20260/R.EN rev.1

USER MANUAL

Laboratory centrifuge **MPW-260**

Refrigerated laboratory centrifuge **MPW-260R**

Read before use!

Serial number of the centrifuge: ……

For centrifuges with serial no (SN): MPW-260: from 10260033620
MPW-260R: from 10260R126720

CE IVD

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You can find the current version of the user manual on our website under:
mpw.pl/en – DOWNLOAD section (one can choose demanded language version of website).

Warning signs:

	WARNING! Warning of potential injury or health risk.
	DANGER! Risk of electric shock with potential for severe injury or death as a consequence.
	DANGER! Biohazard with potential for risk to health or death as a consequence.
	DANGER! Risk of explosion with potential for severe injury or death as a consequence.

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1 Application

The MPW-260/R centrifuges (MPW-260 – ventilated, MPW-260R – with cooling) belong to the family MPW-260/R/RH of the table top laboratory centrifuges for in vitro diagnostic (IVD). Devices are used for separation samples taken from people's, animal's and plant's components of different densities, under the influence of the centrifugal force, to provide information about their biological state.

Its construction ensures easy operation, safe work and wide range of applications at laboratories engaged in routine medical analyses, biochemical research works etc.

In the centrifuge, it is prohibited to centrifuge caustic, inflammable and explosive preparations.

2 Technical specification

manufacturer	"MPW MED. INSTRUMENTS" SPÓŁDZIELNIA PRACY, Boremlowska 46 Street, 04-347 Warsaw									
type	**MPW - 260**					**MPW - 260R**				
mains voltage (L1+N+PE)	230V	100V	110V	120V	127V	230V		100V	110V	120V	127V
	±10%	±5%				±10%		±5%			
mains frequency,	50/60Hz	50Hz/60Hz				50Hz	60Hz	60Hz			
current protection [A]	T 4A	T 6,3A				T 10A					
cooling medium	-					R452A (CFC/HCFC free)					
	MPW - 260					**MPW - 260R**				
capacity (max.)	500 ml									
speed – RPM	90 ÷ 18000 rpm (step 1 rpm)									
force – RCF	24270 x g (step 1 x g)									
kinetic energy (max.)	8800 Nm									
running time	00:00:01 ÷ 99:59:59 – [hours, min., sec] (step 1s)									
time counting	since start button is pressed / since preselected speed is reached									
short-time operation mode – SHORT	yes									
continuous operation mode – HOLD	yes									
user programs	100									
adjustable temperature	-					-20 ÷ 40°C* (step 1°C)				
initial cooling/heating PROG 99 (90 ÷ 2500 RPM)	no/ no					yes / no				
guaranteed temperature with max. rotor speed	-					≤4°C				
cooling/heating without centrifuging	no					yes/ no				
cooling/heating with centrifuging	no					yes /no				
acceleration (ACEL)	10 linear curves									
deceleration (DECEL)	10 linear curves									
programmable non-linear curves:										
acceleration	10									
deceleration	10									
USB communication	yes									
Electromagnetic compatibility	according to PN-EN 61326-1:2006									
ambient conditions	PN-EN 61010-1 (p.1.4.1)									
set-up site	indoors only									
ambient temperature	2° ÷ 40°C									
humidity (maximum relative humidity)	< 80%									
installation category	II EN 61010-1									
pollution degree	2 EN 61010-1									
safety area	300 mm									
degree of protection	IP20									
height (H)	315 mm					315 mm				
width (W)	365 mm					365 mm				
depth (D)	495 mm					660 mm				
height with open cover (H_{oc})	620 mm					620 mm				
noise level	<60 dB									
power consumption	220W					600W				
weight 230V	22,5 kg					42,2 kg				
weight 120V	24,6 kg					44,3 kg				

*time and possibility of obtaining a set temperature is dependent on multiple factors, including: rotor type, established RPM, ambient temperature; accuracy ±1°C, appropriate for place of temperature sensor

Menu languages: POLISH, ENGLISH, GERMAN, SPANISH, ITALIAN, PORTUGUESE, RUSSIAN, SWEDISH, FRENCH, CZECH.

3 Installation

Open the package. Remove the box containing the accessories. Take out centrifuge from the container. Keep the box and packing materials in case of service shipping.

3.1 *Content of the package*

name	pcs.	cat no.
centrifuge MPW-260/R	1	10260/2-56 10260/1-56 10260R/2-5 10260R/2-6 10260R/1-6 (type and supply version dependent)
complete clamp	1	17142
spanner for the rotor	1	17099T
spanner for emergency opening of the cover	1	18640
power cord – 230V / 120V	1	17866/17867
fuse WTA T 4A – 230V / WTA T 6,3A – 120V **(for MPW-260)**	2	17861/17862
fuse WTA T 10A – 230V / 120V **(for MPW-260R)**	2	17863
vaseline 20ml	1	17201
USB A-A cable	1	16655
user manual	1	See page 1.

3.2 *Location*

- Ensure safe location.
- The centrifuge shall not be located near source of heat and shall not be subjected to direct sunlight.
- Centrifuge should be flat-levelled. Effect of levelling shall be ensure by stable and flat-levelled table top for the centrifuge.
- Centrifuge should be set horizontally on a rigid base.
- It is necessary to ensure a ventilation zone of the minimum 30cm round the centrifuge from every direction. Do not veil ventilation holes !
- Table for centrifuge should posses safety zone of the minimum 30cm round the centrifuge from every direction (safety needs in case of malfunction according to EN 61010-020).
- Table for centrifuge should be free of containtments before locating of centrifuge.
- Passed parameters of the centrifuge are referring to the above named temperatures (see 2.Technical specification).
- At the change of the place from cold to warm one, condensation of water will occur inside the centrifuge. It is important then that sufficient time be provided for drying the centrifuge prior to starting the centrifuge again (min. 4 hours).

	▪ Do not position the centrifuge so that it is difficult to operate the power switch. ▪ Supply voltage given on the name plate has to be consistent with local supply voltage. MPW MED INSTRUMENTS laboratory centrifuges are 1st safety class devices and they are provided with the three-core cable with the plug resistant to dynamic loadings. Mains socket have to be provided with the safety pin (protective earth (PE)). ▪ It is recommended to install emergency cut-out that shall be located far from the centrifuge, near the exit or beyond the room.
	▪ **Before switching on, check whether the centrifuge is connected to power supply correctly. It is obligatory to use only power cord recommended by manufacturer (17866 for 230V, 17867 for 120V)**

3.3 *Current protection*

	The centrifuge is equipped with thermal current protection. Fuse is situated in the plug-in socket unit at back wall of the centrifuge.

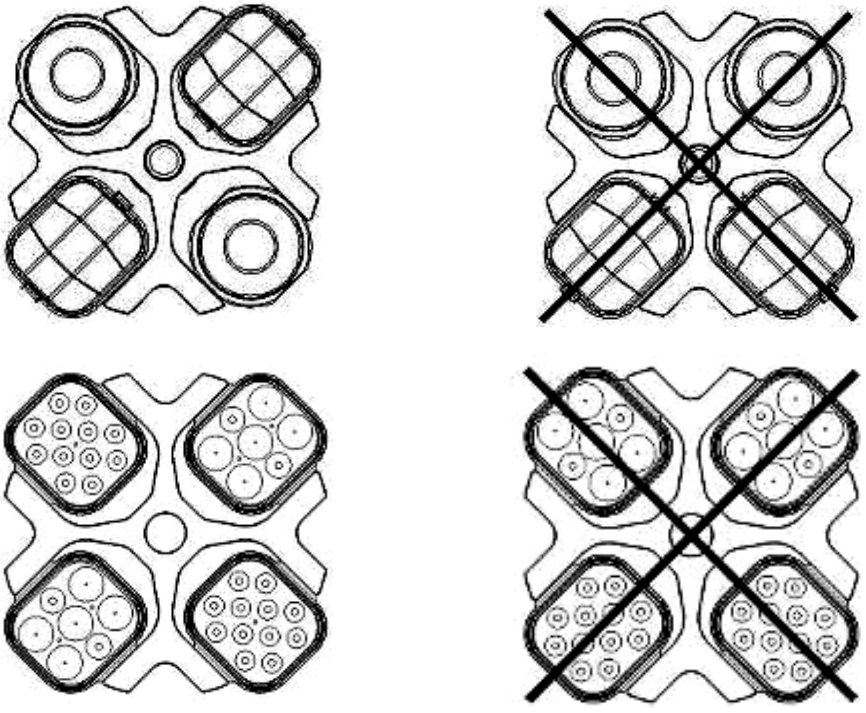
4 Safety notes

4.1 *Operating personnel*

	▪ Laboratory centrifuge can be operated by laboratory personnel after getting acquainted with user manual. ▪ **This User Manual is part of the device.** ▪ **User manual shall be always held near the centrifuge.** ▪ The centrifuge can not be misused. ▪ **If the centrifuge is used in a manner not specified by the manufacturer, the protection provided by the device may be impaired.**

4.2 *Loading the rotor*

- Fix the rotor on the motor axis firmly.
- Avoid unbalance.
- Load opposite buckets with the same accessories.
- Centrifugation of the test tubes of different sizes:
  - There is a possibility to centrifuge test tubes of different sizes; however, it is absolutely necessary in such cases that opposite buckets and round carriers be the same.
  - Mass of different containers with test tubes spun at the same time has to be comparable. Swing-out rotors must be equipped with all (two or four –dependent to type of rotor) buckets.
- Lubricate the swing-out rotor journal pins.



CORRECT **WRONG**

CORRECT **WRONG**

It is necessary to insert test tubes symmetrically on the opposite sides.

	FILLING TUBES ▪ Fill test tubes outside the centrifuge. ▪ Please pay special attention to the quality and proper thickness of the glass test tubes walls. Those shall be test tubes for centrifuges. ▪ Fill the rotor equipment to the same weight to prevent the centrifuge from being unbalanced.

4.3 *Safety hints*

	ROTORS MAINTENANCE ▪ Lubricate the swing-out rotor journal pins. ▪ Use only accessories in good condition. ▪ Protect equipment against corrosion using accurate preventive maintenance.

	HS ACCESSORIES MAINTENANCE ▪ Make sure that rubber O-rings are lightly coated with silicone grease. Use high vacuum grease, e.g. type „C" by LUBRINA.

	HAZARDOUS MATERIALS ▪ MPW accessorises are not biotight. For centrifuging infectious materials it is necessary to use hermetically closed tubes meeting demands of biotightness, in order to prevent germs migration into the centrifuge and beyond it. ▪ It is not allowed to subject to centrifugation toxic or infectious materials with damaged leak proof seals of the rotor or test-tube. Proper disinfection procedures have to be carried out when dangerous substances contaminated the centrifuge or its accessories.

	EXPLOSIVE AND COMBUSTIBLE MATERIALS ▪ It is not allowed to centrifuge explosive and inflammable materials. ▪ It is not allowed to centrifuge substances prone to reacting in result of supplying high energy during centrifugation. The centrifuge can not be operated in explosion-endangered areas. ▪ It is not allowed to centrifuge materials capable of generating inflammable or explosive mixtures when subjected to air.

4.4 *Maintenance conditions*

	START-UP ▪ Prior to switching the centrifuge on, one shall read carefully all sections of this user manual in order to ensure smooth operation and avoid damages of this device or its accessories. ▪ In order to protect the centrifuge against unbalance, fill in the test tubes up to the same weight.
	TRANSPORTATION ▪ Centrifuge must not be transported with the rotor mounted on the shaft..
	GENERAL HINTS ▪ One must use original rotors, tubes and spare parts only. ▪ In case of faulty operation of the centrifuge one shall ask for assistance of service of MPW MED. INSTRUMENTS company or its authorized representatives. ▪ It is not allowed to switch the centrifuge on if it is not installed properly or rotor is not fitted correctly.
	CENTRIFUGED SUBSTANCES ▪ It isn't allowed to exceed load limit set by the manufacturer. Rotors are intended for fluids of average homogeneous density equal to **1,2 g/cm^3** or smaller when centrifugation is carried out at maximum speed. When fluids of higher density shall be used, then it is necessary to change density of centrifuges sample in **PARAM/DENSITY** field.

The centrifuge must be inspected by an authorized service provider at least once a year (after the warranty period). For example, the corrosive environment may be the reason for more frequent control. The tests shall be completed by issuing a validation protocol specifying checks on the technical condition of the laboratory centrifuge. It is recommended that you set up a document that records any repairs and inspections. Both of these documents should be stored at the place of use of the centrifuge.

<table>
<tr><td rowspan="2"> </td><td>INSPECTION PROCEDURES CARRIED OUT BY THE OPERATOR

Operator has to pay special attention to the fact that the centrifuge parts of key importance due to safety reasons are not damaged. This remark is specifically important as for:

▪ Centrifuge accessories and especially structural changes, corrosion, preliminary cracks, abrasion of metal parts.

▪ Screw connections.

▪ Inspection of seals of the buckets if such are used. Special attention must be paid to all of the rubber (seals) parts. In the case of damage or visible structural changes defective parts must be replaced for new immediately (Set of seals Cat. No. 18591 available from the manufacturer).

▪ Control of execution of the guarantee yearly technical inspection of the centrifuge (after lapse of guarantee).</td></tr>
<tr><td>▪ Only the manufacturer-specified buckets, included in the equipment list, as well as centrifuge tubes, which diameter, length and durability are suitable, should be used for spinning in this centrifuge. The use of equipment made by other manufacturers should be consulted with the manufacturer of the centrifuge.

▪ It is not allowed to lift or shift the centrifuge during operation, and rest on it.

▪ It is nor allowed to stay in the safety zone within 30 cm distance around the centrifuge neither leave within this zone some things, e.g. glass vessels.

▪ It is not allowed to put any objects on the centrifuge.</td></tr>
</table>

<table>
<tr><td> </td><td>COVER OPENING</td></tr>
<tr><td></td><td>▪ It is not allowed to open the cover manually in emergency procedure when rotor is still turning.</td></tr>
</table>

	ROTORS
	▪ It is not allowed to use the rotors and round carriers with signs of corrosion or other mechanical defects. ▪ It is not allowed to centrifuge highly corrosive substances which may cause material impairment and lower mechanical properties of rotor and round carriers. ▪ It is not allowed to use rotors and accessories not admitted by the manufacturer. Let to use commercial glass and plastic test tubes, which are destined to centrifuging in this laboratory centrifuge. One should absolutely not use poor quality elements. Cracking of glass vessels and test tubes could result in dangerous vibration of the centrifuge. ▪ It is not allowed to carry out centrifugation with the rotor caps taken off or not driven tight.

4.5 *Unbalance*

The centrifuge is provided with the rotor unbalance sensor and when it will be activated, centrifugation process will be stopped through fast braking and at the same time an error message will be displayed. Cancellation of this error is possible only through pressing **BACK, STOP, COVER, SET** or ▲▼◄► key after stopping of the rotor.

One must check if rotor was correctly loaded, close the cover and once more start the program. In order to protect the rotor against improper work, it has to be provided with identically filled buckets, carriers, test-tubes etc. for getting the best balance possible (see section “4.2. Loading the rotor”).

Then close the cover and restart the program.

	Unbalance causes noise and vibrations during operation, and adversely affects power transmission system (motor, shock absorbers). The better balance, the smoother will be the centrifuge operation and therefore longer life of usage of the driveline. Moreover, the ideal separation level is then obtained, as already separated constituents would not be moved up by vibration.

Emergency stop

In any moment of centrifuging it is possible interrupt the process and fast stop the rotor. Single-time pressing of the **STOP** key will make centrifuging stop with acceleration characteristics set in the program (after pressing the **SET** or **STOP** key, the device returns to the main screen). Pressing and holding it up to 1s will make the centrifuging stop with the most strict characteristic.

4.6 *Residual risk*

The centrifuge is built according to the state-of-the-art and the recognized safety regulations. Nevertheless, still remain some level of residual risk due to improper operation and malfunctions. It is possible to decrease residual risk by strictly applying user manual conditions and correcting malfunction which could threaten safety, immediately.

5 Operating

5.1 *Centrifuge overview*

New generation of MPW MED. INSTRUMENTS laboratory centrifuges is provided with state-of-the-art microprocessor control systems, very durable and quiet asynchronous brushless motors and accessories consistent with requirements of the present-day user.

