User Manual

FastPrep-24™ Classic

For Research Use Only

Cat. No.: 116004500

Protocol Revision: #116004500-202003

MP

www.mpbio.com

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1. PRECAUTIONARY INSTRUCTIONS

The precautionary instructions found in this section and throughout the manual are indicated by specific symbols. Understand these symbols and their definitions before operating this equipment. The definition of these symbols are as follows:

Text with a "**CAUTION**" indicator will explain possible Safety infractions that could have the potential to cause minor to moderate injury or damage to equipment.

Text with a "**WARNING**" indicator will explain possible Safety infractions that will potentially cause serious injury and equipment damage.

NOTE: *Throughout this manual "**NOTE**" may be found. These notes are helpful information to aid in the particular area of function being described.*

⚠ CAUTION

- Read, understand and practice the precautionary and operating instructions. Know the limitations and hazards associated with using this unit. Observe the precautionary and operational decals placed on the unit.
- DO NOT operate this unit in an environment where other devices are being used that intentionally radiate electromagnetic energy in an unshielded manner.
- DO NOT use sharp objects such as a pencil point or ballpoint pen to operate the buttons on the control panel as damage may result.
- This unit should be operated in temperatures between 15°C to 35°C, transported and stored in temperatures between 5°C to 43°C, with relative humidity ranging from 30%–60%.
- DO NOT disassemble, modify or remodel the unit or accessories.

⚠ WARNING

- This device should be kept out of the reach of children.

CE The FastPrep-24™ is CE in compliance with the European Low Voltage and EMC Directives

2. INTRODUCTION

The FastPrep-24™ Classic instrument is a high-speed benchtop homogenizer offering the ultimate in speed and performance for the lysis of biological samples. Simultaneous homogenization of 24 samples in 2 mL tubes, 12 samples in 15 mL tubes, 48 samples in 2 mL tubes or 2 samples in 50 mL tubes takes place within 40 seconds.

The FastPrep-24 Classic instrument uses a unique, optimized motion to disrupt cells through the multidirectional, simultaneous beating of specialized Lysing Matrix beads on the sample material.

Developed for difficult and resistant samples, the FastPrep-24 Classic instrument thoroughly and quickly lyses any tissues and cells. It allows easy and reproducible isolation of stable RNA, active proteins and full-length genomic DNA. Samples and buffers are added to a Lysing Matrix tube containing specialized Lysing Matrix beads. The ergonomic design of the instrument ensures easy loading of the sample tubes and secure sealing during processing. The homogenization speed and duration times are digitally controlled. After setting your speed and time with the touch of a button, just push "run", and in less than a minute, your samples are completely lysed.

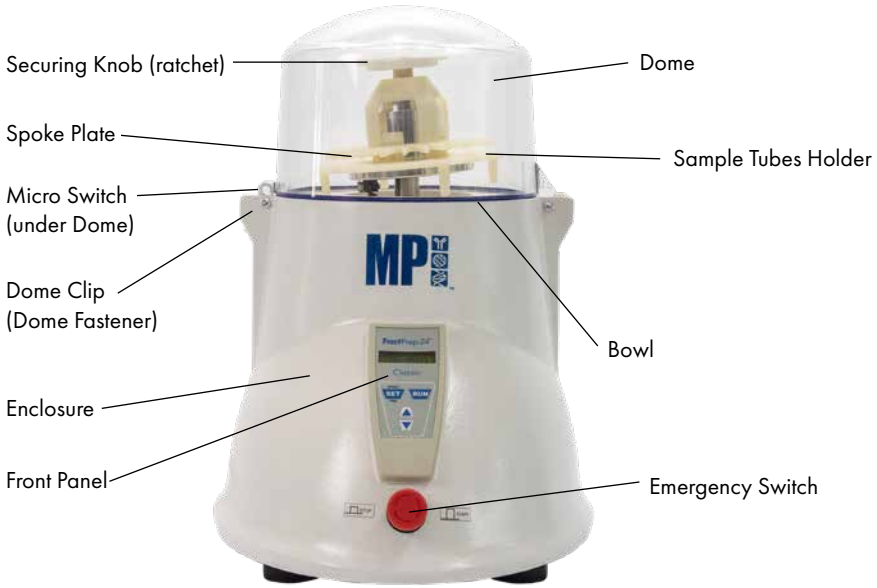

Fig. 1 (front view)

3. INSTALLATION

3.1 Unpacking

Carefully remove the FastPrep-24 instrument and accessories from the shipping carton.

In addition to the instrument, the following accessories are included:

Item	Quantity
AC Power Adapter	1
Springs	8
Fuse 10 Amp	2
Screw Driver	1
Instruction Manual	1
Securing Knob (ratchet)	1 pack

Compare the packing list to the box contents. If there is a discrepancy, please notify MP Biomedicals.

