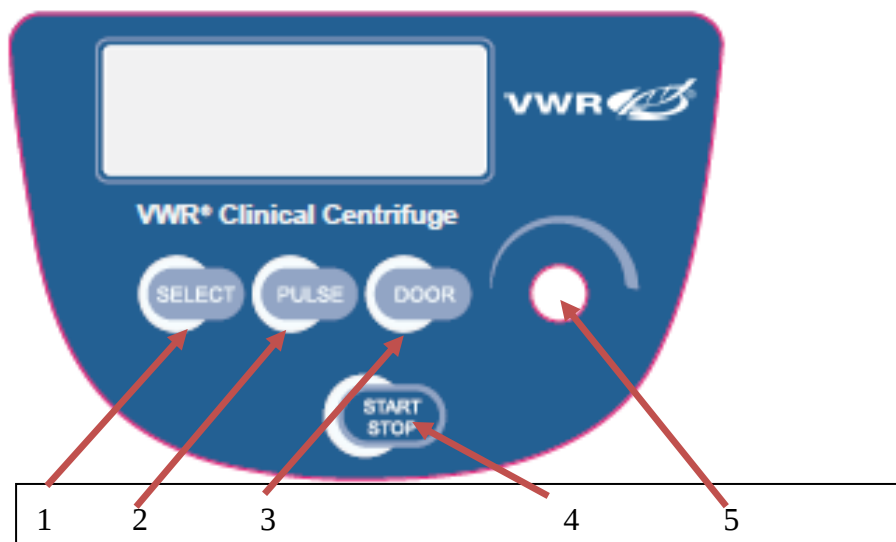


Figure 7-1 Operation panel

Item	Symbol	Name	Function
1		Select button	Press the button to choose the program which you want to modify.
2		Pulse button	The speed can be accelerated and held at the speed when pressing Pulse on.
3		Open/ lock button	Press the button to open the door. The button is not available when the centrifuge is running.
4		Start/ Stop button	Press the button to start running. The centrifuge will brake to stop running if pressed during centrifugation.
5		Parameter button	Clockwise rotate to increase program values. Rotate anti-clockwise to decrease parameter values.

			Push the KEY and hold on for more than 7 seconds, set the deceleration curve, see “Deceleration curve setting” in page 14
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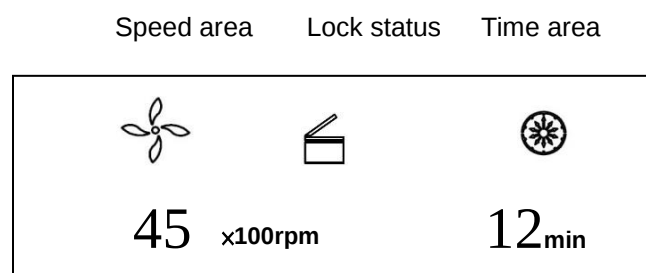


Figure 7-2 The main interface

Main interface is as figure 7-2. The speed is set to be 4500rpm, the door lock is released and the running time is 12 minutes. When speed symbol  is rotating, this indicates the centrifuge is running. If the rotation is faster, the speed is higher. Time symbol  displays the ratio of working to time setting. The total time setting is divided into 10 sections.

Rotor Preparation

1 Prepare the samples

2 Place the samples into tubes

CAUTION

- Do not overload samples into the centrifuge as it may cause leaking.

- Do not exceed the actual capacity allowed in the user manual.

3 Keep the tubes balanced

- Although the centrifuge can accept sample balancing by eye, it is recommend to keep this centrifuge in a well-balanced condition to extend its life expectancy.
- Never intentionally run the centrifuge under an unbalanced condition even though the allowable imbalance is not exceeded.

4 Inspect the rotor

Check the rotor for corrosion or scratches before using.

CAUTION

- If any abnormality such as corrosion or scratches are found, stop using the rotor and contact our service center.

- Only VWR's rotors must be used with the unit.

5 Symmetrically load centrifuge tubes into rotor

CAUTION

- Make sure the rotor lid is securely fixed on the rotor, as well as the rotor and shaft are tightened. Otherwise, the rotor may lift off while rotating and cause damage to the centrifuge and rotor.