5.2 *Centrifuge description*

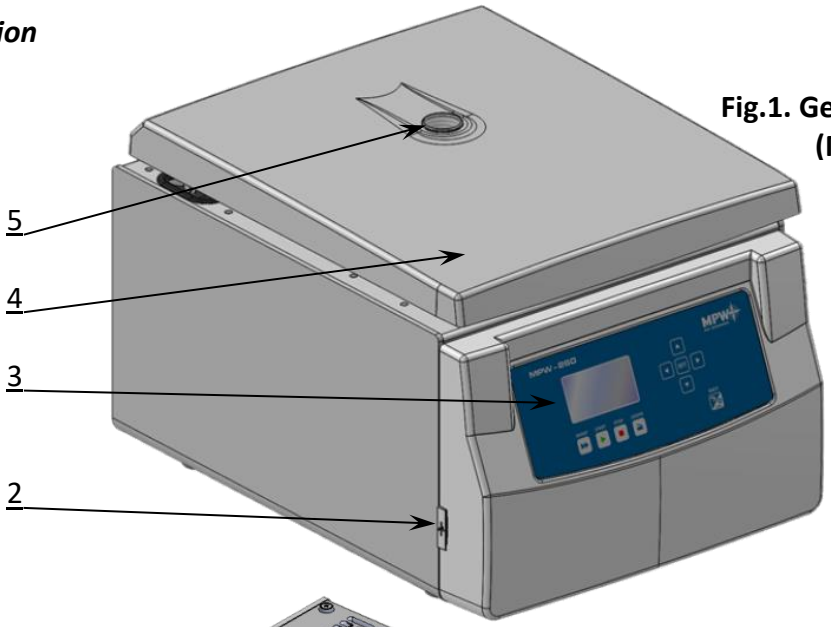


Fig.1. General view (MPW-260)

1. Power switch
2. USB
3. Control panel
4. Cover
5. Inspection glass
6. Point of emergency lid opening

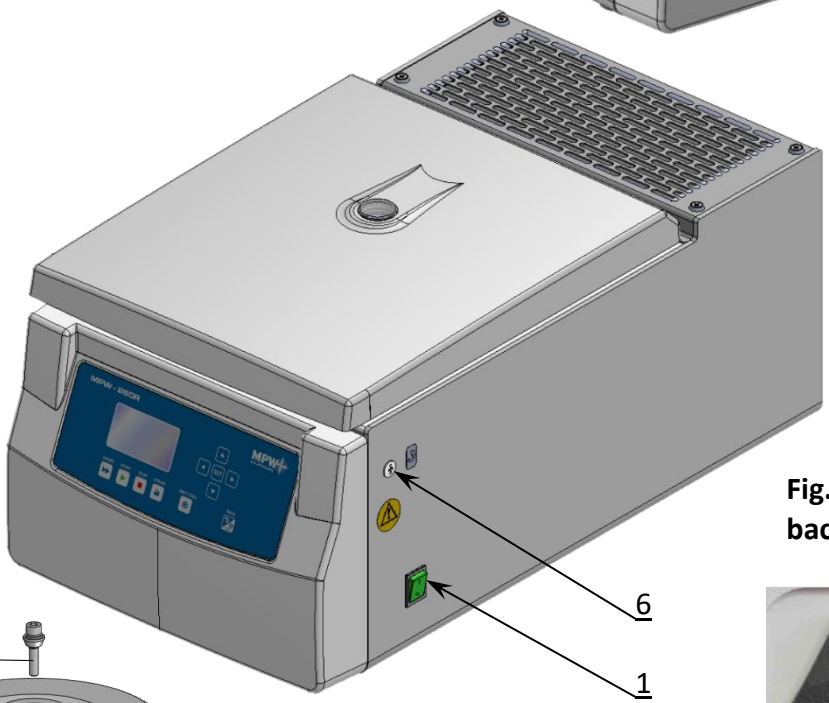
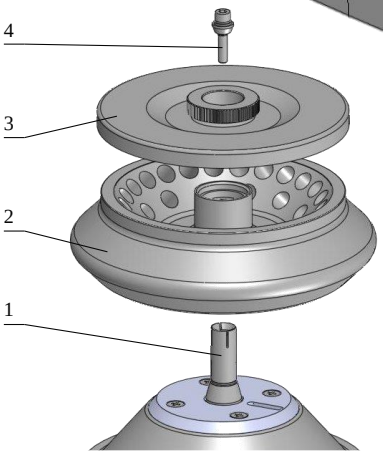


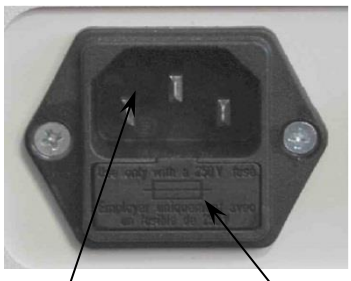
Fig.2. Right side of centrifuge (MPW-260R)



1. Motor axle
2. Rotor
3. Rotor lid
4. Complete clamp

Fig.3. Assembly of angle rotor

Fig.4. Mains socket back of the centrifuge



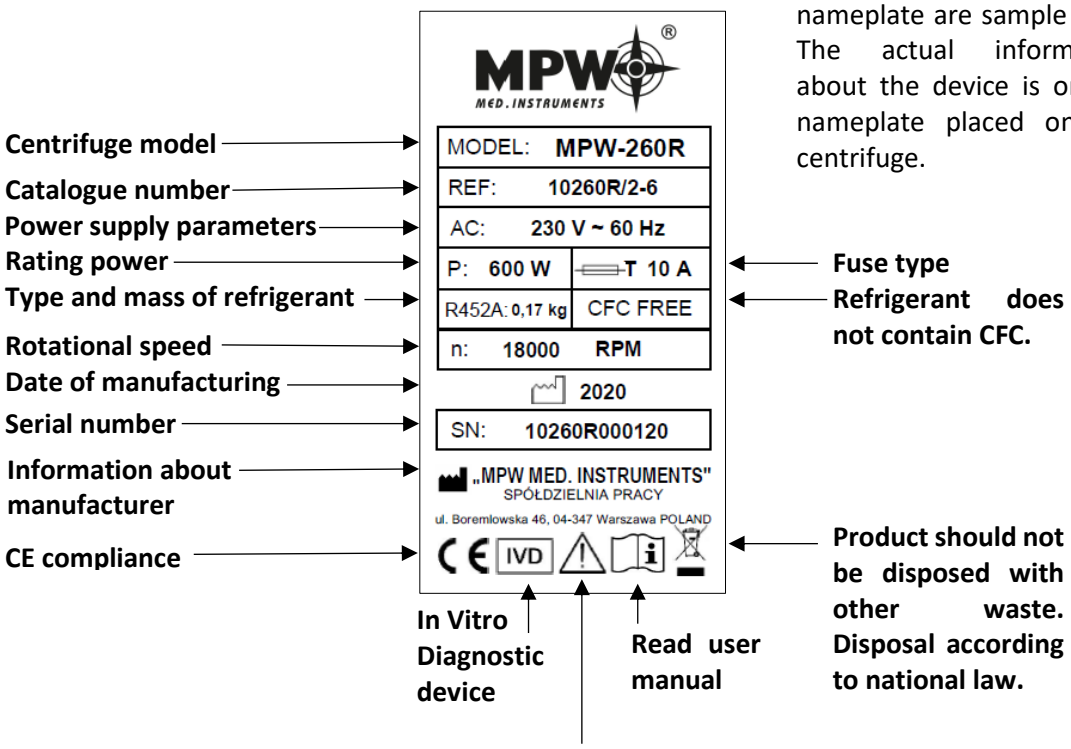
1. Plug-in socket
2. Fuse socket

5.3 *Construction*

The centrifuge has rigid self-supporting structure. Housing was made of sheet of aluminum, back made of steel sheet. Front and cover was made of ABS type plastic. Cover is fixed on steel axles of hinges and from the front it is locked with electromagnetic lock blocking possibility of opening during centrifugation. The rotation chamber is made of stainless steel sheet.

5.4 *Name plate*

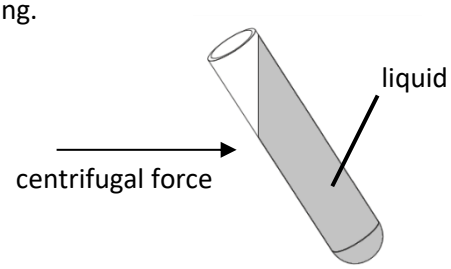
Information contained on the drawing of the nameplate are sample data. The actual information about the device is on the nameplate placed on the centrifuge.



5.5 *Rotor and accessories installation*

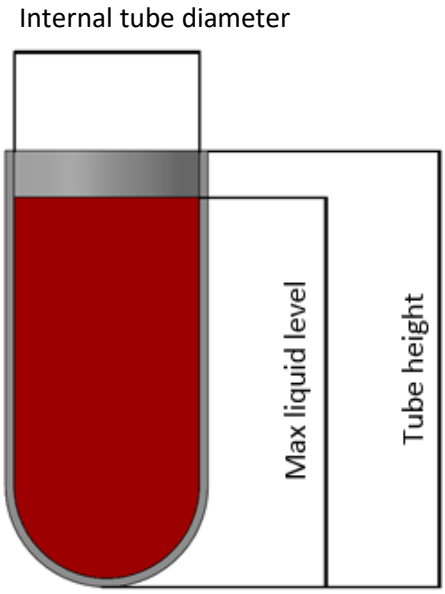
- Connect the centrifuge to the mains (master switch on the back side of the centrifuge).
- Turn on the centrifuge (button on the side of the centrifuge).
- Open the cover of the centrifuge by pressing the **COVER** key (see section "6.1. Control panel"). Prior to putting the rotor in, one has to check if the rotating chamber is free of impurities, e.g. such as dust, glass splinters, residues of fluids that must be taken away.
- One shall fit the rotor on the motor shaft driving it home on the cone.
- Screw-in the clamp for fixing the rotor (clockwise) and screw it tightly home with the supplied spanner for the rotor.
- Swing-out rotors have to be provided with the buckets in all seats. One should remember that every buckets swings individually. Bucket suspension studs should be lubricated periodically with petroleum jelly.

- In case of rotors designed with the cover they must not be used without it. Rotor covers must be closed exactly. Rotor covers ensure smaller drags of the rotors, proper setting of the test-tubes and airtight sealing.
- One should use only buckets intended for selected types of the rotor.
- Fill test tubes outside the centrifuge.
- In case of centrifuging in an angle rotor, test tubes (buckets) have to be filled properly in order to prevent from pouring fluids during centrifuging.
  - Tubes must be filled so that the material does not escape.



One shall fill tubes according to formula:

$$\text{Max liquid level} < \text{Tube height} - \frac{\text{Internal tube diameter}}{2}$$



Additionally observe the manufacturer's restrictions about the filling of the test tube.

⚠	It is recommended to equalize vessels loads as much as possible in order to ensure minimal vibrations during operation.

- **In order to prolong lifetime of the rotor and gaskets, it is recommended to lubricate rotor's pins, used for hanging buckets, undercuts for pins in buckets, gaskets and threaded parts with the petroleum jelly.**
- For replacement of the rotor one shall unscrew clamp and then grab the rotor with both hands at opposite sides, taking it away from drive shaft by pulling it up.

5.6 *Control device*

The microprocessor control unit of the centrifuge ensures broad possibilities of providing, realization and reading of work parameters.

5.7 *Setting parameters*

Data setting and read-out system forms hermetically closed keyboard with distinctly accessible operation points. Easily readable displays signalling individual performed operations facilitate operator's programming and recording of parameters and condition of the centrifuge.
The centrifuge is provided with the USB interface that enables connection of the centrifuge to external PC unit with the printer and recording the centrifugation parameters.

5.8 *Safety features*

Cover lock

The centrifuge can be started only with properly closed cover. While, the cover can be opened only after stopping the rotor. In case of emergency opening of the cover during operation, the centrifuge drive will be immediately switched-off and the rotor will brake till complete stopping.

Unbalance detecting

When loads of opposite buckets or carriers in rotors are unbalanced, the drive will be switched-off during acceleration or operation of the centrifuge – and the error message will be displayed.

Rotor verification and checking compatibility with loaded program

Directly after starting centrifuging, a unit verifies the type of the rotor applied and in the case of its incompatibility with the type indicated in the application or absence of the rotor, the spinning process shall be stopped with simultaneous displaying the error message. The conformity of the type of the rotor is signalled with a single audible signal. In case auto identification (see "9.8 Other") option is checked, proper rotor will be automatically chosen, without user engagement.

Rest state inspection

Opening of the centrifuge's cover by **COVER** button is possible only when the rotor is in the state of rest. Check if the symbol , detailed in the chapter 6.2, is visible on the screen. Use inspection glass in cover for be sure if rotor is in the rest state. When the rotor is being stopped, braking symbol or (see "6.2. Display") is visible and goes off when it is stopped. Emergency cover opening during rotor running is prohibited.

Checking of excessive temperature (MPW-260R)

If temperature in rotation chamber exceeds 50°C caused by, for example, malfunction of cooling system, drive will be switched off and error message will be displayed. The reboot is only possible after chilling device.

5.9 *Increase in temperature (MPW-260 only)*

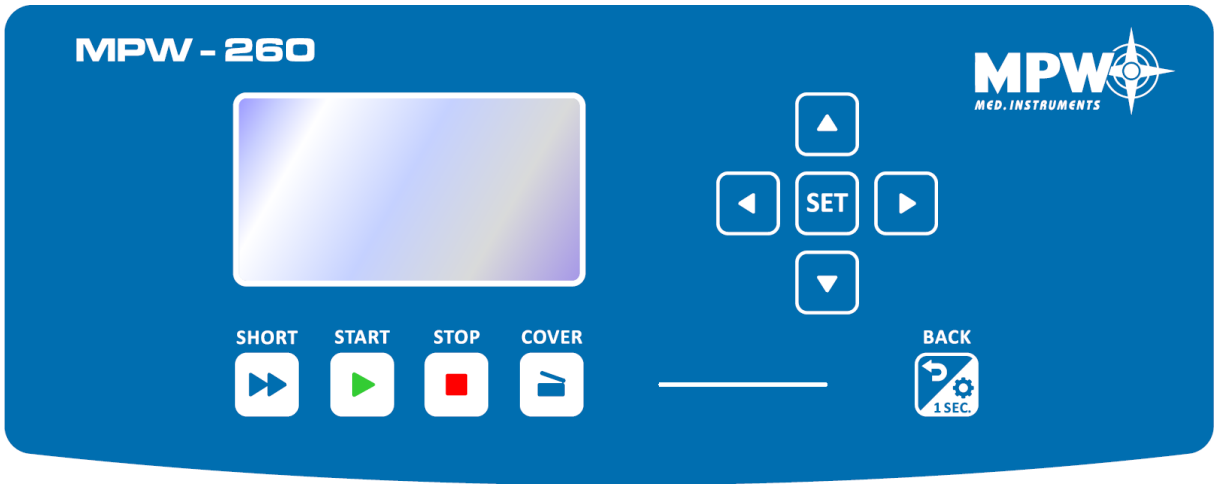
In uncooled centrifuges, the temperature in the rotor chamber, rotor and sample can increase to above 40°C, based on the run time, g-force (RCF)/speed and ambient temperature.

6 Centrifuging

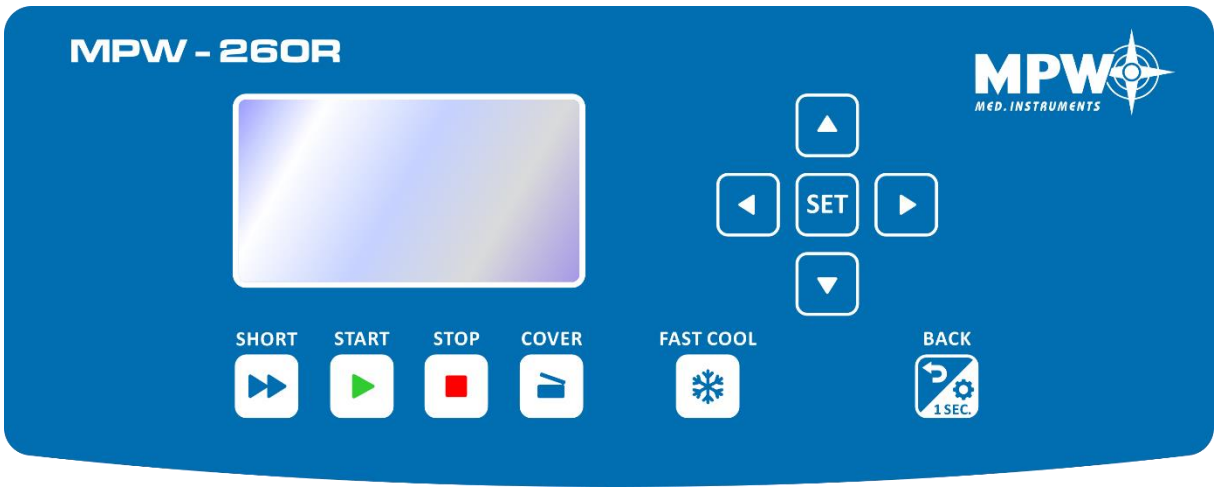
Power switching ON/OFF is carried out with master switch situated on the right side wall of the centrifuge. All settings on the centrifuge are done by means of the control panel.

6.1 *Control panel*

The control panel placed on the front casing serves the purpose of controlling centrifuge operation.



Control panel MPW-260



Control panel MPW-260R

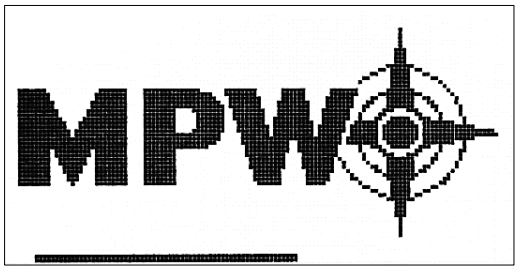
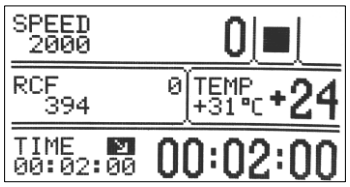
▶▶	SHORT[1]	short-time centrifuging
▶	START	start centrifugation run
■	STOP[2]	end centrifugation run
	COVER	cover opening
❄	FAST COOL	start fast cooling mode (MPW-260R only)
	BACK/ OPTIONS	exit the current menu / enter to submenu of options (keep held down within 1 s.)
▲	UP	navigation in menu / increasing values
▼	DOWN	navigation in menu / decreasing values
◀	LEFT	navigation in menu
▶	RIGHT	navigation in menu
SET	SET	changing parameters / confirming changes

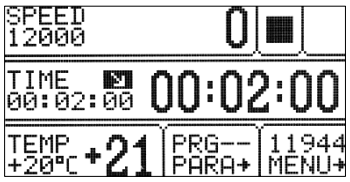
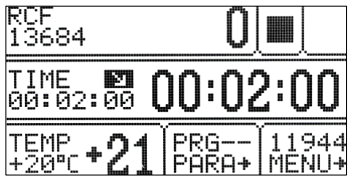
[1] the centrifuge is working as long as the key is pressed

[2] first-time pressing press – will make stopping centrifuging with acceleration characteristics set in the current program,
second-time pressing – will make stopping the centrifuging as fast as possible (quickest characteristic) (after stopping the rotor, the message can be cancelled by pressing any key except **SHORT**, **START** and **COVER** – if cover is open)
During setting of the parameters, it serves for exiting without introducing changes, same as **BACK** key.

6.2 *Display*

The display is located in the centre of the control panel. The main screen variants are presented below. In this chapter are shown exemplary screens for MPW-260R centrifuge (screens for MPW-260 – without cooling – do not include temperature field). Highlighting of field on display means it is selected and ready to set.

	After switching on centrifuge, welcome screen appears. After disappearing the welcome screen, it is possible to setting up parameters.
	**Simplified** display mode is set as default, there is possible to switch to **normal** (see chapter "9.3. Types of main screen").

Normal display contains an expanded number of settings visible during operation.	
RPM display mode	**RCF display mode**
	
▪ Detailed information on display modes is provided in chapter "9.3. Types of main screen".	

SPEED	rotor speed	assigned/measured
RCF	relative centrifugal force	assigned/measured
TIME	centrifuging time	assigned/measured
TEMP	temperature	assigned/measured
PRG	program no.	
11199	rotor no.	
PARAM	parameters of the centrifuge	
MENU	configuration menu	

	changing values		
	user multi sections curve		
	density > 1,2 g/cm^3		
	centrifuging radius changed		
	counting time down (decreasing)		counting time up (increasing)
	cooling to assigned temperature		
	FAST COOL mode cooling		
	centrifuging		centrifuging (with automatic cover opening)
	rotor stopped / closed cover		rotor stopped / opened lid
	braking		fastest decelerating
	rotor identification		
	thermal chamber		
	temperature delay		
	time delay		
	drop-down list		
	temporarily disabled		
	locked		
	time counting (blinking)		
	disabled option		active option

6.3 *Setting up RPM, RCF, time, temperature*

On the main screen, it is possible to set:

rotating speed - RPM	**SPEED**
relative centrifugal force (multiple of g-force)	**RCF**
centrifuging time	**TIME**
centrifuging temperature	**TEMP** (only MPW-260R)

Exemplary change of **SPEED** setting:

- Press **SET** (to enter edit mode) – appears.
- Via ▲▼◄► keys mark **SPEED** field (blinking).
- Press **SET-** blinking.
- Via ◄► choose order of magnitude of changing value (blinking).
- With ▲▼ choose demanded value.
- Repeat above two steps for other orders of magnitude.
- Confirm settings by pressing **SET**.
- Press **BACK**.

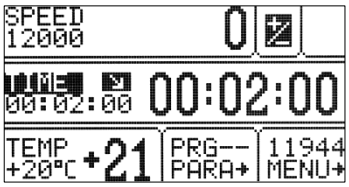
- When RPM is changed, RCF is automatically corrected.

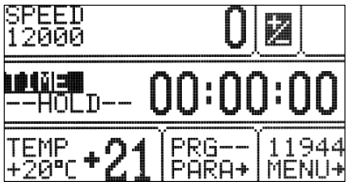
Exemplary change of **RCF** setting:

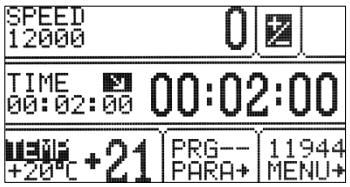
- Press **SET** (to enter edit mode) – appears.
- Via ▲▼◄► keys mark **RCF** field (blinking).
- Press **SET-** blinking.
- Via◄► choose order of magnitude of changing value (blinking).
- With ▲▼ choose demanded value.
- Repeat above two steps for other orders of magnitude.
- Confirm settings by pressing **SET**.
- Press **BACK**.

- When RCF is changed, RPM is automatically corrected.

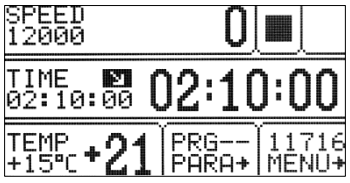
▪ When setting the speed value, setting "hundreds" or "thousands" resets the "units" and "tens".

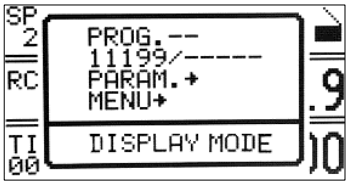
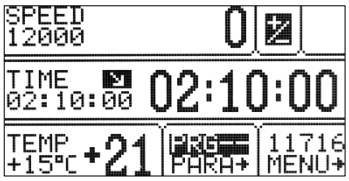
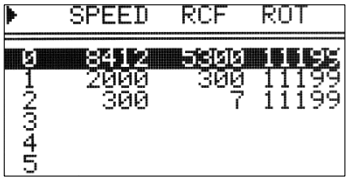
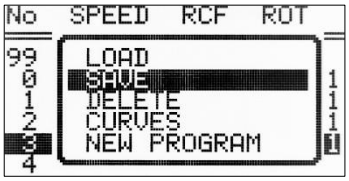
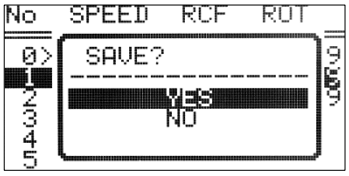
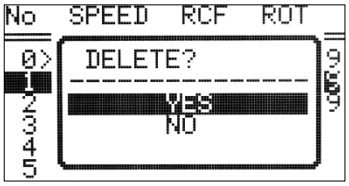
Exemplary change of **TIME** setting:	
	▪ Press **SET** (to enter edit mode) - appears. ▪ Via▲▼◄► keys mark **TIME** field (blinking).
00:02:00 **[hh : mm : ss]** e.g.: centrifuging time – 2 minutes 00 seconds	▪ Press **SET** - blinking. ▪ Via◄► choose order of magnitude of changing value (blinking). ▪ With▲▼ choose demanded value. ▪ Repeat above two steps for other orders of magnitude. ▪ Confirm settings by pressing **SET**. ▪ Exit edit mode by pressing **BACK**.
00:02:00	set value
02:00	current value (most significant digits)

HOLD mode – continuous run mode	
	▪ To run centrifuging in **HOLD** mode set **00:00:00** time. ▪ To end centrifuging in **HOLD** mode press **STOP**.

Exemplary change of **TEMP** setting (only MPW-260R):	
	▪ Press **SET** (to enter edit mode) – appears. ▪ Via ▲▼◄► keys mark **TEMP** field (blinking). ▪ Press **SET** key. ▪ With▲▼ choose demanded value. ▪ Confirm settings by pressing **SET**. ▪ Press **BACK**.

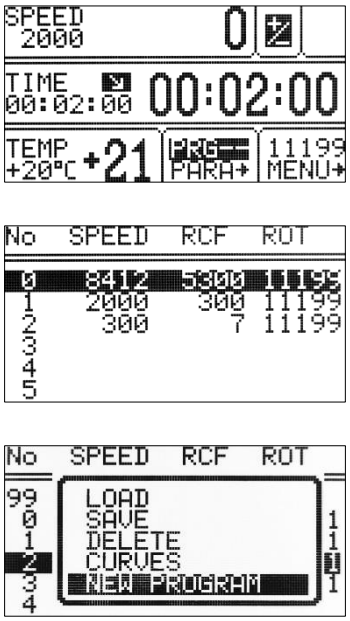
6.4 *Users programs*

	After switching centrifuge on, program that was used in previous session is being loaded. If any program was not used in previous session, centrifuge resume the last chosen parameters.
	

Program choosing:	
Entering the program selection mode for the simplified display:	
	▪ Press and hold BACK 1 SEC by 1 second. ▪ Choose **PROG** with ▲▼ ▪ Press **SET**.
Entering the program selection mode for the normal display:	
	▪ Press **SET** key – appears. ▪ Via ▲▼◄► keys mark **PRG – –** field (highlighted) ▪ Press **SET** key – list of programs is visible.
Program selection mode tab:	
	▪ Via ▲▼ choose demanded program. ▪ Confirm with **SET** key.
	**LOAD**, **SAVE**, **DELETE, CURVES, NEW PROGRAM** refer chosen program which is marked by ▶. ▶ – currently chosen program.
	▪ **LOAD** – load selected program
	▪ **SAVE** – save settings as a program (confirm by selecting **YES** and pressing **SET**)
	▪ **DELETE** – delete program (confirm by selecting YES and pressing **SET**)
	▪ **CURVES** – creating characteristics
	▪ **NEW PROGRAM** – creating new program

NEW PROGRAM – enter to create new program mode (as below)

Creating a new program:

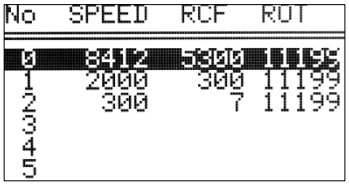


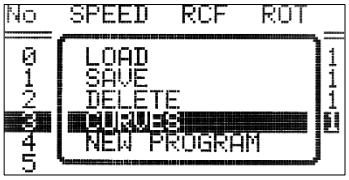
- Press **SET** key.
- Via▲▼◄► keys mark **PRG – –** field (blinking).
- Press **SET** key. List of programs is visible, choose demanded position (number of program).
- Press **SET** key- menu of program settings will appear.
- Choose **NEW PROGRAM** press **SET** and **BACK**, and then set demanded parameters of centrifuging (look chapter "6. Centrifuging").
- In case you want to register new program, back to the **PRG – –** menu and save it as described before.

Changing parameters during centrifuging:

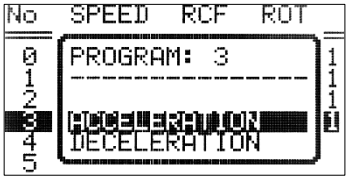
- There is a possibility to change parameters: **SPEED, RCF, TIME, TEMP** during centrifuging. Such modifications inactivate currently running program. When program was set, modification during run is represented by **PRG – –** symbol (instead of the program number).

CURVES – create acceleration or deceleration characteristics





- With ▲▼ keys choose saved program for which you intend to create the acceleration or deceleration characteristics (marked with symbol ▶).
- Press **SET**.
- With ▲▼ keys choose **CURVES.**
- Press **SET** - the selection frame is displayed**.**



- With ▲▼ keys choose **ACCELERATION** to create acceleration characteristics or **DECELERATION** to create deceleration characteristics
- Confirm selection by pressing **SET**.

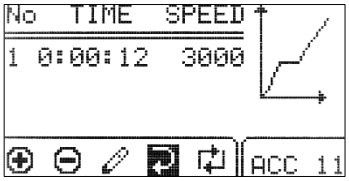
Acceleration characteristic

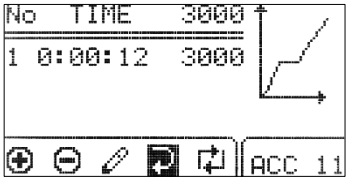
PROG / CURVES / **ACCELERATION**

After choosing **PROG → CURVES → ACCELERATION** the window of the characteristics wizard will be displayed:

Current acceleration characteristic connected with the loaded program will be displayed on the screen.

SPEED or **3000** displayed (example):

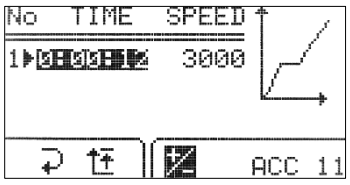


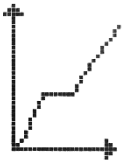


NO.	section no. (max. 4)
TIME	total acceleration time
SPEED	final RPM
ACC:15	characteristic's no. (10-19)
	adding a new section
	deleting last section
	editing sections
	exiting from characteristics wizard
	switching RPM/RCF
	entering graph view

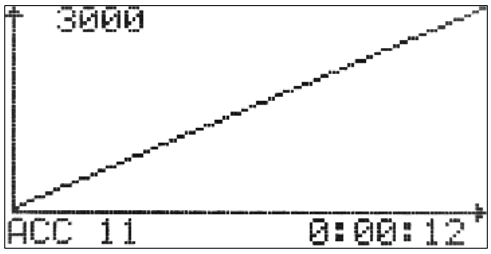
In the first moment, the ↩ field is marked. Pressing the **SET** key will cause returning to the **PROG → CURVES** fold, without making changes in the acceleration characteristics. To start editing single section characteristic with ◄► choose ✎ icon and press **SET**.

SECTION 1.

<table>
<tr><td colspan="2">Entering the characteristic sections editing menu (time will be highlighted):</td></tr>
<tr><td rowspan="2"> 
</td><td>±/−</td><td>editing value (flashing means editing the given value)</td></tr>
<tr><td colspan="2">▪ Press SET
▪ With ▲▼◄► choose time for section
▪ Press SET
▪ With ▼ choose ↩ and press SET, to finish editing the characteristic. Finishing edition can be also done by pressing BACK button</td></tr>
</table>

After the end of programming time and/or speed it is possible to graphical display of the section (of all sections) ***TIME+SPEED*** *of the user's acceleration characteristics. The set sections of the characteristic are illustrated in the graph, that can be displayed by selecting the*  *icon with the ◄► buttons and pressing* ***SET****. Exit by pressing* ***SET*** *or* ***BACK****.*

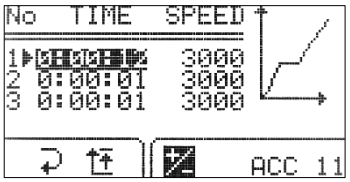
GRAPH

<table>
<tr><td>Graph window for the characteristics:</td></tr>
<tr><td> 
</td></tr>
</table>

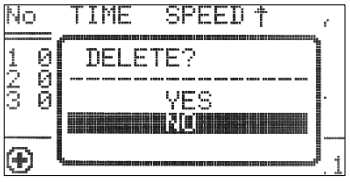
ADDING AND EDITING SECTIONS

To program next sections, select the ⊕ icon with the ◄► buttons and press **SET**. A new section (sections) will appear with a time of 1 second and a speed equal to the maximum speed.

To start editing a newly added section (sections), select the ✎ icon with the ◄► buttons and press **SET**, and follow the instructions given below.

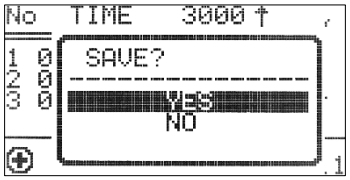
<table>
<tr><td colspan="2">Entering the characteristic sections editing menu (time will be highlighted):</td></tr>
<tr><td rowspan="2"> 
</td><td>The maximum speed value for the section cannot be higher than the maximum speed value for the characteristic (for the last section). It is possible to create "descending" sections.</td></tr>
<tr><td>▪ With ▲▼◄► highlight time or speed for desired section
▪ Press SET
▪ With ▲▼◄► choose value
▪ Press SET
▪ Repeat until setting all the sections
▪ To finish editing characteristic with ▲▼ choose ⮌ and press SET. Finishing edition can be also done by pressing BACK button</td></tr>
</table>

DELETING SECTIONS

<table>
<tr><td colspan="2">In the characteristics wizard:</td></tr>
<tr><td> 
</td><td>▪ Select the ⊖ icon with the ◄► buttons and press SET
▪ In the "Delete?" window, use ▲▼ buttons to select YES to confirm deleting the characteristic section or NO to cancel
▪ Press SET</td></tr>
</table>

It is possible to program the characteristic using RCF. To do this, in the characteristics wizard window, select the ⮔ icon with the ◄► buttons and press **SET**.

SAVING CREATED CHARACTERISTIC

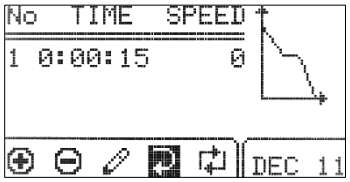
In the characteristics wizard:	
	▪ Select the ↩ icon with the ◄► buttons and press **SET** ▪ In the "Save?" window, use ▲▼ buttons to select YES to confirm saving the characteristic or NO, to exit without saving ▪ Press **SET**

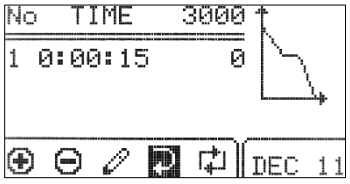
Deceleration characteristic:	PROG / CURVES / **DECELERATION**

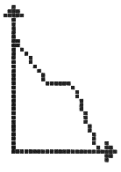
After choosing **PROG → CURVES → DECELERATION** the window of the characteristics wizard will be displayed:

Default deceleration characteristics connected with the loaded program will be displayed on the screen. Creating of deceleration characteristics takes place similarly to acceleration characteristics.

SPEED or **3000** displayed (example):

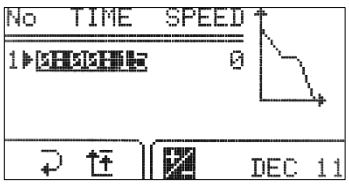




NO.	section no. (max. 4)
TIME	total acceleration time
SPEED	final RPM
DEC:10	characteristic's no. (10-19)
⊕	adding a new section
⊖	deleting last section
✎	editing sections
↩	exiting from characteristics wizard
⇄	switching RPM/RCF
	entering graph view

In the first moment, the ↩ field is marked. Pressing the **SET** key will cause returning to the **PROG → CURVES** fold, without making changes in the deceleration characteristics. To start editing single section characteristic with ◄► choose ✎ icon and press **SET**.

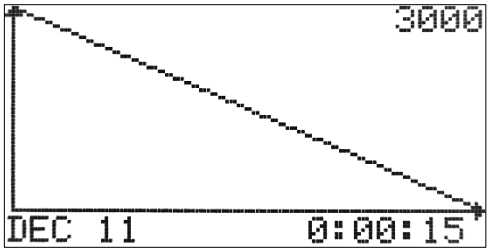
SECTION 1.

Entering the characteristic sections editing menu (time will be highlighted):	
	editing value (flashing means editing the given value) ▪ Press **SET** ▪ With ▲▼◄► choose time for section ▪ Press **SET** ▪ With ▼ choose ↩ and press **SET**, to finish editing the characteristic. Finishing edition can be also done by pressing **BACK** button

Speed of the last of programmed sections of the curve is = 0 (RPM). It is not possible to change it.

After the end of programming time and/or speed it is possible to graphical display of the section (of all sections) ***TIME+SPEED*** *of the user's deceleration characteristics. The set sections of the characteristic are illustrated in the graph, that can be displayed by selecting the* *icon with the ◄► buttons and pressing* ***SET****. Exit by pressing* ***SET*** *or* ***BACK****.*

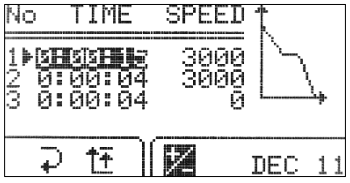
GRAPH

Graph window for the characteristics:


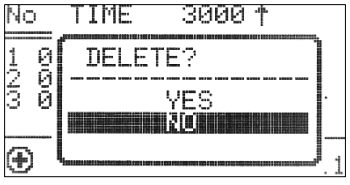
ADDING AND EDITING SECTIONS

To program next sections, select the ⊕ icon with the ◄► buttons and press **SET**. A new section (sections) will appear.

To start editing a newly added section (sections), select the ✎ icon with the ◄► buttons and press **SET**, and follow the instructions given below.

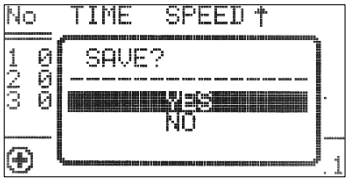
<table>
<tr><td colspan="2">Entering the characteristic sections editing menu (time will be highlighted):</td></tr>
<tr><td rowspan="2"> 
</td><td>The maximum speed value for the section cannot be higher than the maximum speed value for the characteristic (for the first section). It is possible to create "ascending" sections.</td></tr>
<tr><td>▪ With ▲▼◄► highlight time or speed for desired section
▪ Press SET
▪ With ▲▼◄► choose value
▪ Press SET
▪ Repeat until setting all the sections
▪ To finish editing characteristic with ▲▼ choose ↩ and press SET. Finishing edition can be also done by pressing BACK button</td></tr>
</table>

DELETING SECTIONS

<table>
<tr><td colspan="2">In the characteristics wizard:</td></tr>
<tr><td> 
</td><td>▪ Select the ⊖ icon with the ◄► buttons and press SET
▪ In the "Delete?" window, use ▲▼ buttons to select YES to confirm deleting the characteristic section or NO to cancel
▪ Press SET</td></tr>
</table>

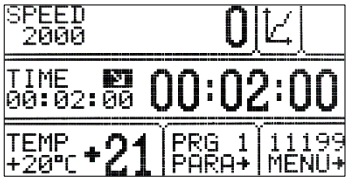
It is possible to program the characteristic using RCF. To do this, in the characteristics wizard window, select the ⇄ icon with the ◄► buttons and press **SET**.