Operation

CAUTION

- Do not push or lean against the centrifuge while it is running.
- Do not run the centrifuge when fragments or sample solutions are left in the centrifuge chamber. Always keep the centrifugal chamber clean.
- If the centrifuge makes strange noise during operation, stop it immediately and contact our service center. Notify them of the warning code if displayed.

1 Normal operation

Turn on the power switch, centrifuge will display the running interface last time after passing the self-diagnostic checks, see figure 9-1 below:

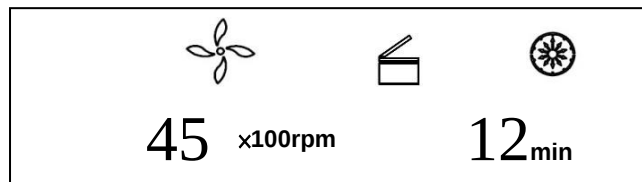


Figure 9-1 Last running interface

- Speed: 4500rpm. Running time: 12 minutes.
- The door lock is released.

1) Set the operation programs

Press the  button to select required program. The parameter can be modified when the program is flashing. Rotate the program button clockwise  to increase parameter value. Rotate the program button clockwise  to decrease parameter value. Rotate the program button  faster, and the parameter value will increase faster. The minimum speed increment is 100 rpm, the minimum time increment is 1 second.

(1) Set the speed

- Press the select button  until the speed rpm is displayed.
- When the speed button is selected, the speed symbol will flash the speed value.
- The minimum speed value you can set 300rpm, the minimum increment is 100 rpm.
- Rotate program button clockwise  to increase speed value. Rotate the program button counter-clockwise  to decrease speed value.
- You can increase the speed value by rotating program button  quickly.
- There is a circulating function to increase/decrease the speed values. Rotate the program button clockwise  to change settings from small → large → maximum → minimum. Rotate the program button anti-clockwise  to change settings from large → small → minimum → maximum.

(2) Set the time

- Press select button , time value flashes in the time setting mode.
- Rotate the program button  to set running time from 30 seconds to 99 minutes.
- When the time displays HD, this indicates a continuous running mode.

2) Start the operation

(1) Press button to start running

- The door must be locked before rotor starts spinning.
- The timer will start once the rotor starts spinning, the screen displays the remaining run time.

(2) View and modify the operation programs

- Operation programs can be modified after the centrifuge reaches the set speed.
- Pressing the select button , returns the display to the program interface and displays setting programs. Press the select button  to the desired program. When flashing, rotate parameter button  to modify values. Release the button after 5 seconds, and the centrifuge will return to normal operation mode and run according to the new value.
- If the set time value has been modified, the operation time is not affected and will continue.

(3) Warning display

- If an error occurs during the operation, the centrifuge will brake to stop automatically, and display the error code on the time/display area. The error code can be checked in the

table 11-1, and corrective actions can be applied accordingly.

3) Deceleration curve setting

- Two deceleration curves can be set, a fast stop and slow stop.
 - Brake step 1
- Press the button  and hold for more than 7 seconds, F will display on the LCD , then press the button  again. The centrifuge will enter the fast stop mode.
 - Brake step 2
- Press the button  and hold for more than 7 seconds, L will display on the LCD , then press the button  again. The centrifuge will enter the slow stop mode.

4) End the operation

- (1) The centrifuge will brake when it reaches the set time or  button is pressed.
- When the rotor stops rotating, the centrifuge will start beeping to alert the operation has finished.
- (2) Open the lid
 - The door can be released automatically when the operation has stopped.
 - With the door closed, you are able to press the  button to open it.
 - After ending the operation, the program will store the setting parameters of this operation, and will recall these parameters when restarting the program.
- (3) Open the lid and take out the rotor and samples.

2 RCF operation

- (1) Turn on the power switch
- (2) Set a RCF (Relative Centrifugal Force) value

CAUTION

- Do not exceed the allowable maximum RCF value of the rotor and adapters.

- Press the select button  and choose speed unit $\times g$, the speed symbol will flash into RCF value input status.
- If no button is pressed after the speed value has flashed after 5 seconds, the input mode will be shut down.
- Rotate program button  to input a RCF value, RCF increment is $100 \times g$.

- (3) Set operating conditions
- For other operation, please refer to the section 8.1.