SAVING CREATED CHARACTERISTIC

In the characteristics wizard:	
	▪ Select the ↵ icon with the ◄► buttons and press **SET** ▪ In the "Save?" window, use ▲▼ buttons to select YES to confirm saving the characteristic or NO, to exit without saving ▪ Press **SET**

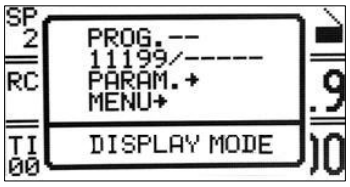
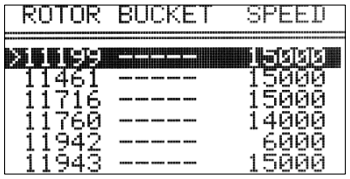
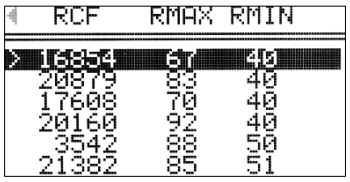
6.5 *Programs with user characteristics*

Loading a modified program in the **CURVES** fold is signalled by the icon on the main screen:

	Icon ↙ signals that program with user acceleration/deceleration characteristics is loaded (no. of characteristic 10 – 19).

A change in any parameter entails the deactivation of the multi-sections curves mode.

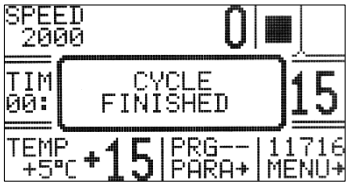
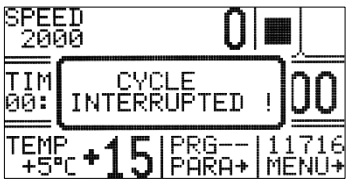
6.6 *Rotor and bucket choosing*

<table>
<tr><td colspan="2">Simplified display mode</td></tr>
<tr><td> 
</td><td>▪ Press and hold BACK 1SEC by 1 second.
▪ Choose rotor number (exemplary 11199/-----) with ▲▼.
▪ Press SET.
▪ Execute points descripted follow (below Normal display mode description)</td></tr>
<tr><td colspan="2">Normal display mode</td></tr>
<tr><td>
</td><td>▪ Press SET– appears.
▪ Via ▲▼◄► mark rotor choosing field.
▪ Press SET (Rotors and buckets list will appear).</td></tr>
<tr><td> 
</td><td>▪ Via ▲▼ keys mark demanded rotor number
▪ Confirm by pressing SET.
▪ If a bucket can be selected:
o With ▲▼ select demanded bucket number.
o Press SET.
▪ Press BACK to close edition mode.</td></tr>
<tr><td> 
</td><td>▪ With ◄► keys one may switch between screens of rotors parameters</td></tr>
<tr><td colspan="2">▪ It is possible to set AUTOMATIC ROTOR IDENTIFICATION. The procedure is described in subsection “9.8. Other”.</td></tr>
</table>

6.7 *SHORT mode*

SHORT MODE – short work mode (centrifuging with pressed **SHORT** key)	
	▪ The **SHORT** mode is activated by pressing and holding ▶▶(**SHORT**). In SHORT mode the centrifuge is working as long as the **SHORT** key is pressed or when set time is over. ▪ Centrifuging is stopped after releasing the **SHORT** key.

6.8 *Finishing the centrifuging*

▪ When preselected time is reached, centrifugation will end automatically.	
	
 x1	▪ Before lapse preselected time one may stop centrifugation. Pressing **STOP** for the first time will stop centrifuging with the characteristic set in loaded program. symbol will be shown.
 x2	▪ Pressing **STOP** second time will stop centrifuging with the fastest characteristic. symbol will be shown.
	
▪ The message about cancel of centrifuging can be delete with the **STOP**, **SET, COVER, ▲▼◄►** or **BACK** key.	

6.9 *Temporarily disabled functions*

Functions written below can be temporarily disabled.

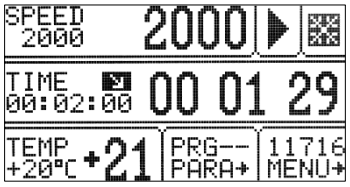
active	**SPEED**	**RCF**	**TIME**	**TEMP**	**PROG —**	**——— / ——**	**PARAM**	**MENU**
THERMAL CHAMBER	●	●	●	○	●	●	●	●
STANDARD CENTRIFUGING	●	●	●	●	●	○	●	○

● available
○ disabled

7 Temperature control

⚠	**MPW-260R** only

Centrifuge is equipped with ecological refrigerating system with temperature control. During centrifugation, there may appear differences in temperature on the display and temperature of the samples in the rotor. It depends on thermal conductivity of the rotor, and samples and centrifugation time, initial temperature of rotor and samples.

Exemplary change of **TEMP** setting:	
	▪ Press **SET** (to enter edit mode) – appears. ▪ Via ▲▼◄► keys mark **TEMP** field (highlighted). ▪ Press **SET** key. ▪ With▲▼ choose demanded value (from -20°C to 40°C). ▪ Confirm settings by pressing **SET**. ▪ Press **BACK**.
	Cooling is indicated by a symbol (blinking).

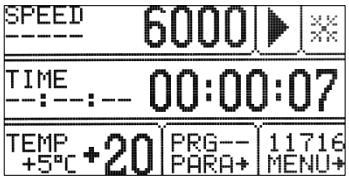
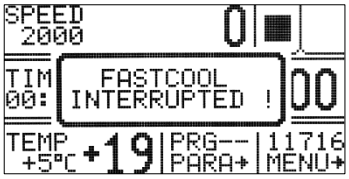
7.1 *Initial cooling during centrifuging –FAST COOL*

<table>
<tr><td>
</td><td>

The parameters allowable to change at FAST COOL mode:

temperature (lower than current temperature shown by centrifuge)

In order to centrifuging reduced temperature samples (e.g. storage in the external refrigerator) centrifuge chamber, rotor and centrifuge container must be pre-cooling to the predetermined temperature. It cause minimalization of temperature differences.
Initial cooling may be activated by FAST COOL key (lid must be closed – rotor is spinning at FAST COOL mode)
When FAST COOL mode is active, cooling system automatically set proper parameters to obtain demanded temperature the fastest way.
It is possible to exit FAST COOL mode at any time by pressing STOP key.

</td></tr>
<tr><td> 
</td><td>FAST COOL mode is marked by symbol blinking in the right upper side of display.</td></tr>
<tr><td> 
</td><td>It is possible to exit FAST COOL mode at any time by pressing STOP key.
Interruption of the function is signalled by a message.</td></tr>
</table>

7.2 *Initial cooling without centrifuging – THERMAL CHAMBER*

	PARAM → **THERMAL CHAMBER**
	▪ There is possible to run centrifuge in THERMAL CHAMBER mode – cooling (rotor is at standstill). ▪ How to enable **THERMAL CHAMBER** is described in "8.5. Thermal chamber" chapter.

7.3 *Cooling in "START DELAY – OF TEMPERATURE" mode*

	PARAM → **START DELAY – OF TEMPERATURE**
	▪ Centrifuging process will start, when preselected temperature is reached. ▪ How to enable run **START DELAY – OF TEMPERATURE** function is described in "8.8. Start delay – of temperature" chapter.

7.4 *Cooling in „SHORT" mode*

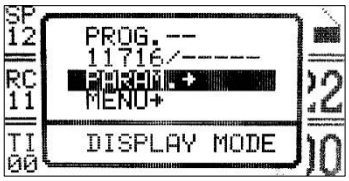
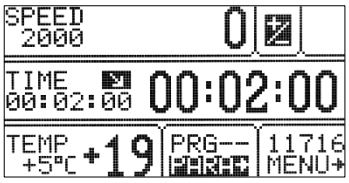
	▪ Cooling feature is available in SHORT mode. ▪ How to enable run centrifugation in **SHORT mode** is described in "6.7. SHORT mode".

7.5 *Cooling notes*

Centrifuge with cooling – MPW-260R is equipped with an efficient cooling system. It allows obtaining selected temperatures in the chamber even at maximum spin speed or fast obtaining desired temperatures (e.g. +4°C). Note that time and possibility of obtaining a set temperature is dependent on multiple factors, including: the power of the cooling system, the shape of the rotor, the rotor speed, ambient temperature, etc. The temperature on the display is appropriate for the place of the temperature sensor in the chamber, accuracy is ±1°C. The temperature of the sample may be different.

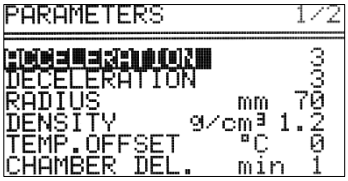
8 Parameters of centrifugation

This chapter contains exemplary screens of MPW-260R centrifuge (screens for MPW-260 – without cooling – do not include temperature field).

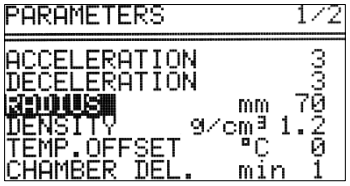
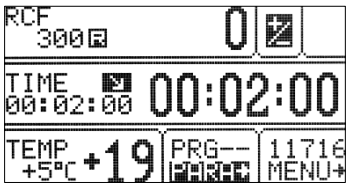
<table>
<tr><td colspan="2">Simplified display</td></tr>
<tr><td> 
</td><td>▪ Press and hold BACK 1 SEC by 1 second.
▪ Choose PARAM. with▲▼
▪ Press SET.</td></tr>
<tr><td colspan="2">Normal display</td></tr>
<tr><td> 
</td><td>▪ Press SET.
▪ With ▲▼◄► keys select PARAM.
▪ Press SET.</td></tr>
<tr><td colspan="2">▪ It is possible to switch between two different screens via ◄► keys in PARAMETERS field.</td></tr>
<tr><td>
</td><td>
</td></tr>
</table>

ACCELERATION	chosen acc. characteristic (0-the fastest, 9-the slowest)
DECELERATION	chosen dec. characteristic (0-the fastest, 9-the slowest)
RADIUS [mm]	current rotor radius [mm]
DENSITY (g/cm^3)	sample density [g/cm^3]
TEMP. OFFSET (^{O}C)	value of temperature correction
CHAMBER DEL. (min)	delay between set thermal chamber mode and start it
THERMAL CHAMBER	cooling of the chamber without centrifuging
AUTOM. LID OPENING	opening cover after centrifuging automatically
START DELAY	starting delayed (after pressing START)

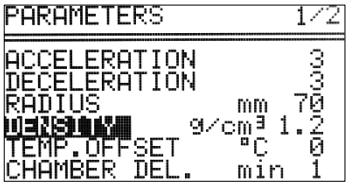
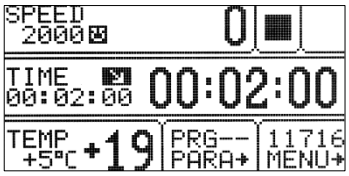
8.1 *Acceleration/deceleration – changing characteristics*

	▪ With ▲▼ keys select **ACCELERATION** or **DECELERATION**. ▪ Press **SET.** ▪ With ▲▼ keys select demanded number of characteristic. ▪ Press **SET**. **ACCELERATION** –10 (0 ÷ 9), linear accelerating characteristics assigned to every rotor. 0-the fastest acceleration, 9-the slowest acceleration. **DECELERATION** – 10 (0 ÷ 9), linear decelerating characteristics assigned to every rotor. 0-the fastest deceleration, 9-the slowest deceleration.

8.2 *Radius*

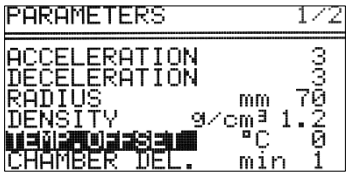
	**RADIUS [mm]** - control of the radius of the rotor within the range from $\mathbf{R_{min}}$ to $\mathbf{R_{max}}$. Available values depends on chosen rotor. Radius correction serve for more precise control RCF, exemplary when user need to know real RCF in half length of test tube. ▪ To change the rotor radius select **RADIUS [mm]** with ▲▼ keys. ▪ Press **SET**. ▪ Set demanded value by pressing ▲▼. ▪ Press **SET**.
	When radius correction is activated, R symbol is visible on the screen. Reducing of the rotor radius resulting change of displayed RCF value.

8.3 *Sample density*

	**DENSITY (g/cm³)** – default density is set to **1,2 g/cm³** To change the density (possible values **1,2÷9,9 g/cm³**): ▪ Via ▲▼ keys select **DENSITY (g/cm³)** ▪ Press **SET**. ▪ Set demanded value by pressing ▲▼. ▪ Press **SET**.
	When density is changed, symbol is visible on the screen. Changing of **DENSITY** value is obligatory when density of sample placed into rotor is higher than 1.2 g/cm³. Change of **DENSITY** value lead to decreasing maximum value of accessible speed.

8.4 *Temperature offset*

⚠	**MPW-260R** only



Temperature offset serve for more precise control of real sample temperature. It can be helpful in case high/low initial temperature samples or high volume samples.

- With▲▼keys select **TEMP. OFFSET**.
- Press **SET**.
- Use the ▲▼ keys to select the difference between the temperature that the cooling system will aim for, and set temperature. Confirm selection by pressing **SET**.

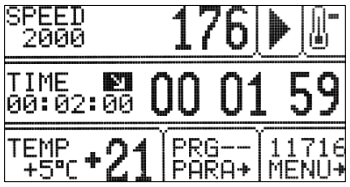
Attention!
The use of the offset can not extend the temperature range achieved by the centrifuge.

Function description

At a set temperature of 20°C and the set offset value equal to -5°C, cooling system will actually strive to reach 15°C. With a setpoint temperature of 20°C and a set offset value of 5°C the system will actually try to reach 25°C.

The temperature displayed on the main screen is corrected for offset value.

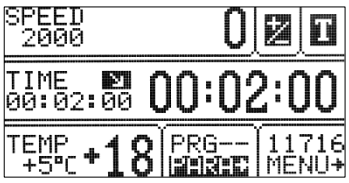
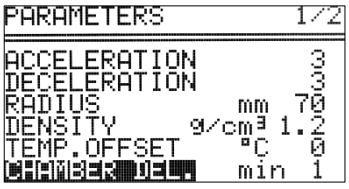
Offset can be selected range from -20°C to 20°C.



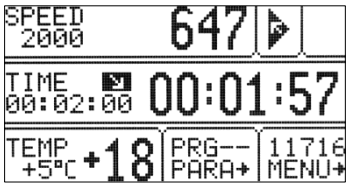
Activation of the function is signalled on the main screen with or depending on the offset value sign.

8.5 *Thermal chamber*

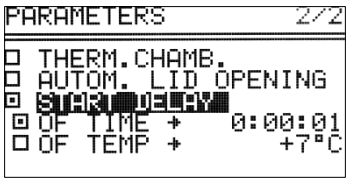
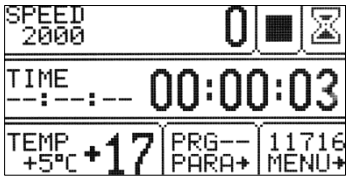
⚠	**MPW-260R** only

Cooling without centrifuging.	**THERMAL CHAMBER**
	▪ With ▲▼◄► keys select **THERMAL CHAMBER**. ▪ Press **SET** (to turn on/off). ▪ With ▲▼ keys select temperature value. ▪ Set demanded value (0°C÷40°C) by pressing ▲▼. ▪ Confirm selection by pressing **SET**. Attention, in the centrifuge without heating, do not set the thermal chamber to a value higher than currently indicated by the centrifuge.
	When THERMAL CHAMBER function is activated, T symbol is visible on the screen. Changing temperature from the main screen is not possible. Opening cover terminates THERMAL CHAMBER function (closing cover back turns it on).
	Thermal chamber is activated with delay. ▪ Set time of delaying by select **CHAMBER DEL.** ▪ Press **SET.** ▪ With ▲▼ keys select demanded value (1-5 min). ▪ Press **SET**.
▪ If **THERMAL CHAMBER** is turned on (in **PARAM**) and centrifugation completes, **THERMAL CHAMBER** will activate itself. ▪ **THEMRAL CHAMBER** can be only activated when any other program is not running.	

8.6 *Automatic lid opening*

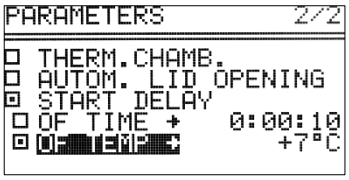
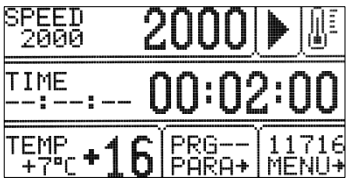
Automatic lid opening	**AUTOMATIC LID OPENING**
	▪ When centrifuge process is finished, cover will be opened automatically for set option AUTOM. LID OPENING. ▪ When centrifuging is terminated by pressing **STOP**, opening cover is possible by pressing **COVER**.
	▶ symbol means that OPEN LID AFTER RUN is active.

8.7 *Start delay - of time*

⧖ Start centrifuging since preselected delay is reached.	STARY DELAY / **OF TIME**
	▪ With ▲▼ keys select **START DELAY**. Press **SET**. Start delay can be set from **0 : 0 0 : 0 1** to **9 : 5 9 : 5 9**. ▪ With ▲▼ keys select **OF TIME**. Press **SET** and ► and then **SET**. ▪ With ▲▼ keys set demanded value. ▪ Confirm by pressing **SET**. ▪ Press **BACK** to escape edit mode.
	When START DELAY function is activated, ⧖ symbol is visible on the screen.
▪ START DELAY / **OF TIME** function can be stopped at any moment by pressing **STOP**.	
▪ START DELAY / **OF TIME** function cannot be run when START DELAY / **OF TEMP.** is activated.	

8.8 *Start delay – of temperature*

	MPW-260R only

	Start centrifuging time counting since preselected temperature is reached.	START DELAY / **OF TEMP.**
		▪ With ▲▼◄► keys mark **START DELAY**. ▪ Press **SET**. ▪ With ▲▼◄► keys mark **OF TEMP.** ▪ Press **SET**. ▪ Press ►, press **SET.** ▪ With ▲▼ keys set demanded value of temperature. ▪ Press **SET**. ▪ Exit edit mode by press **BACK**.
		When START DELAY – OF TEMPERATURE is turned on, symbol is visible on the screen.
▪ When the function is active, the speed can be reduced to the optimum values for the **FAST COOL** function, when the set speed is lower than the optimum value, the rotor rotates at the set by user speed.		
▪ START DELAY / **OF TEMP.** function cannot be run when START DELAY / **OF TIME** is activated.		

8.9 *Printing report (USB)*

When the centrifuging process is finished there is a possibility to obtain report. Report can be transferred to PC or printed.

PC (USB)

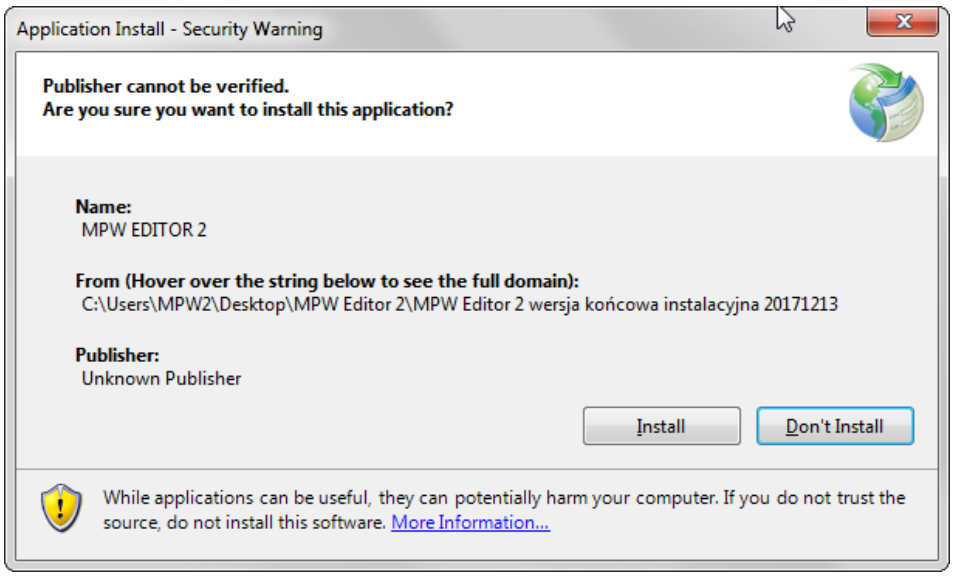
The elements needed to make connecting your computer via USB:

name	quantity (pcs.)	cat. No.
USB A-A cable	1	16655
MPW Editor 2 application	1	to downloaded from the website: www.mpw.pl

Operating System Requirements: **Microsoft Windows 10 (64bit).**
The Manufacturer does not guarantee that the program will work correctly with other operating systems.

Preparation

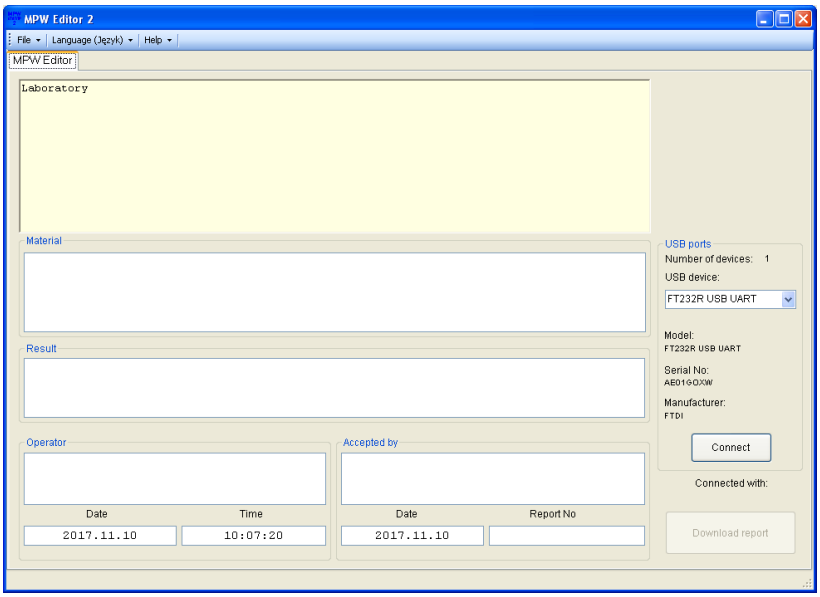
- Download installation file from website at **www.mpw.pl.**
- Unzip the file and run **setup.exe**.
- Install **MPW Editor 2** application on the computer, press **Install**.



- If **necessary** install **FTDI USB drivers** and **.NET Framework 4.0** library (download with manufacturer's website: **www.mpw.pl**).

Centrifuging and printing

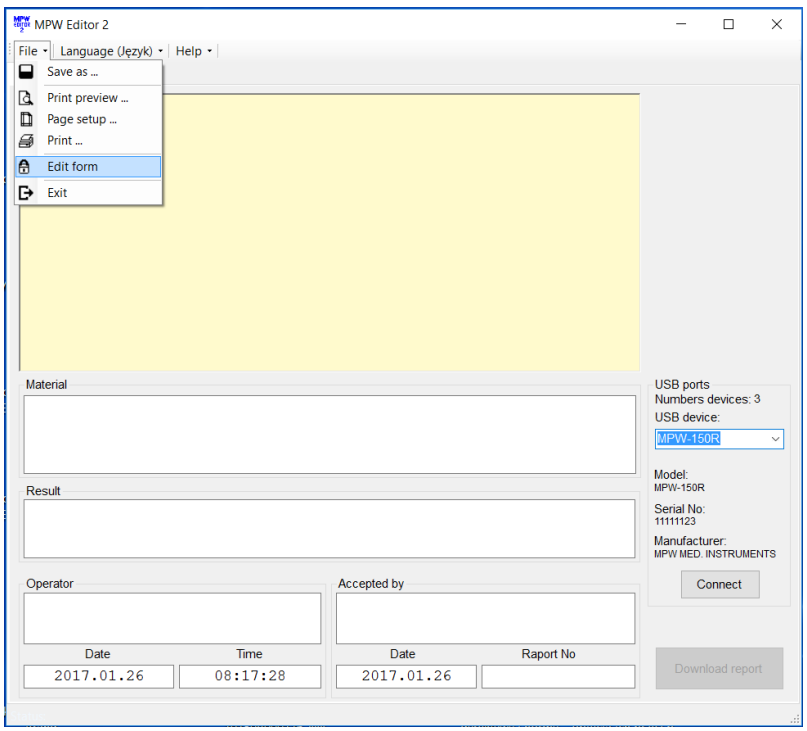
- Run **MPW Editor 2** application.
- Choose **Język\English**



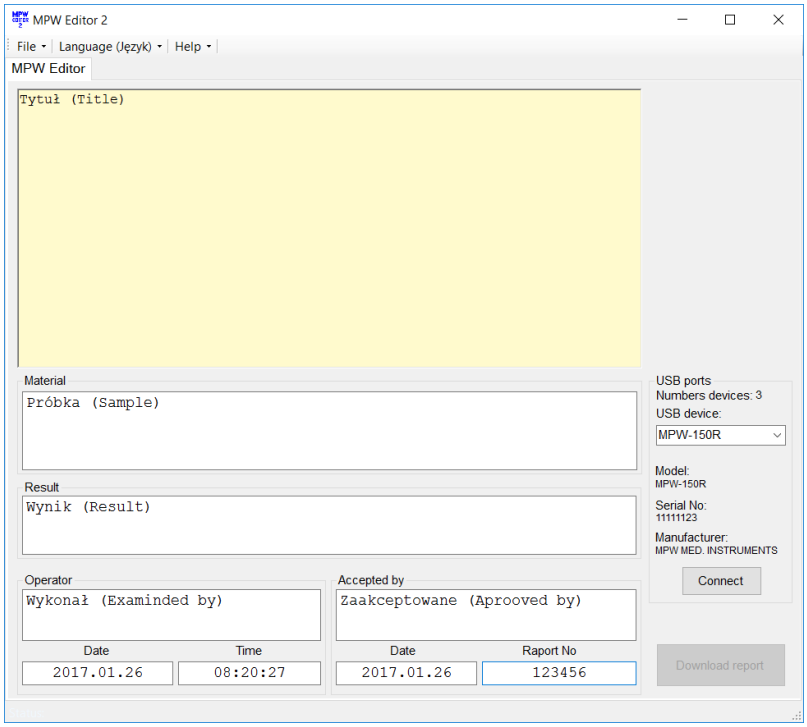
- Connect centrifuge to the PC in accordance with the „**Connection scheme”**
- Choose port assigned to the centrifuge (it will appear after connecting USB cable).

Attention:
If the interface has not been programmed: name, serial number and manufacturer's name, the device will be identified by Windows and MPW Editor 2 with the data programmed by FTDI (manufacturer USB integrated circuit) for example FT232R USB UART.

- Choose **File\Edit form**

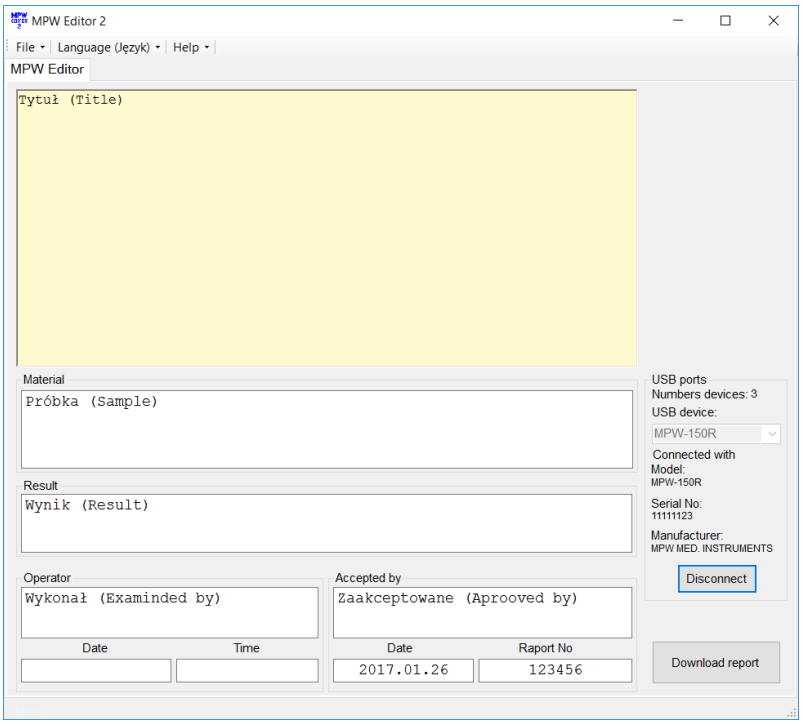


- In the „Tytuł (Title)” field, you can place any text, for example name of the laboratory, for later use in the report template.



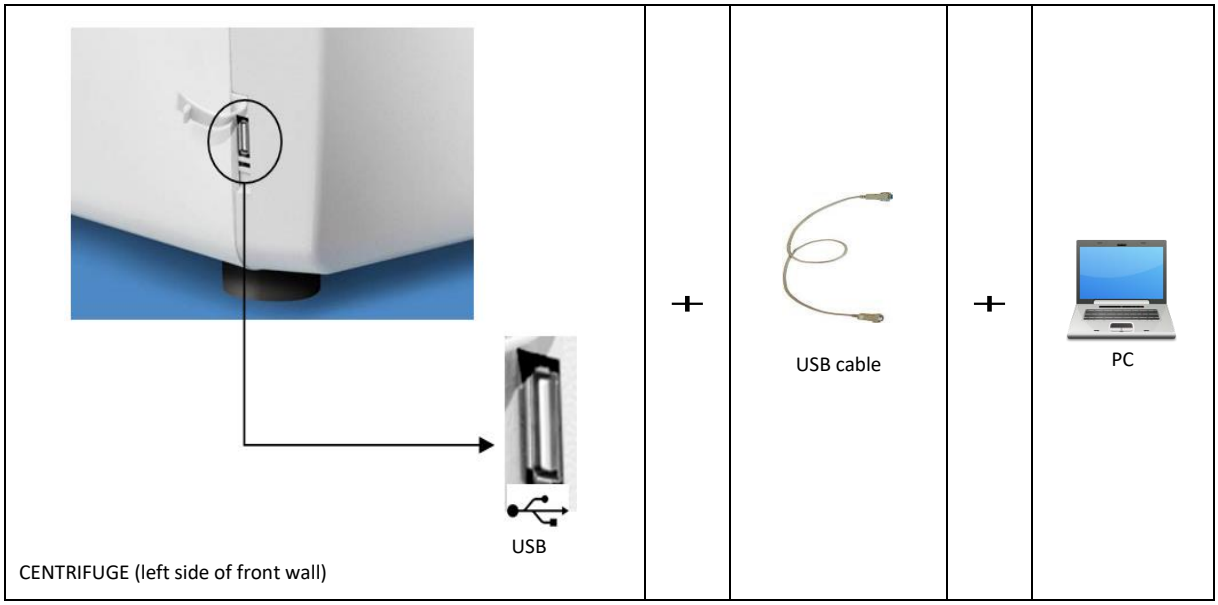
- Choose **File\Save form**.
- Ensure that USB device is selected from the list of devices.

- Press **Connect**. After successful communication, "PC" appears in the display.



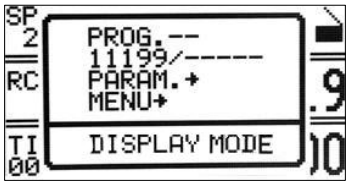
- Fill folds: „Material”, „Result”, „Operator”, „Accepted by”, „Report no” (optionally).
- When the centrifuging process is finished, press **Download the report**.
- When centrifuging process is completed, report will appear.
- Save report **(File/Save as)** or print it **(File/Print).**
- In order to get another report, press New test and press Download the report.
- After finishing the work, press **Disconnect** button (the "PC" disappears from the display of the centrifuge) and then closes MPW Editor 2.

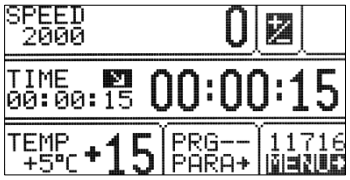
Connection diagram

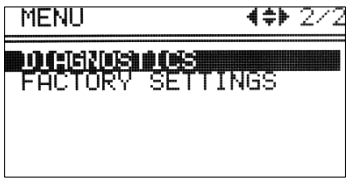


9 Menu

This chapter contains exemplary screens of MPW-260R centrifuge (screens for MPW-260 – without cooling – do not include temperature field).

<table>
<tr><td colspan="2">Simplified display</td></tr>
<tr><td> 
</td><td>▪ Press and hold

by 1 second.
▪ Choose MENU with ▲▼
▪ Press SET.
Execute points descripted follow (below Normal display mode description)</td></tr>
<tr><td colspan="2">Normal display</td></tr>
<tr><td> 
</td><td>▪ Press SET.
▪ With ▲▼◄► keys select MENU.
▪ Press SET.</td></tr>
<tr><td>

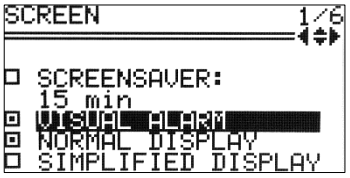

</td><td>▪ To navigate in MENU use ▲▼◄► keys.
▪ To enter menu press SET.</td></tr>
</table>

CONFIGURATION	centrifuge configuration
PASSWORD	password protection
LAST 10-CYCLES	10 last centrifugation cycles history
CYCLES	total working time of centrifuge, total number of working cycles
ROTOR RUNTIME	counting time of work and cycles amount for each rotor
CONTACT US	manufacturer's details
DIAGNOSTICS	error codes (service field)
FACTORY SETTINGS	restore factory settings

9.1 *Screen saver*

Setting time of screen saver	MENU/ CONFIGURATION / **SCREEN**
	▪ With ▲▼◄► keys select **SCREENSAVER**. ▪ Press **SET** and then ▼ and **SET** . ▪ With ▲▼ keys select demanded value from 1 to 60 minutes. ▪ Mark selection by pressing **SET.** ▪ Leave the menu by pressing **BACK**.

9.2 *Visual alarm*

Visual alarm	MENU/CONFIGURATION/ **SCREEN**
	▪ Via ▲▼ keys choose VISUAL ALARM ▪ Mark it by pressing **SET**. **VISUAL ALARM** cause blinking screen after ending of centrifuging or after message occurring.

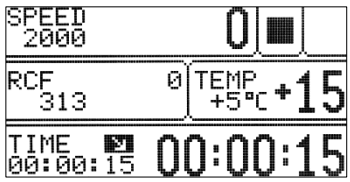
9.3 *Types of main screen*

To ensure optimal adaptation to the user's preferences, work is possible in two basic screen modes.

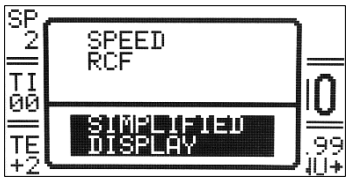
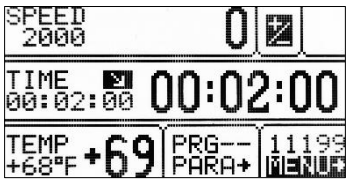
NORMAL DISPLAY - contains an expanded number of parameters visible on the display.
SIMPLIFIED DISPLAY - contains only the most important parameters visible on the display.

For each of the above modes, you can choose priority RPM display or RCF.

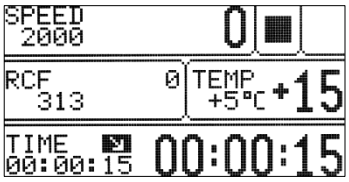
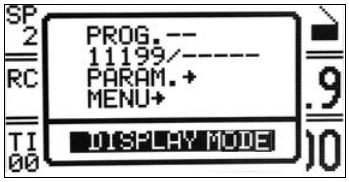
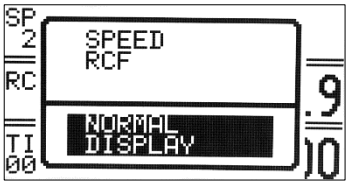
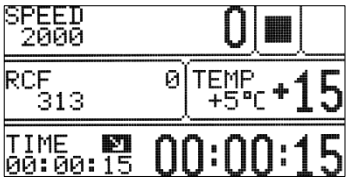
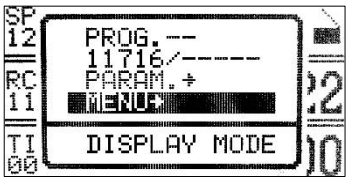
By default, the **SIMPLIFIED DISPLAY** is set

Types of main screen	
NORMAL DISPLAY	SIMPLIFIED DISPLAY
	
Switch between the **SPEED** (RPM) and **RCF** display priority modes	
▪ In the **NORMAL DISPLAY** mode, selecting the **SPEED** or **RCF** display mode is obtained by pressing and holding **BACK** for 1 sec. ▪ then use the ▲▼ buttons to select the desired mode (**SPEED** or **RCF**) and press **SET**.	▪ **In the SIMPLIFIED DISPLAY** mode, the selection of the **SPEED** or **RCF** display mode is obtained by pressing and holding the **BACK** key for 1 second. ▪ then use ▲▼ keys to select **DISPLAY MODE**, press **SET**, and then use ▲▼ keys to select the desired mode (**SPEED** or **RCF**) and press **SET**.

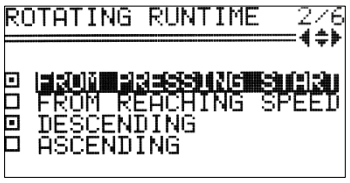
9.3.1 Switching the normal display to simplified display

Method I	
	▪ Press the **BACK** button for **1 sec.** to return to the basic display (a short menu is displayed on the screen), then: ▪ Via▲▼ keys select **SIMPLIFIED DISPLAY**. ▪ Press **SET**.
Method II	
 	▪ **Press SET** – appears. ▪ Via ▲▼◄► keys select **MENU.** ▪ Press **SET**. ▪ Via ▲▼ keys select **CONFIGURATION** tab. ▪ Press **SET**. ▪ Via ◄► keys select **SCREEN** tab. ▪ Via ▲▼ keys select **SIMPLIFIELD DISPLAY**. ▪ Press **SET**. ▪ Leave menu via **BACK** key.