3 Pulse operation

- This function is used to remove the residual samples adhered to the interior of the tubes or for quick spins.

Note : The button works only while the rotor stopped and the door is locked.

- (1) Turn on the power switch install the rotor onto the shaft, tighten the rotor lid and make sure it is secured, then close the lid.
- (2) The centrifuge goes into preparation mode and displays last running values.
- (3) Press the pulse button  knob and hold, the centrifuge will speed up to the setting speed. While releasing the  knob during acceleration, the centrifuge will start to decelerate and stop.

Maintenance

Cleaning

CAUTION

- Not following the recommended instructions for cleaning or disinfecting may damage the centrifuge.

(1) Centrifuge

- If the centrifuge is exposed to ultraviolet rays for a long time, the color of the door may be changed or the label may be peel off. After using, cover the centrifuge with a piece of cloth to protect it from direct exposure.
- If the centrifuge needs cleaning, clean it with a cloth or sponge moistened with a neutral detergent solution.
- Sterilize the centrifuge by wiping with a cloth moistened with 70% ethanol solution.

(2) Rotor chamber

⚠ CAUTION

- Do not directly pour water, neutral detergent or disinfectant solution into the rotor chamber, otherwise fluids may leak into the drive units and cause corrosion or deterioration to the bearings.

If the rotor needs cleaning, clean with cloth or sponge moistened with a neutral detergent solution.

- Sterilize the centrifuge by wiping with a cloth moistened with 70% ethanol solution.

(3) Drive shaft

- We recommend regular maintenance of the drive shaft. You can wipe the drive shaft with a soft cloth and then apply a thin coat of silicon grease.

(4) Lid

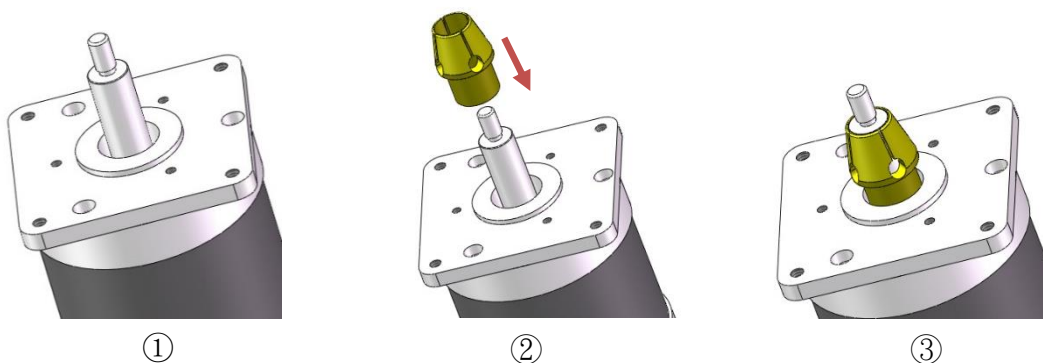
- Clean and sterilize the lid using the same method as section (1) above.

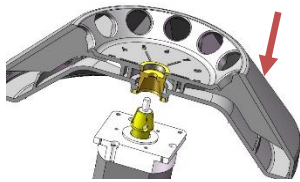
(5) Rotor

- To prevent corrosion, remove the rotor from rotor chamber. If not in use for a long time, then detach the rotor lid and turn upside down to dry the tube holes and keep clean.
- If sample accidentally spills into the rotor, rinse the rotor with water. Apply a thin coat of silicon grease to the rotor when it is completely dry.
- The rotor should be checked every 3 months to ensure the tube and rotor holes are kept clean.

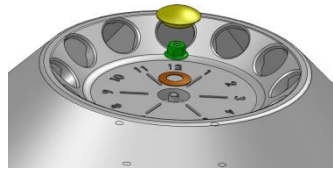
Rotor Installation

(1) Installation



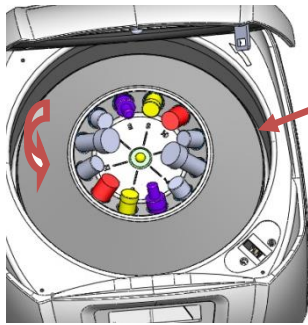


④



⑤

(2) Adjustment



NOTE!