9.3.2 Switching the simplified screen to normal display

Method I	
	▪ Press the **BACK** button for **1 sec.**
	▪ Via ▲▼ keys select **DISPLAY MODE** (highlighted). ▪ Press **SET**.
	▪ Then choose **NORMAL DISPLAY** via ▲▼ keys. ▪ Press **SET**.
Method II	
	▪ Press the **BACK** button for **1 sec.**
	▪ Via ▲▼ keys select **MENU** (highlighted). ▪ Press **SET**.
	▪ Via ▲▼ keys select **CONFIGURATION** tab. ▪ Press **SET**. ▪ Via ◄► keys select **SCREEN** tab. ▪ Via ▲▼ keys select **NORMAL DISPLAY**. ▪ Press **SET**. ▪ Leave menu via **BACK** key.

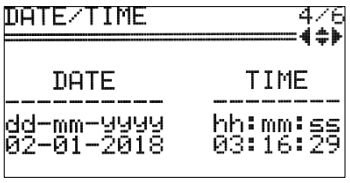
9.4 *Rotating runtime*

Way of time counting	MENU/CONFIGURATION/ **ROTATING RUNTIME**
	▪ Via ▲▼ choose demanded option. ▪ Mark it by pressing **SET**.
Counting from: From pressing start → COUNTING SINCE ROTOR IS IDENTIFIED From reaching speed → COUNTING FROM ASSIGNED SPEED	
Presenting mode: Descending → COUNTING DOWN Ascending → COUNTING UP	

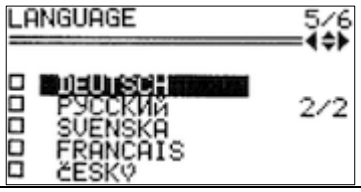
9.5 *Buzzer*

Switching ON/OFF short audible signals accompanying every pressing of any key. Switching ON/OFF signals after centrifuging.	MENU/ CONFIGURATION /**BUZZER**
	▪ With ▲▼ keys select demanded option. ▪ Mark selection by pressing **SET**. A continuous alarm means the emission of short beeps after the end of the spin, until the message about the end of the work cycle is deleted.
▪ Warning signals are always switched on.	

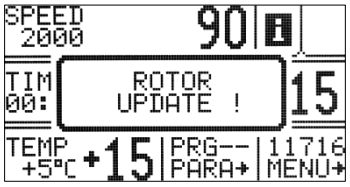
9.6 *Date/time*

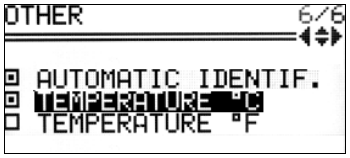
Setting up time and date	MENU/ CONFIGURATION /**DATE/TIME**
	▪ Press **SET**. ▪ Via ◄► keys choose demanded value. ▪ Via ▲▼ keys change chosen value. ▪ Confirm by pressing **SET**. ▪ Repeat above steps for other values. ▪ Press **BACK.**
▪ Set date and time are still active even after restart of centrifuge.	

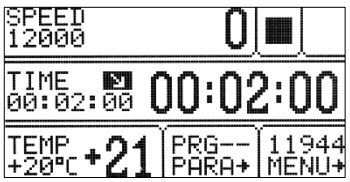
9.7 *Language*

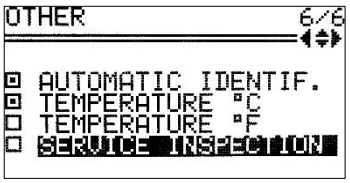
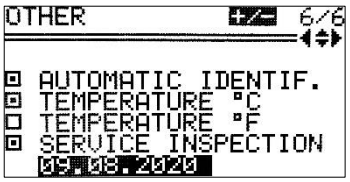
Changing menu language	MENU / CONFIGURATION / **LANGUAGE**
  	▪ Via ▲▼ keys choose demanded menu language ▪ Mark it by pressing **SET.**

9.8 *Other*

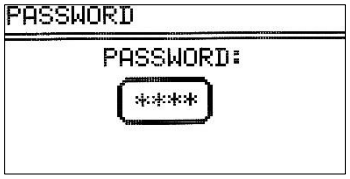
Rotor automatic identification	MENU / CONFIGURATION / **OTHER**
  	Thanks to the automatic rotor identification, the centrifuge automatically identifies the rotor in the chamber. Rotor identification is indicated by the message. When the function is deactivated, it is necessary to manually select the desired rotor as described in “6.6. Rotor and bucket choosing”. The AUTOMATIC IDENTIF. is turned on by default. To enable/unable the function: ▪ Via ▲▼ keys choose ☐ AUTOMATIC IDENTIF. ▪ Press **SET** (☐ change to ⊡ or conversely). Autoidentification is not active for work in the loaded program mode.

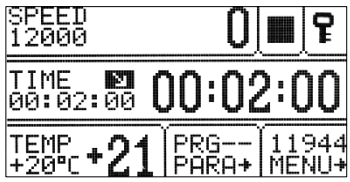
Choice of temperature unit	MENU / CONFIGURATION / **OTHER**
	The TEMPERATURE in °C is turned on by default. To change the temperature unit: ▪ Via ▲▼ keys select unit ▪ Confirm by pressing **SET**.

TEMPERATURE IN °C	**TEMPERATURE IN °F**
	

Service inspection	MENU / CONFIGURATION / **OTHER**
  	There is a possibility to turn on a message reminding user to perform the inspection, with the option to define the date of the inspection when the message will be displayed. To enable/unable the function: ▪ Via ▲▼ keys choose ☐ SERVICE INSPECTION. ▪ Press **SET** (☐ change to ⊡ or conversely). A new field will appear with the date of the inspection (on that day message will be displayed). To edit the date: ▪ Via ▲▼ keys select date field. ▪ Press **SET**. ▪ Via ▲▼◄► keys choose value. ▪ Confirm by pressing **SET**.

9.9 *Password*

<table>
<tr><td>Setting up password</td><td>MENU / PASSWORD</td></tr>
<tr><td colspan="2">To prevent from an unauthorized use, a PASSWORD can be set.
Note: No PASSWORD is set by default.
The PASSWORD can be set as follows when the rotor is at a standstill.</td></tr>
<tr><td> 

</td><td>▪ Press SET. Icon +/- starts blinking.
▪ With ◄► keys set the valid place of the PASSWORD. With ▲▼ keys set correct value.
▪ Repeat above steps for all places.
▪ Press SET.</td></tr>
<tr><td>
</td><td>▪ As a confirmation repeat instructions described above.</td></tr>
<tr><td colspan="2">When the PASSWORD is set, the Key sign is displayed in the CODE zone. It is also displayed in the main menu (lower right corner of the screen).</td></tr>
<tr><td>
</td><td> 
</td></tr>
<tr><td colspan="2">▪ From then on, access to the MENU is possible after entering the password.
▪ In case of incorrect password, it will show message: ACCESS DENIED!</td></tr>
<tr><td colspan="2">▪ To delete the PASSWORD, “0000” must be set (after previously entering current password). If the PASSWORD is forgotten, the emergency code “7654” should be used to clear password and remove all locks.</td></tr>
</table>

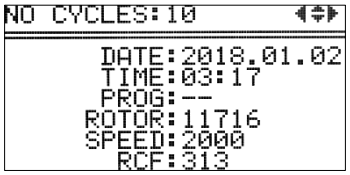
Setting up locks	
	▪ With ▲▼ keys choose a lock. ▪ Mark a lock by pressing **SET**. ▪ Repeat above steps for desired locks. ▪ Leave menu with **BACK** key.
	▪ In the LOCK menu, press ◄ and then SET.

	disabled*	**description**
SAVE PROGRAM	SAVE button	no programs can be saved
DELETE PROGRAM	DELETE button	no programs can be deleted saving programs on position where one was already stored is disabled
CHANGE PARAMETERS	fields: SPEED RCF TIME TEMP PROG— ——— / ——— PARAM PROG	parameters can not be modified
LOAD PROGRAM	LOAD button	no programs can be called up
START KEY	START key	centrifugation can not be started

* Executing disabled procedures is only possible after entering the correct

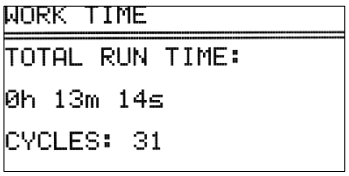
10 CYCLES

9.10 *Last 10 cycles*

Information concerning parameters of last 10 centrifuging cycles.	MENU / **LAST 10 CYCLES**
	▪ Number of cycle can be changed by ◄► keys. ▪ The list can be scrolled using ▲▼ keys. ▪ To exit press **SET/BACK** key

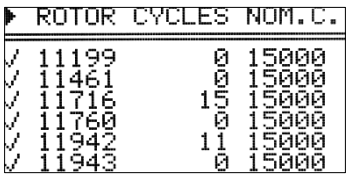
WORK TIME

9.11 *Work time*

Total working time of centrifuge, and quantity of working cycles.	MENU / **WORK TIME**
	In the **WORK TIME** menu, the following statistics are displayed: ▪ total working (centrifugation) time ▪ working cycles counter

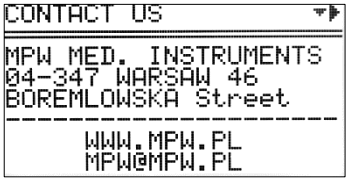
ROTOR RUNTIME

9.12 *Rotor runtime*

Information about the time of centrifuging and of the quantity of the working cycles of each rotor. The table also contains icons warning of the duty of execution of validation.	MENU / **ROTOR RUNTIME**
	CYCLES – the number of centrifuging the rotor has performed, NOM.C. – permissible number of centrifuging for the rotor. ▪ The list can be scrolled using ▲▼ keys. ▪ To exit press **BACK** key. Symbols: ✓ – more than 100 cycles left !✓! – less than 100 cycles left ! – worn rotor **It is not allowed to use rotors marked as worn.**

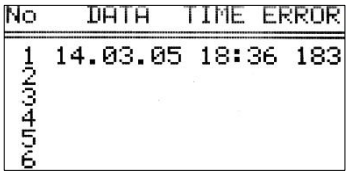
CONTACT US

9.13 *Contact us*

Information about the type of the centrifuge, firmware version, and contact details.	MENU / **CONTACT US**
	▪ The list can be scrolled using ▲▼ keys. ▪ To exit press **BACK** key.

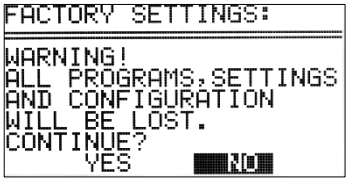
DIAGNOSTICS

9.14 *Diagnostics*

Information about errors arisen in working of the centrifuge (for service).	MENU / **DIAGNOSTICS**
	**Intended for service purposes!**

FACTORY SETTINGS

9.15 *Factory settings*

Restoring factory settings.	MENU/ **FACTORY SETTINGS**
All settings of user programs will be deleted.	
	▪ Via ◄► keys choose **YES** or **NO**. ▪ Confirm by pressing **SET**.

10 Maintenance

10.1 *Cleaning of the centrifuge*

Pull the mains plug before cleaning.

Before any cleaning or decontamination process other than that is recommended by the manufacturer, the user has to ask the manufacturer if the planned process does not damage the device

For cleaning, water with soap or other water soluble **mild detergent** shall be used.

One should avoid corrosive and aggressive substances. It is prohibited to use alkaline solutions, inflammable solvents or agents containing abrasive particles.

Do not lubricate the centrifuge motor shaft.

The unused centrifuge should have cover opened.

Once a week

- Using wiping cloth, remove condensate or residues of the products from the rotor chamber.

Once a month

- Check the rotor clamping thread. In case of damage, replaced it.
- Check the centrifuging chamber whether it is damaged. In case of damage it can not be longer put into operation. Notify authorized service workshop.

10.2 *Maintenance of centrifuge elements*

The rotor pins shall be always lubricated with petroleum jelly. In this way, the uniform deflection of the buckets and quiet centrifuge operation is ensured.

Cleaning of the accessories

In order to ensure safe operation one shall carry out in **regular** way periodical maintenance of the accessories.

Rotors, buckets and round carriers have to withstand high stresses originating from the centrifugal force. Chemical reactions as well as corrosion (combination of variable pressure and chemical reactions) can cause destruction of metals. Hard to observe surface cracks increase gradually and weaken material without visible symptoms.

- In case of observation of surface damage, crevice or other change, as well as the corrosion, the given part (rotor, bucket, etc.) shall be immediately replaced.

Clamping rotor, containers and reducer inserts must be cleaned regularly to prevent corrosion.

	Cleaning of the accessories shall be carried out outside of the centrifuge **once every week** or still better after each use. For cleaning them one should use neutral agent of pH value 6÷8. It is forbidden to use alkaline agent of **pH > 8**. Then, those parts shall be dried using soft fabric or in the chamber drier at ca. 50°C. Angle rotor should be placed on a fabric with holes facing down, for effective drying. Do not use bleach on plastic parts of the rotor. In this way, the useful service life of the device is substantially increased and susceptibility to corrosion is diminished. Accurate maintenance increases the service life as well and protects against premature rotor failures. Do not use bleach on plastic parts of the rotor. According to laboratory standards, minimize the immersion time in each solution. Especially prone to the corrosion are parts made of aluminium. Corrosion and damages resulting from insufficient maintenance could not be subject of claims lodged against the manufacturer. The unused rotor should have the lid removed.

HS accessories maintenance.

	Check the general condition of seals. Make sure that rubber O-rings are lightly coated with silicone grease. Use high vacuum grease, e.g. type „C" by LUBRINA. ▪ In order to maintain hermetic sealing, it is recommended to replace the sealing rings after each autoclaving. ▪ Store hermetically sealed rotors and buckets with the lids removed.

10.3 *Sterilization*

Plastics - legend to abbreviations

PS	polystyrene	**ECTFE**	ethylene/chlorotrifluoroethylene
SAN	styrene-acrylonitrile	**ETFE**	ethylene/tetrafluoroethylene
PMMA	polymethyl methacrylate	**PTFE**	polytetrafluoroethylene
PC	polycarbonate	**FEP**	tetrafluoroethylene/perfluoropropylene
PVC	polyvinyl chloride	**PFA**	tetrafluoroethylene/perfluoroalkylvinylether
POM	acetal polyoxymethylenel	**FKM**	fluorcarbon rubber
PE-LD	low density polyethylene	**EPDM**	ethylene propylene diene
PE-HD	high density polyethylene	**NR**	natural rubber
PP	polypropylene	**SI**	silicon rubber
PMP	polymethylpentene		

One can use all standard disinfectants. Centrifuges and devices are made of different materials, one should consider their variety.

	radiation β radiation γ 25 kGy	**C_2H_4O** (ethylene oxide)	**formalin, ethanol**
PS	●	○	●
SAN	○	●	●
PMMA	●	○	●
PC	●	●	●
PVC	○	●	●
POM	●	●	●
PE-LD	●	●	●
PE-HD	●	●	●
PP	●	●	●
PMP	●	●	●
ECTFE, ETFE	○	●	●
PTFE	○	●	●
FEP, PFA	○	●	●
FKM	○	●	●
EPDM	○	●	●
NR	○	●	●
SI	○	●	●

● may be used

○ cannot be used

In the centrifuge, disinfectants and cleaning agents generally used in medical care should be used (e.g. *Aerodesina-2000, Lysoformin 3000, Melseptol, Melsept SF, Sanepidex, Cutasept F*).

10.3.1 Autoclaving

- Rotors, buckets and round carriers can be sterilized in autoclave with temperature 121°C during 20 min (215 kPa), unless otherwise specified in the OPTIONAL ACCESSORY.
- During sterilization (autoclaved) by means of steam one should consider temperature resistance of individual materials.
- Deformation of the accessories (carriers or lids made of plastic) may occur during autoclaving.
- Do not autoclave disposable materials (e.g. tubes, cyto-container).
- The life of the accessory depends on the frequency of autoclaving and use.
- Autoclaving reduce lifespan of plastic components. They should be replaced if any signs of damage are visible, including a change in colour or shape or when leakage etc.
- Pressure in closed containers can cause plastic deformation or explosion.
- Prior to autoclaving the rotors and accessories, thoroughly wash and rinse with distilled water.
- Never exceed the permissible autoclaving temperature and time.
- If you want to keep the hermetic seals, replace the sealing rings after each autoclave.

Chemical resistance of plastics

	autoclaving 121 °C, 20 min		**autoclaving** 121 °C, 20 min
PS	○	**PMP**	●
SAN	○	**ECTFE, ETFE**	●
PMMA	○	**PTFE**	●
PC	●	**FEP, PFA**	●
PVC	○[1)]	**FKM**	●
POM	●	**EPDM**	●
PE-LD	○	**NR**	○
PE-HD	○	**SI**	●
PP	●		

● may be used

○ cannot be used

1) Except PVC hoses which are resistant to the steam sterilization in the temperature 121°C.

10.4 *Chemical resistance*

Chemical resistance of plastics

	aldehydes	cyclic alcohols	esters	ether	ketones	strong or concentrated acids	weak or diluted acids	oxidizing substances	cyclic hydrocarbons	ahs	haloid hydrocarbons	alkalis
PS	○	●	○	○	○	○/●	○/●	○	○	○	○	●
SAN	○	●	○	○	○	○	○/●	○	○	○	○	●
PMMA	○/●	●	○	○	○	○	○/●	○	○/●	○	○	○
PC	○/●	●	○	○	○	○	○/●	○	○/●	○	○	○
PVC	○	●	○	○	○	●	●	○	●	○	○	●
POM	○/●	●	○	●	●	○	○	○	●	●	●	●
PE-LD		●	●	●	○/●	●	●	○	●	●	●	●
PE-HD	●	●	○/●	○/●	○/●	●	●	○	●	○/●	○/●	●
PP	●	●	○/●	○/●	○/●	●	●	○	●	○/●	○/●	●
PMP	○/●	●	○/●		○/●	●	●	○	○/●	○	○	●
ECTFE ETFE	●	●	●	●	○	●	●	●	●	●	●	●
PTFE FEP PFA	●	●	●	●	●	●	●	●	●	●	●	●
FKM	●	○	○	○	○	○	●	○/●	○/●	○/●	○/●	○/●
EPDM	●	●	○/●	○	○/●	●	●	○/●	○	○	○	●
NR	○/●	●	○/●	○	○	○	○/●	○	○	○	○	●
SI	○/●	●	○/●	○	○	○	○/●	○	○	○	○	○/●

●	very good	Permanent action of the substance does not cause damage through 30 days. The material is able to be resistant through years
○/●	good to limited	Continuous action of the substance causes insignificant and partly reversible damage through the period of 7-30 days (e.g. puffing up, softening, reduced mechanical durability, discolouring).
○	limited	The material should not have the continuous contact with the substance. The immediate occurrence of damage is possible (e.g. the loss of mechanical durability, deformation, discolouring, bursting, dissolving).