Before locking the rotor, rotate it, and observe carefully if there is obvious vibration, if so, please remove the rotor, turn slightly and install again until the rotor rotates smoothly, then, lock it firmly.

How to open the lid

1) In the case of power on

⚠ CAUTION

- The lid just can be opened while the power is on and rotor stops rotating.

(1) Turn on the power switch, release the lid automatically.

(2) The lid will release automatically once the operation is finished.

(3) It is possible to release the lid by pressing the door button  once the rotor stops.

2) In the case of power outage

The lid cannot be opened automatically if there is a power outage. It can be opened manually as follows.

(1) Ensure that the rotor has stopped rotating.

- Listen carefully to ensure no rotating sound can be heard.

(2) Insert a screw driver into a hole to open door.

- Holes are located on the left and right sides of the unit.

Insert a screw driver into the hole and push forward to release the lid.

Instructions for the rotor and tubes

⚠ CAUTION

- Read the instructions thoroughly, to properly load and use rotor.
- Do not exceed the allowable maximum speed of rotor 、tube and adapters etc. Ensure the allowable maximum speed of adapters is lower than the rotor's maximum speed.

1 Rotor instructions:

1) Rotor structure

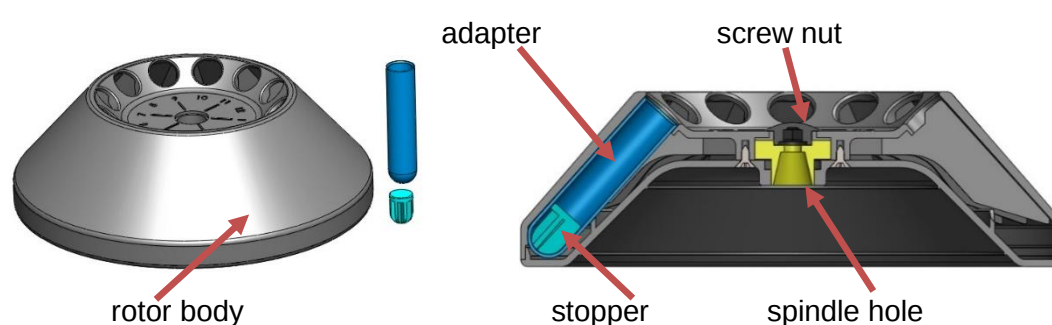


Figure 12-1 Rotor structure

2) Available rotors and adapters

Rotor type	Tubes	Tubes Per Rotor	Dimension (Φ×L mm)	Adapters	Maximum speed (rpm)	Radius (cm)	Maximum RCF (×g)
76018-982	15ml conical	8	17×120	Null	4500	11	2490
	1.5-5ml vacu	12	13×82	76018-984 76018-986	4500	9.8	2218
	4-7 ml vacu	12	13×106	76018-984	4500	11	2490
			16×75	76018-984 76018-986		9.8	2218
	8.5-10 ml vacu	12	16×107	76018-984	4500	11	2490
	2.7-3 (EU) ml collection tube	12	11×66	76018-984 76018-986	4500	9.8	2218
	7.5-8.2 (EU) ml	12	15×92	76018-984	4500	11	2490

	collection tube						
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Table 12-1 Rotors and adapters

3) 6 x 50ml Rotor (76018-976)

Instruction manual

Fixed angle rotor for **76019-132** Centrifuge



76018-976



rotor body



6-50ml tube



76018-978 adapter

Safety Reminder

- Centrifuge rotors rotating at high speed have considerable potential for damage to personal properties if used improperly. For safe and proper use of this rotor, carefully read the centrifuge instruction manual and this rotor instruction manual before use and observe the instructions.

RCF Calculation

- To find the RCF: Substitute the rotation radius (Rmax, Rmin, etc.) and the speed in the following equation

$$\text{RCF (}\times\text{g)} = 1.118 \times 10^{-5} \times \text{Rotation radius (cm)} \times (\text{Speed (rpm)})^2$$

Applicable adapters, tubes and bottles

- Tubes are not included in this rotor. Please purchase applicable ones on the market.
- When using tubes on the market, perform operation under the allowable speed or the allowable RCF specified by the manufacturer. Otherwise the tubes may be broken during operation.
- Clean and sterilize tubes on the market according to the instructions of the manufacturer.