Rubber inserts shall be exactly cleaned or possibly replaced. Centrifuges and accessories are made of different materials.

Do not use bleach on plastic parts of the rotor.

	DANGER! MPW accessorises are not biotight. For centrifuging infectious materials, it is necessary to use hermetically closed tubes meeting demands of biotightness, in order to prevent germs migration into the centrifuge and beyond it.
	User is responsible for proper disinfections of the centrifuge, if some dangerous material was spilled inside or outside of the centrifuge. During the above mentioned works one must wear safety gloves.

11 Troubleshooting

Majority of faults could be removed by switching the centrifuge OFF and then ON. After switching the centrifuge ON, there shall be displayed parameters of the recently implemented program and sound signals comprising four successive tones shall be generated. In case of short-duration power failure the centrifuge terminates the cycle and displays PROGRAM ERROR code.

problem	question	remedy
Centrifuge does not start	*Is supply cable plugged into mains?*	*Plugs supply cable correctly.*
	Is master switch ON?	*Switch ON power supply.*
Motor error is displayed		Call service.
Centrifuge does not start (indications are proof for cycle in progress and motor does not start)	*Is* ▶ *symbol displayed?*	Wait till rotor stops and the ▶ symbol goes off.
	Is ◥ *symbol displayed?*	Close cover. ◥ symbol must switch off.
	Is ⋮ *symbol blinking?*	Centrifugation cycle in progress, press **STOP** key or wait till cycle ends.
Centrifuge does not accelerate *(unbalance error)*	*Unequal rotor load.*	Centrifuge load shall be balanced.
	Inclined centrifuge.	Centrifuge shall be levelled.
	Faulty drive (mechanical damage).	Call service.
	Was centrifuge displaced during operation.	Switch ON the centrifuge again after opening and closing the cover.
(motor error)	*After stopping error rotor message is displayed*	Check if rotor number in started program is consistent with the number of the rotor installed in the centrifuge. Check rotor status (if there are coding magnets inserted)
	Centrifuge does not recognize the rotor and does not stop.	Switch the centrifuge OFF, then ON and check correctness of loaded program
It is not possible to open the cover	⋮ *symbol on the display is blinking, after pressing COVER key single tone is audible*	Rotor is still rotating. Wait for stopping of the rotor and displaying of the ■ symbol.
	The sensor is connected correctly, and the error is still applying.	Call service.
Mains failure during run	*The message will be displayed on the display about the decay of tension.*	Wait for stopping of the rotor, clear the error by pressing the SET key.
Temperature sensor error	*The overheating message will be displayed.*	Switch the centrifuge OFF, then ON.
		Call service.
Error of the exceeding the temperature (50°C) in the chamber	*The overheating message will be displayed.*	Open the cover. Wait for the centrifuge to cool down.

11.1 *Messages*

Screen messages that may occur during operation.

MESSAGE	EXPLANATION
"SPEED OF ROTOR" "IDENTIFICATION <> 90 RPM"	Please try start centrifuging again, if error still occur, contact manufacturer's authorized service.
"IMBALANCE FAST STOP !" "PLEASE REMOVE CAUSE" "THEN RESTART"	Rotor is not balanced correctly, please balance rotor.
"NO ROTOR OR IDENTIFICATION" "SENSOR DAMAGED !"	Make sure, is rotor mounted in the centrifuge chamber. If it is right contact manufacturer's authorized service.
"INCORRECT ROTOR NUMBER !"	Change rotor number in centrifuge settings or use autoidentification.
"WRONG DIRECTION OF ROTATION" "OR UNKNOWN ROTOR !"	Make sure if correct rotor for centrifuge is mounted. List of accessories is described in chapter 15.
"PLEASE CLOSE THE LID" "HAND !"	Necessity of manually closing the lid.
"ROTOR STOPPING !" "Please wait..."	Initializing after mains failure with rotating rotor, wait until rotor stop.

Emergency messages

In case of emergency messages (centrifuge is not working properly) contact the manufacturer's authorized service centre.

MESSAGE
"OVERHEATING MOTOR !" "INVERTER ERROR !"
"INVERTER SERIAL BUS ERROR !"
"TEMPERATURE SENSOR ERROR"
"PRESSURE CONTROL FAILURE!"
"OPENING COVER in RUN!"
"SPEED METER ERROR"
"I2C BUS ERROR"
"OVERHEATING CENTRIFUGE !"
"ROTOR OVERSPEED !"
"COVER LOCK MALFUNCTION !"

11.2 *Emergency cover release*

	EMERGENCY COVER RELEASE In case of e.g. mains failure it is possible to open cover manually. At first, one must be sure that rotor is not in the move (use inspection glass). On the right-hand side of the casing there is a lock. Insert emergency opening key (18640) into the lock and turn it counterclockwise. ***CAUTION!*** *It is not allowed to emergency lid releasing when rotor is running! One must be sure that rotor is not in the motion (use inspection glass).*

12 Guarantee

Manufacturer grants to the Buyer the guarantee on conditions specified in the Guarantee Certificate. Buyer forfeits the right to guarantee repair when using the device inconsistently with the User manual provisions, when damage results from the User's fault.

Repairs should be carried out in authorized service workshops, granted with the MPW Certificate.

The centrifuge shall be sent to repair after decontaminating disinfections. Information about authorized service workshops could be obtained from the Manufacturer.

	▪ Guarantee period amounts to 24 months (unless otherwise specified in the purchase documents). ▪ Guarantee conditions are described in guarantee card. ▪ The service life of the centrifuge specified by the manufacturer amounts to 10 years. ▪ After 24 months from the start of the warranty period (date of purchase), a technical inspection of the centrifuge should be carried out (validation) by an authorized service of the manufacturer. Subsequent inspections should be carried out at annual intervals. ▪ Maximum period of storage of not used centrifuge amounts to 1 year. After this period, a service authorized by manufacturer should carry out technical inspection of the centrifuge. ▪ Manufacturer reserves the right to make technical changes in manufactured products.

13 Transport and storage

	CAUTION! Due to the heavy weight of the device, lifting and carrying it may cause injury to the spine.

- Store the device only in a closed and dry room.
- Remove rotor from centrifuge before transport.
- Lift and carry with the adequate number of people.
- Use transport equipment.
- Use the original packaging and transport protection for transport.

Transport and storage conditions.

	Storage (in the package)	**Storage (without the package)**	**Transport**
Temperature	-25 ÷ +55 °C	-5 ÷ +45 °C	-25 ÷ +60 °C (general) -20 ÷ +55 °C (air)
Relative humidity	10 ÷75 %	10 ÷75 %	10 ÷75 %
Pressure	70 ÷ 106 kPa	70 ÷ 106 kPa	30 ÷ 106 kPa

14 Disposal

When you are disposing the device, the respective statutory rules must be observed.

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 8th group (medical devices) and is categorized in 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.

15 Manufacturer’s info

"MPW MED. INSTRUMENTS" SPÓŁDZIELNIA PRACY
Boremlowska 46 Street
04-347 Warsaw
tel. (+48) 22 610 56 67 (sales department - POLAND)
(+48) 22 879 70 46 (sales department - outside POLAND)
(+48) 22 610 81 07 (service)
fax: (+48) 22 610 55 36
e-mail: mpw@mpw.pl
website: www.mpw.pl

000042924	-	number of entry in the Waste Database
PL/CA01–01782	-	identification number given by Office for Registration of Medicinal Products, Medical Devices and Biocidal Products.

Distributor’s info

DISTRIBUTOR:

16 ANNEXES

A. Wyposażenie dodatkowe/Optional accessories

MPW-260/R/RH

WIRNIK / ROTOR

PARAMETRY WIRNIKA / ROTOR PARAMETERS

POJEMNIK/BUCKET

WKŁADKA / ADAPTER

[liczba probówek na wirnik/tubes per rotor] PROBÓWKA / TUBE

11199

RPM 18000, RCF 24270, Rmax 67, ⌀ 45

bez pojemnika/without bucket

14084

[12] 15127 0,5 ml probówka PCR (7,8 x 31 mm)
0,5 ml PCR tube (7,8 x 31 mm)

14126

[12] 15124 0,4 ml probówka PCR (5,7 x 48,6 mm)
0,4 ml PCR tube (5,7 x 48,6 mm)

14133

[12] 15125 0,2 ml probówka PCR (6 x 21,6 mm)
0,2 ml PCR tube (6 x 21,6 mm)

bez wkładki/without adapter

[12] * 2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

11213

RPM 5500, RCF 4227, Rmax 125, ⌀ 30

13276

14035

[8] 15046 14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt®
14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®

[8] 15048 15 ml Thermo Nalgene® (16 x 113 mm)
15 ml Thermo Nalgene® (16 x 113 mm)

[8] 15053 10 ml probówka z pokrywką (16 x 106 mm)
10 ml tube with cap (16 x 106 mm)

[8] 15118 10 ml probówka szklana (16 x 100 mm)
10 ml glass tube (16 x 100 mm)

14036

[8] * BD Vacutainer® (13 x 100 mm), (4-7 ml)

[8] * Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)

[8] 15054 6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt®
6 ml tube with cap (11,5 x 92 mm), Sarstedt®

[8] 15119 7 ml probówka szklana (12 x 100 mm)
7 ml glass tube (12 x 100 mm)

14043

[8] * Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)

[8] * Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)

[8] * Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)

[8] 15120 5 ml probówka szklana (12 x 75 mm)
5 ml glass tube (12 x 75 mm)

[8] 15419 5 ml probówka z korkiem (12 x 85 mm), Sarstedt®
5 ml tube with cap (12 x 85 mm), Sarstedt®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

		14071
[8]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[8]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[8]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[8]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[8]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®
		14073
[8]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[8]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[8]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[8]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
		14089
[8]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
		14248
[8]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[8]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
		14089+14868
[8]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®
[8]	*	5 ml probówka z korkiem zakręcanym (17 x 66 mm), Eppendorf® 5 ml tube with screw cap (17 x 66 mm), Eppendorf®
		bez wkładki/without adapter
[8]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[8]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[8]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[8]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11
		13278+17151
		14035
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
		14036
[8]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[8]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
		14043
[8]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[8]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[8]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®
		14071
[8]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[8]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[8]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[8]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[8]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

14073

[8]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[8]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[8]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[8]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)

14089

[8]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

14248

[8]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[8]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)

14089+14868

[8]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®

bez wkładki/without adapter

[8]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[8]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[8]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[8]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11

11216

RPM 14000, RCF 19064, Rmax 87, ⌀ 45

bez pojemnika/without bucket

bez wkładki/without adapter

[12]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

11217

RPM 6000, RCF 4226, Rmax 105, ⌀ 30

13080

14082

[10]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[10]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[10]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[10]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[10]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

bez wkładki/without adapter

[10]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[10]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[10]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[10]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[10]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[10]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[10]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[10]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[10]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

13081

14082

[10]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[10]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[10]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[10]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[10]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[10]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)

bez wkładki/without adapter

[10]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[10]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[10]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11461

RPM 15100, RCF 21158, Rmax 83, ⌀ 45

bez pojemnika/without bucket

14084

[24]	15127	0,5 ml probówka PCR (7,8 x 31 mm) 0,5 ml PCR tube (7,8 x 31 mm)

14126

[24]	15124	0,4 ml probówka PCR (5,7 x 48,6 mm) 0,4 ml PCR tube (5,7 x 48,6 mm)

14133

[24]	15125	0,2 ml probówka PCR (6 x 21,6 mm) 0,2 ml PCR tube (6 x 21,6 mm)

bez wkładki/without adapter

[24]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

11462

RPM 14000, RCF 18188, Rmax 83, ⌀ 45

bez pojemnika/without bucket

14084

[36]	15127	0,5 ml probówka PCR (7,8 x 31 mm) 0,5 ml PCR tube (7,8 x 31 mm)

14126

[36]	15124	0,4 ml probówka PCR (5,7 x 48,6 mm) 0,4 ml PCR tube (5,7 x 48,6 mm)

14133

[36]	15125	0,2 ml probówka PCR (6 x 21,6 mm) 0,2 ml PCR tube (6 x 21,6 mm)

bez wkładki/without adapter

[36]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

11501

RPM 4500, RCF 3011, Rmax 133, ⌀ 30

13080

14082

[30]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[30]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[30]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[30]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[30]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

bez wkładki/without adapter

[30]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[30]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[30]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[30]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[30]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[30]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[30]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[30]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[30]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

13081

14082

[30]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[30]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[30]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[30]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[30]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[30]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)

bez wkładki/without adapter

[30]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[30]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[30]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11715

RPM 14000, RCF 15558, Rmax 71, ⌀ 30

bez pojemnika/without bucket

bez wkładki/without adapter

[10]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11716

RPM 14000, RCF 15339, Rmax 70, ⌀ 45

bez pojemnika/without bucket

bez wkładki/without adapter

[4]	15131	4 x 0,2 ml probówki szeregowe PCR-strip (10,2 x 37,2 mm) 4 x 0,2 ml PCR strip (10,2 x 37,2 mm)
[4]	15122	8 x 0,2 ml probówki szeregowe PCR-strip (10,2 x 72,4 mm) 8 x 0,2 ml PCR strip (10,2 x 72,4 mm)
[32]	15125	0,2 ml probówka PCR (6 x 21,6 mm) 0,2 ml PCR tube (6 x 21,6 mm)
[4]	15130	8 x 0,2 ml probówki szeregowe PCR strip (7,3 x 77,2 mm) 8 x 0,2 ml PCR strip (7,3 x 77,2 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

11718

RPM 6300, RCF 5014, Rmax 113, ∡ 30

		13719
		14024
[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
		14188
[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)
		14196
[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)
		14224
[4]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
		14226
[4]	*	50 ml probówka z dnem stożkowym z rantem (30 x 115 mm), Greiner® 50 ml tube, conical bottom, skirted (30 x 115 mm), Greiner®
		14189+14188
[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[4]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11
		14190+14188
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
		14192+14188
[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)

11740

RPM 5500, RCF 4058, Rmax 120, ∡ 30

		13080
		14082
[12]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[12]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[12]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[12]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[12]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

bez wkładki/without adapter

[12]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[12]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[12]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[12]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[12]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[12]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[12]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[12]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[12]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

13081

14082

[12]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[12]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[12]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[12]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[12]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[12]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)

bez wkładki/without adapter

[12]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[12]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[12]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11741

RPM 6000, RCF 4226, Rmax 105, ∡ 30

13080

14082

[8]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[8]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[8]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[8]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[8]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

bez wkładki/without adapter

[8]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[8]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[8]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[8]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[8]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

13081

14082

[8]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[8]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[8]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[8]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[8]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[8]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

bez wkładki/without adapter

[8]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[8]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[8]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11743

RPM 4500, RCF 2717, Rmax 120, ⌀ 30

13329

14255

[12]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[12]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

14256

[12]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[12]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[12]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[12]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)

bez wkładki/without adapter

[12]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[12]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®
[12]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[12]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®

11744

RPM 4500, RCF 2830, Rmax 125, ⌀ 30

13276

14035

[10]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[10]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[10]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[10]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)

14036

[10]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[10]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[10]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[10]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

14043

[10]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[10]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[10]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[10]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[10]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

		14071
[10]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[10]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[10]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[10]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[10]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®
		14073
[10]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[10]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[10]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[10]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[10]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[10]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[10]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[10]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
		14089
[10]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
		14248
[10]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[10]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
		14089+14868
[10]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®
[10]	*	5 ml probówka z korkiem zakręcanym (17 x 66 mm), Eppendorf® 5 ml tube with screw cap (17 x 66 mm), Eppendorf®
		bez wkładki/without adapter
[10]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[10]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[10]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[10]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11

11745

RPM 5000, RCF 3354, Rmax 120, ⌀ 30

13080

		14082
[24]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[24]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[24]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[24]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[24]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

bez wkładki/without adapter

[24]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[24]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[24]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[24]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[24]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[24]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[24]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[24]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[24]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

13081

14082

[24]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[24]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[24]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[24]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[24]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[24]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)

bez wkładki/without adapter

[24]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[24]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[24]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

11746

RPM 6000, RCF 4427, Rmax 110, ⌀ 30

13276

14035

[6]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[6]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[6]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[6]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)

14036

[6]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[6]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[6]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[6]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)

14043

[6]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[6]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[6]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[6]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[6]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14071

[6]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[6]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[6]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[6]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[6]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

14073

[6]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[6]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[6]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[6]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[6]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[6]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[6]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)

14089

[6]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

14248

[6]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[6]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)

14089+14868

[6]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®
[6]	*	5 ml probówka z korkiem zakręcanym (17 x 66 mm), Eppendorf® 5 ml tube with screw cap (17 x 66 mm), Eppendorf®

bez wkładki/without adapter

[6]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[6]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[6]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[6]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11

11760

RPM 14600, RCF 20257, Rmax 85, ⍙ 45

bez pojemnika/without bucket

14084

[24]	15127	0,5 ml probówka PCR (7,8 x 31 mm) 0,5 ml PCR tube (7,8 x 31 mm)

14126

[24]	15124	0,4 ml probówka PCR (5,7 x 48,6 mm) 0,4 ml PCR tube (5,7 x 48,6 mm)

14133

[24]	15125	0,2 ml probówka PCR (6 x 21,6 mm) 0,2 ml PCR tube (6 x 21,6 mm)

bez wkładki/without adapter

[24]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
[24]	*	2 ml probówki z filtrem - spin columns (10,8 x 46 mm) 2 ml spin columns (with filter) (10,8 x 46 mm); [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

11943

RPM 12000, RCF 13684, Rmax 85, ⍙ 45

bez pojemnika/without bucket

bez wkładki/without adapter

[20]	*	1,6 ml probówka Cryo (12,3 x 46,5 mm) 1,6 ml Cryo tube (12,3 x 46,5 mm)
[20]	*	1,8 ml probówka Cryo (12,3 x 46,5 mm) 1,8 ml Cryo tube (12,3 x 46,5 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

11944

RPM 12000, RCF 13684, Rmax 85, ⍙ 45

bez pojemnika/without bucket

bez wkładki/without adapter

[6]	*	5 ml probówka z korkiem zakręcanym (17 x 66 mm), Eppendorf® 5 ml tube with screw cap (17 x 66 mm), Eppendorf®
[12]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®

12183

RPM 4000, RCF 2486, Rmax 139, ⍙ 90

13182

14024

[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

14181

[20]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[20]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[20]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[20]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[20]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14186

[16]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[16]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[16]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[16]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[16]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[16]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[16]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[16]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[16]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[16]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[16]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[16]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[16]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14187

[16]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[16]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[16]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[16]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[16]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[16]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[16]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[16]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®

14188

[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)

14194

[12]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

14196

[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

		14224
[4]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
		14226
[4]	*	50 ml probówka z dnem stożkowym z rantem (30 x 115 mm), Greiner® 50 ml tube, conical bottom, skirted (30 x 115 mm), Greiner®
		14189+14188
[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[4]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11
		14190+14188
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
		14192+14188
[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)
		13195
		14082
[8]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[8]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[8]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[8]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
		bez wkładki/without adapter
[8]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[8]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[8]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[8]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[8]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
		13265
		bez wkładki/without adapter
[4]	*	Arthrex ACP®
		13266
		14043
[4]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[4]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[4]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®
		14071
[4]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[4]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®
		14089
[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
		14248
[4]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

14089+14868

[4]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®
[4]	*	5 ml probówka z korkiem zakręcanym (17 x 66 mm), Eppendorf® 5 ml tube with screw cap (17 x 66 mm), Eppendorf®

bez wkładki/without adapter

[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®

13184+17185

14024

[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

14181

[20]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[20]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[20]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[20]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[20]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14186

[16]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[16]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[16]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[16]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[16]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[16]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[16]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[16]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[16]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[16]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[16]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[16]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[16]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14187

[16]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[16]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[16]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[16]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[16]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[16]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[16]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[16]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®

14188

[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)

14194

[12]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

14196

[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)

14224

[4]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®

14226

[4]	*	50 ml probówka z dnem stożkowym z rantem (30 x 115 mm), Greiner® 50 ml tube, conical bottom, skirted (30 x 115 mm), Greiner®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

14189+14188

[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[4]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11

14190+14188

[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)

14192+14188

[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)

13267+17151

14043

[4]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[4]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[4]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14071

[4]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[4]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®

14248

[4]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)

14089+14868

[4]	*	5 ml probówka z korkiem wciskanym (17 x 54,2 mm), Eppendorf® 5 ml tube with snap cap (17 x 54,2 mm), Eppendorf®

bez wkładki/without adapter

[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®

12200

RPM 4000, RCF 2504, Rmax 140, ⌀ 90

13113

bez wkładki/without adapter

[48]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[48]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[48]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[48]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)

13200

14013

[32]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[32]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[32]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[32]	*	BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[32]	*	Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[32]	*	Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[32]	*	Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[32]	*	Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[32]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[32]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[32]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[32]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

		14016
[28]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[28]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[28]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[28]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[28]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[28]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[28]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[28]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
		14020
[20]	*	Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[20]	*	10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[20]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[20]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[20]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[20]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[20]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[20]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[20]	*	13 ml probówka (ø16x100mm), Sarstedt® nr 62.515.006 13 ml tube (ø16 x 100 mm), Sarstedt® no. 62.515.006
[20]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[20]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)
		14021
[40]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
[40]	*	2 ml probówki z filtrem - spin columns (10,8 x 46 mm) 2 ml spin columns (with filter) (10,8 x 46 mm); [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
		14023
[4]	*	28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[4]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[4]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®
		14026
[4]	*	50 ml probówka z dnem stożkowym z rantem (30 x 115 mm), Greiner® 50 ml tube, conical bottom, skirted (30 x 115 mm), Greiner®
		14028
[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)
		14029
[48]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[48]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[48]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[48]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[48]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[48]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®
		14026+14188
[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[4]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

		14100+14188
[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)
		14100+14196
[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)
		14027
[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
	13215	
		14082
[8]	*	BD Vacutainer® (13 x 100 mm), (4-7 ml)
[8]	*	Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[8]	*	Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[8]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[8]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
		bez wkładki/without adapter
[8]	*	BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[8]	*	Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[8]	*	Sarstedt S-Monovette® (15 x 92 mm), (7,5; 8,2; 8,5 ml)
[8]	*	Sarstedt S-Monovette® (16 x 92 mm), (9; 10 ml)
[8]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[8]	15048	15 ml Thermo Nalgene® (16 x 113 mm) 15 ml Thermo Nalgene® (16 x 113 mm)
[8]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[8]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[8]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)
	13201+17203	
		14021
[40]	*	2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
[40]	*	2 ml probówki z filtrem - spin columns (10,8 x 46 mm) 2 ml spin columns (with filter) (10,8 x 46 mm); [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
		14026
[4]	*	50 ml probówka z dnem stożkowym z rantem (30 x 115 mm), Greiner® 50 ml tube, conical bottom, skirted (30 x 115 mm), Greiner®
		14028
[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)
		14026+14188
[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)
[4]	*	50 ml probówka z dnem stożkowym z zakrętką (30 x 117 mm), Falcon®; [15052] 50ml (30 x 117mm) 50 ml tube, conical bottom, with cap (30 x 117 mm), Falcon®; [15052] 50ml Sarstedt® (30 x 117 mm)
[4]	*	50 ml probówka z dnem stożkowym bez rantu (30 x 115 mm), Greiner® 50 ml tube, conical bottom, without skirt (30 x 115 mm), Greiner®
[4]	*	50 ml probówka Advanced Oak Ridge (29x102 mm), Herolab® nr 25 32 11 50 ml tube, Advanced Oak Ridge (29 x 102 mm), Herolab® no. 25 32 11
		14100+14188
[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)
		14100+14196
[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)
		14027
[4]	*	15 ml probówka z dnem stożkowym z zakrętką (17 x 120 mm), Falcon®; [15050], 15ml (17 x 120 mm) 15 ml tube, conical bottom, with cap (17 x 120 mm), Falcon®; [15050] 15ml Sarstedt®(17 x 120 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

13201+17202

14013

[32]	*		BD Vacutainer® (13 x 100 mm), (4-7 ml)
[32]	*		Greiner Vacuette® (13 x 100 mm), (3,5-6 ml)
[32]	*		Sarstedt S-Monovette® (11 x 92 mm), (4,5; 5 ml)
[32]	*		BD Vacutainer® (13 x 75 mm), (1,6-5,3 ml)
[32]	*		Greiner Vacuette® (13 x 75 mm), (1-4,5 ml)
[32]	*		Sarstedt S-Monovette® (13 x 65 mm), (2,6; 2,9; 3,4; 3,8 ml)
[32]	*		Sarstedt S-Monovette® (13 x 75 mm), (2,7; 3; 4,3 ml)
[32]	*		Sarstedt S-Monovette® (13 x 90 mm), (4,9; 5,6 ml)
[32]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[32]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[32]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[32]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14016

[28]	*		Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[28]	*		BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[28]	*		Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[28]	*		10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[28]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[28]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[28]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®

14020

[20]	*		Sarstedt S-Monovette® (15 x 75 mm), (4; 4,3; 5,5 ml)
[20]	*		10 ml Thermo Nalgene® Oak Ridge (16 x 81,5 mm)
[20]	*		BD Vacutainer® (16 x 100 mm), (2,5-11 ml)
[20]	*		Greiner Vacuette® (16 x 100 mm), (7-9 ml)
[20]	15053	10 ml probówka z pokrywką (16 x 106 mm) 10 ml tube with cap (16 x 106 mm)
[20]	15118	10 ml probówka szklana (16 x 100 mm) 10 ml glass tube (16 x 100 mm)
[20]	*	13 ml probówka (ø16x100mm), Sarstedt® nr 62.515.006 13 ml tube (ø16 x 100 mm), Sarstedt® no. 62.515.006
[20]	15046	14 ml probówka z pokrywką (16,8 x 113,7 mm), Sarstedt® 14 ml tube with cap (16,8 x 113,7 mm), Sarstedt®
[20]	15121	10 ml probówka z dnem okrągłym i pokywką (17 x 70 mm) 10 ml tube, round bottom, with cap (17 x 70 mm)

14021

[40]	*		2-1,5 ml probówka (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm) 2-1,5 ml tube (10,8x41,8 mm), Eppendorf®; [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)
[40]	*		2 ml probówki z filtrem - spin columns (10,8 x 46 mm) 2 ml spin columns (with filter) (10,8 x 46 mm); [15011], 2 ml (10,8x41,8 mm); [15128], 1,5ml (10,8x40,5 mm)

14023

[4]	*		28 ml Thermo Nalgene® Oak Ridge (25,4 x 101,8 mm)
[4]	15056	30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm) 30 ml Thermo Nalgene® Oak Ridge (25,5 x 94,3 mm)
[4]	15055	30 ml probówka z pokrywką (25,4 x 103,2 mm) 30 ml tube with cap (25,4 x 103,2 mm)
[4]	15222	30 ml probówka z pokrywką (25 x 94mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15223	30 ml probówka z pokrywką (25 x 94 mm), Sterilin® 30 ml tube with cap (25 x 94 mm), Sterilin®
[4]	15117	25 ml probówka szklana (25 x 100 mm) 25 ml glass tube (25 x 100 mm)
[4]	15424	30 ml probówka z pokrywką (25,5 x 94 mm), Nalgene® 30 ml tube with cap (25,5 x 94 mm), Nalgene®

14028

[4]	15116	50 ml probówka szklana (35 x 100 mm) 50 ml glass tube (35 x 100 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

A. Wyposażenie dodatkowe/Optional accessories

14029

[48]	*	Sarstedt S-Monovette® (11 x 66 mm), (1,6; 2; 2,7; 3; 3,1 ml)
[48]	15054	6 ml probówka z pokrywką (11,5 x 92 mm), Sarstedt® 6 ml tube with cap (11,5 x 92 mm), Sarstedt®
[48]	15119	7 ml probówka szklana (12 x 100 mm) 7 ml glass tube (12 x 100 mm)
[48]	15120	5 ml probówka szklana (12 x 75 mm) 5 ml glass tube (12 x 75 mm)
[48]	15419	5 ml probówka z korkiem (12 x 85 mm), Sarstedt® 5 ml tube with cap (12 x 85 mm), Sarstedt®

14026+14188

[4]	15051	50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm) 50 ml Thermo Nalgene® Oak Ridge (28,8 x 106,7 mm)

14100+14188

[4]	15115	100 ml probówka szklana (44 x 100 mm) 100 ml glass tube (44 x 100 mm)

14100+14196

[4]	15040	100 ml probówka z pokrywką (45,2 x 103,7 mm) 100 ml tube with cap (45,2 x 103,7 mm)

12218

RPM 3000, RCF 916, Rmax 91, ⍙ 90

13219

bez wkładki/without adapter

[2]	15102	płytka titracyjna MTP 28,8ml (86x128x15/17,5 mm) microtiter plate MTP 28,8 ml (86 x 128 x 15/17,5 mm)

12300

RPM 13000, RCF 16816, Rmax 89, ⍙ 90

bez pojemnika/without bucket

bez wkładki/without adapter

[24]	15100	37 µl kapilara hematokrytowa (1,4 x 75 mm) 37 µl micro-hematocrit capillary tube (1,4 x 75 mm)

** probówka niedostępna w ofercie MPW lub dostępny odpowiednik (np:[15050]), patrz kolumna z prawej*
tube is not offered by MPW or equivalent is available (e.g. [15050]), see column on the right

MPW®
MED. INSTRUMENTS

DECLARATION OF CONFORMITY

Product name: **Laboratory centrifuge MPW-260**

Product type: **Laboratory centrifuge**

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

Product classification on the basis of the Directive 98/79/EC: Non classified to list A or B and not for self-testing.

Product complies with the requirements:

· Directive 98/79/EC (IVD), including the requirements of harmonized standards:

EN 15223-1:2016
EN 13612:2002
EN 13612:2002/AC:2002
EN 13975:2003
EN ISO 14971:2012
EN ISO 18113-1:2011
EN ISO 18113-3:2011
EN 61326-2-6:2006
EN 61010-2-101:2002
EN 62304:2006
EN 62304:2006/AC:2008
EN 62366:2008

· selected harmonized standards of Directive 2014/35/UE (LVD):

EN 61010-1:2010
EN 61010-2-020:2006

· directive 2014/30/UE (EMC)

· directive 2011/65/UE (RoHS 2).

"MPW MED. INSTRUMENTS"
SPÓŁDZIELNIA PRACY
Warsaw, 46 Boremlowska Street
applies Quality Management System in line with PN-EN ISO 9001:2015, PN-EN ISO 13485:2016
Certifying authority:

PREZESA ZARZĄDU
Lech Anistewicz

PREZES ZARZĄDU
mgr Łukasz Sałański

TÜV NORD Polska Sp. z o.o. PN-EN ISO 9001

TÜV NORD Polska Sp. z o.o. PN-EN ISO 13485

Warsaw, 2020. 09.01

no. 10.260.03.en

MPW®
MED. INSTRUMENTS

DECLARATION OF CONFORMITY

Product name: **Refrigerated laboratory centrifuge MPW-260R**

Product type: **Laboratory centrifuge**

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

Product classification on the basis of the Directive 98/79/EC: Non classified to list A or B and not for self-testing.

Product complies with the requirements:

· Directive 98/79/EC (IVD), including the requirements of harmonized standards:

EN 15223-1:2016
EN 13612:2002
EN 13612:2002/AC:2002
EN 13975:2003
EN ISO 14971:2012
EN ISO 18113-1:2011
EN ISO 18113-3:2011
EN 61326-2-6:2006
EN 61010-2-101:2002
EN 62304:2006
EN 62304:2006/AC:2008
EN 62366:2008

· selected harmonized standards of Directive 2014/35/UE (LVD):

EN 61010-1:2010
EN 61010-2-020:2006

· directive 2014/30/UE (EMC)

· directive 2011/65/UE (RoHS 2).

"MPW MED. INSTRUMENTS"
SPÓŁDZIELNIA PRACY
Warsaw, 46 Boremlowska Street
applies Quality Management System in line with PN-EN ISO 9001:2015, PN-EN ISO 13485:2016
Certifying authority:

TÜV NORD Polska Sp. z o.o. PN-EN ISO 9001
TÜV NORD Polska Sp. z o.o. PN-EN ISO 13485

Z-ca PREZESA ZARZĄDU
Wojciech Anisiewicz

PREZES ZARZĄDU
mgr Łukasz Sałański

Warsaw, 2020. 09.01

no. 10.260R.03.en

DECLARATION OF DECONTAMINATION

(repair)

In order to protect our employees please fill out the declaration of decontamination completely before sending centrifuge to the manufacturer (repair).

1. **Device:**

   – type: ……

   – serial No.: ……

2. **Description of decontamination**

   (see user manual)

   ……

   ……

   ……

   ……

3. **Decontamination carried out by:**

   name: ……

4. **Date and signature:**

   ………

DECLARATION OF DECONTAMINATION

(return)

In order to protect our employees please fill out the declaration of decontamination completely before sending centrifuge to the manufacturer (return).

1. **Device:**

   – type: ……

   – serial No.: ……

2. **Description of decontamination**

   (see user manual)

   ……

   ……

   ……

   ……

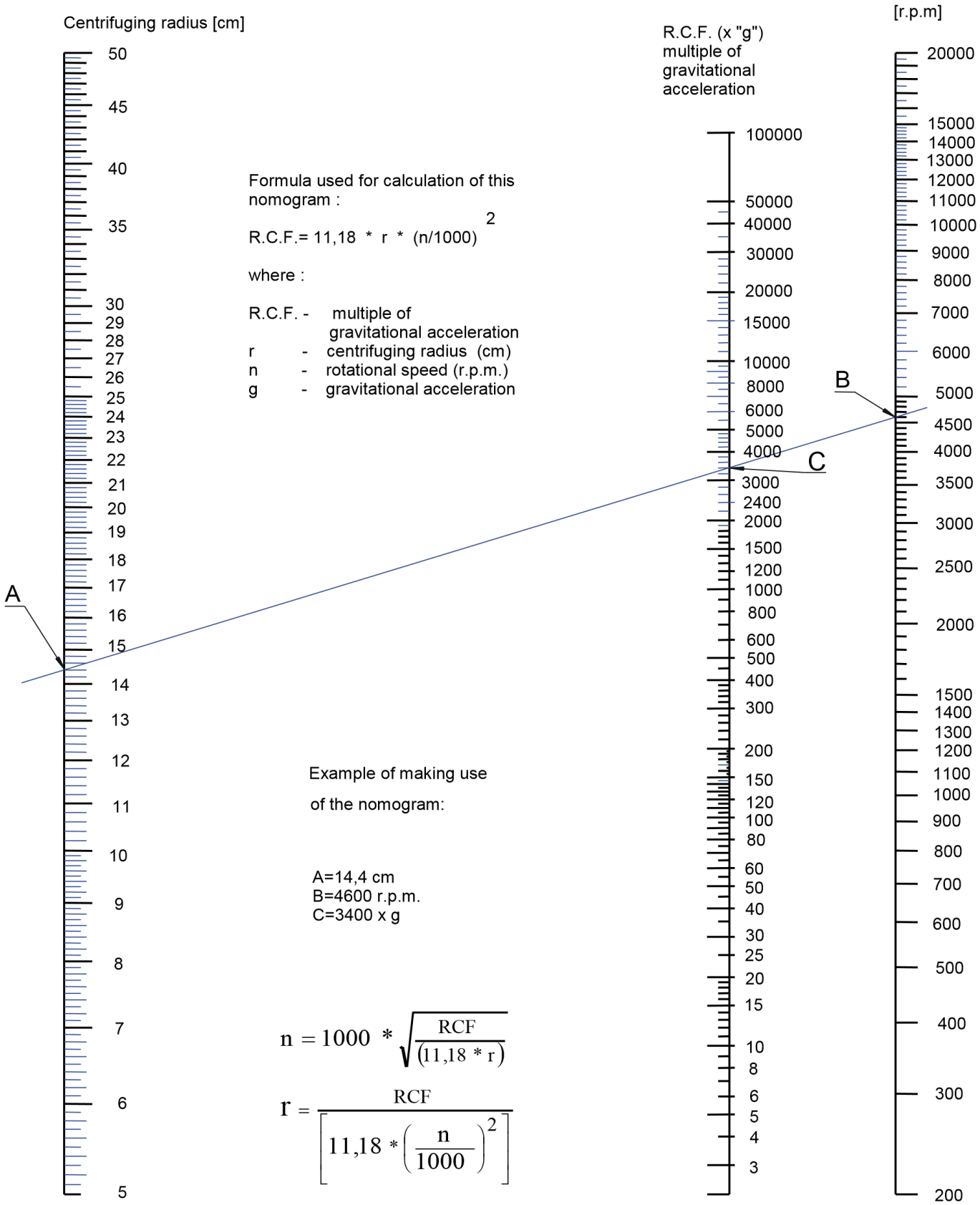
3. **Decontamination carried out by:**

   name: ……

4. **Date and signature:**

   …….

NOMOGRAM



Formula used for calculation of this nomogram :

$$R.C.F. = 11{,}18 * r * (n/1000)^2$$

where :

R.C.F. - multiple of gravitational acceleration
r - centrifuging radius (cm)
n - rotational speed (r.p.m.)
g - gravitational acceleration

Example of making use of the nomogram:

A=14,4 cm
B=4600 r.p.m.
C=3400 x g

$$n = 1000 * \sqrt{\frac{RCF}{(11{,}18 * r)}}$$

$$r = \frac{RCF}{\left[11{,}18 * \left(\frac{n}{1000}\right)^2\right]}$$