Rotor type	Tube	Tubes Per Rotor	Dimension (Φ×L mm)	Adapter	Maximum speed	Radius (cm)	Maximum G force
	50ml Conical	6	30×115	Null	4000	10	1789
	15ml	6	17×120	76018-978	4000	10	1789

76018 -976	Conical						
	1.5-5ml vacu	6	13×82	76018-978 76018-984 76018-986	4000	8.5	1521
	4-7ml vacu	6	13×106	76018-978 76018-984	4000	9.5	1700
			16×75	76018-978 76018-984 76018-986		8.5	1521
	8.5-10 ml vacu	6	16×107	76018-978 76018-984	4000	9.5	1700
	2.7-3 (EU) ml collection tube	6	11×66	76018-978 76018-984 76018-986	4000	8.5	1521
	7.5-8.2 (EU) ml collection tube	6	15×92	76018-978	4000	9.5	1700

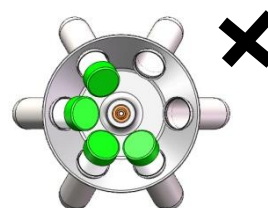
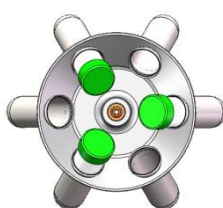
Operating Caution

⚠ Only the combinations of rotor/buckets/adapters which are recommended by our company may be used.

⚠ Please check whether all adapters have been installed correctly.

⚠ Rotor must be symmetrically loaded.

⚠ All samples should be balanced by eye.



Fixed angle rotor with aluminum body and stainless adapters

Major application: Clinical application, pelleting of large particles, cells and cell debris.

Max speed: 4,000 rpm Max RCF: 1,800 x g

4) Notice

The centrifuge rotor can separate samples with a density lower than 2.0g/ml. If the sample density is over 2.0g/ml, please calculate allowable speed depending on the following formula.

$$\text{allow speed}(rpm) = \text{max speed} \times \sqrt{\frac{2.0(g/ml)}{\text{sample density}(g/ml)}}$$

5) Autoclaving

76018-982 rotor is made of plastic, cannot be high-pressure sterilization and UV irradiation, only ordinary sterilization can be used.

2 Tubes

1) Cleaning and sterilizing tubes

O : Applicable X : Inapplicable

ConditionsMaterials			PA	PC	PP
Cleaning	Cleaning fluids	Acidic (pH5 or lower)	X	X	X
		Acidic (higher than pH5)	O	O	O
		Alkaline (higher than pH9)	O	X	O
		Alkaline (pH9 or lower)	O	O	O
		Neutral (pH7)	O	O	O
		Warm water(up to 70°C)	O	O	O
	Ultrasonic cleaning	Neutral detergent (pH7)	O	O	O
Sterilization	Autoclaving	115°C (0.7kg/cm ²) 30minutes	O	O	O
		121°C (1.0kg/cm ²) 20 minutes	X	O	O
		126°C (1.4kg/cm ²) 15 minutes	X	X	X
	Boiling	15 to 30 minutes	O	O	O
	Ultraviolet sterilization	200-300nm	X	X	X
	Gas sterilization	Ethylene oxide	O	X	O
		Formaldehyde	O	O	O

PA: PolyallomerPC: PolycarbonatePP: Polypropylene

Table 12-2 Cleaning and sterilizing conditions for tubes

2) Cleaning PC tubes

PC material is low in chemical resistance against alkaline solutions. Avoid using neutral detergents with pH higher than 9. Note that pH of some neutral detergents are still higher than 9 even if diluted according to the manufacturer's instructions. Use detergent with its pH between 7 and 9.

3) Autoclaving PA 、PC and PP tubes

PA begins softening at about 120°C, PC and PP at about 130°C. Autoclave PA tubes at 115°C (0.7kg/cm²) for 30 minutes, PC and PP tubes at 121°C (0.1kg/cm²) for 20 minutes. If a certain temperature is exceeded, the tubes may be deformed.

When use a sterilizing chamber, please operate as follows:

(1) Place tubes in vertical position, mouths upward. If tubes are placed sideways, they may deform into an oval shape due to gravity.

(2) Remove locking nut and lid to prevent from deformation or rupture.

(3) Wait until the sterilizing chamber cools down to the room temperature before removing tubes.

4) Conditions and life expectancy of tubes

The life expectancy of plastic tubes depends on the characteristics of samples, speed of the rotor used, temperature applied and so on. When the plastic tubes are used for ordinary aqueous samples (pH between 5.0 and 9.0), their life expectancies are defined as follows.

Be operated at the maximum speed:

High quality tubes (PA 、 PC 、 PP): 30-50 operations

Ordinary tubes(PA 、 PC 、 PP): around 10 operations (Using in low speed can extend the tube life) .

Life expectancy of tubes also depends on the pretreatment conditions such as cleaning and sterilization, lifetime can be cut down.

Notice: Do not use damaged or cracked tubes.

Calculate RCF

An RCF can be determined with the following calculation formula.

$$RCF=1.118 \times r \times n^2 \times 10^{-5}$$

r—rotating radius, unit: cm; n—rotating speed, unit: rpm

Returning and Disposal

14.1 Returning Devices



Before returning the device, a transport securing device has to be installed.

When returning the centrifuge and accessories, proper decontamination must be performed prior to shipping.

14.2 Disposal

Before disposal, proper decontamination must be performed. When disposing of the centrifuge, follow local guidelines.

Pursuant to guideline 2002/96/EC (WEEE), all devices supplied after August 13,2005 may not be disposed as part of domestic waste. The device belongs to group 8 (medical devices) and is categorized in the business-to-business field.

The icon of the crossed-out trash can shows that the device may not be disposed as part of

domestic waste.

The waste disposal guidelines of the individual EC countries might vary. If necessary, contact your supplier.

Ordering information

Cat. No.	Model	Descriptions
76019-132	Centrifuge	Centrifuge, with 8 x 15mL rotor, US, EU, UK plug, 100V-240V, 50Hz/60Hz
Accessories		
76018-982	8 x 15mL	Rotor, 4500rpm, 8 x 15mL fixed angle
76018-984	Adapter	Rotor adapter, used with 8 x 15mL rotor, 12 pcs/pk
76018-986	Adapter stopper	Rotor adapter stopper, used with rotor adapter, 12pcs/pk
76018-976	6 x 50mL	Rotor, 4,000rpm, 6 x 50mL fixed angle

Technical Service

In order to ensure to operate centrifuge safely and efficiently, it is necessary to perform routine maintenance. If centrifuge has problems, do not attempt to repair the centrifuge.

Contact your local VWR sales or service center.

Web Resources

Visit the VWR's website at www.vwr.com for:

- Complete technical service contact information.
- Access to VWR's Online Catalog, and information about accessories and related products.
- Additional product information and special offers.

Contact Us For information or technical assistance contact your local VWR representative or visit. www.vwr.com.

Troubleshooting

Encountering Problems

1. Contact VWR's Technical Service Department. Their contact information in your area can be found at www.vwr.com.
2. If the unit must be shipped back for repair, contact your distributor for a Return

Authorization Number and shipping instructions. The unit will be repaired as quickly as possible and returned to you.

Warranty

VWR International warrants that this product will be free from defects in material and workmanship for a period of one (1) year from date of purchase. If a defect is present, VWR will, at its option, repair, replace, or refund the purchase price of this product at no charge to you, provided it is returned during the warranty period. This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication, or from ordinary wear and tear.

For your protection, items being returned must be insured against possible damage or loss. This warranty shall be limited to the replacement of defective products. IT IS EXPRESSLY AGREED THAT THIS WARRANTY WILL BE IN LIEU OF ALL WARRANTIES OF FITNESS AND IN LIEU OF THE WARRANTY OF MERCHANTABILITY.

Compliance with local laws and regulations

The customer is responsible for applying for and obtaining the necessary regulatory approvals or other authorisations necessary to run or use the Product in its local environment. VWR will not be held liable for any related omission or for not obtaining the required approval or authorisation, unless any refusal is due to a defect of the product.

Equipment disposal



This equipment is marked with the crossed out wheeled bin symbol to indicate that this

equipment must not be disposed of with unsorted waste.

Instead it's your responsibility to correctly dispose of your equipment at lifecycle -end by handling it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.

For more information about where you can drop off your waste of equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Thank you