⚠ **CAUTION:** DO NOT LIFT DEVICE BY COVER

3.2 Inspection

Inspect the unit for any damage that may have occurred during shipment. Should there be any damage, report it to the carrier and contact MP Biomedicals immediately. Save the packaging material in the event a return is necessary.

3.3 Set-up

To assure safe operation and best results, read this manual before operating the FastPrep-24 instrument. The FastPrep-24 instrument comes fully assembled, requiring very little set-up. Install the system on a clean, dry, stable surface within 4 feet (1.2 m) of a compatible electrical outlet.

3.4 Ventilation

Allow 1-2 inches (3-5 cm) of space around the FastPrep-24 instrument for proper ventilation. This unit is FOR INDOOR USE ONLY. Avoid operating in areas of excessive humidity or temperature extremes.

3.5 Connecting the Power

The FastPrep-24 can work on 110 VAC/60 Hz or 220 VAC/50 Hz. Make sure the rocker switch located on the rear panel is OFF when connecting the power. Connect the power cord to the instrument (power fixture is at the back side) and plug it into a compatible outlet.

This symbolizes Alternating Current

4. OPERATION

4.1 Controls and Functions

Functions of control panel keys are provided below (Ref. Fig. 2)

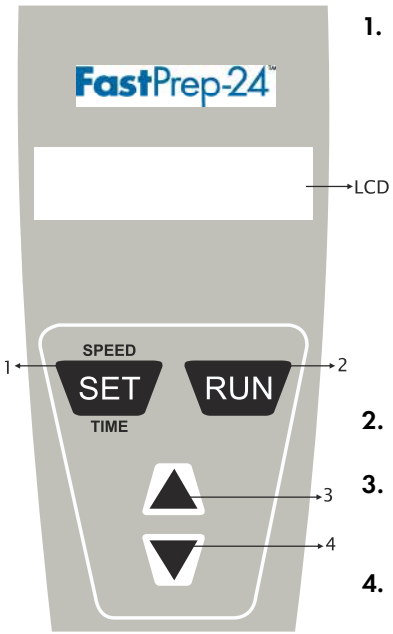

Fig. 2 (control panel)

1. **SET Key:** Press this key to select Speed & Time as displayed on LCD and to choose program (model 6004)

   Speed: Selectable from 4.0 m/s to 6.5 m/s. In steps of 0.5 m/s (Default 4.0 m/s).

   Tube holder: Selectable list of tube holders

   Time: Selectable from 1 sec to 60 sec in increments of 1 sec. (Default 20 sec)

2. **RUN Key:** To start or stop the instrument.

3. ▲ **Key:** To increase the selected value of speed, tube holder and time.

4. ▼ **Key:** To decrease the selected value of speed, tube holder and time.

4.2 Loading and Securing the Samples

1. Loosen the Securing Knob (Ratchet Nut) by rotating counter-clockwise until it comes out (Ref. Fig. 3).

2. Remove the Securing Knob (Ratchet Nut).

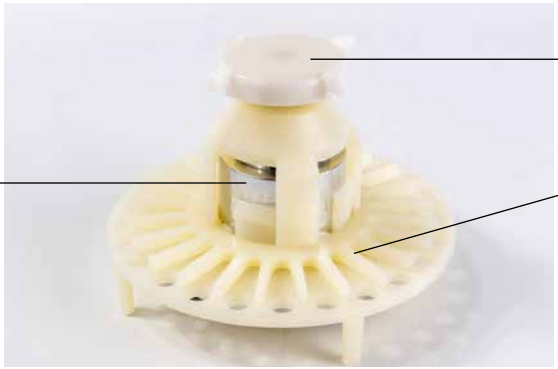

Fig. 3

3. Take out the assembly of Spoke Plate and Tube Holder (Ref. Fig. 6).

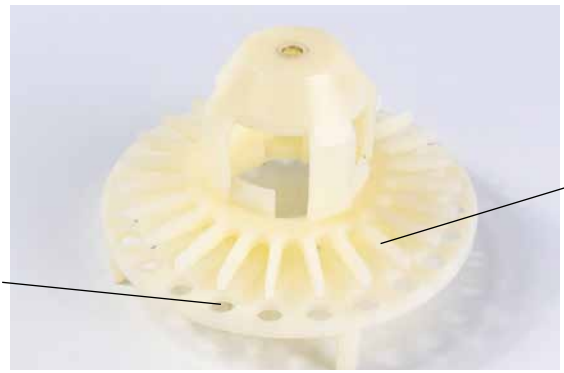

Fig. 4

4. Slightly lift the Spoke Plate and rotate clockwise so that the retention spokes move away from holes to leave them open for loading (Ref. Fig. 5).

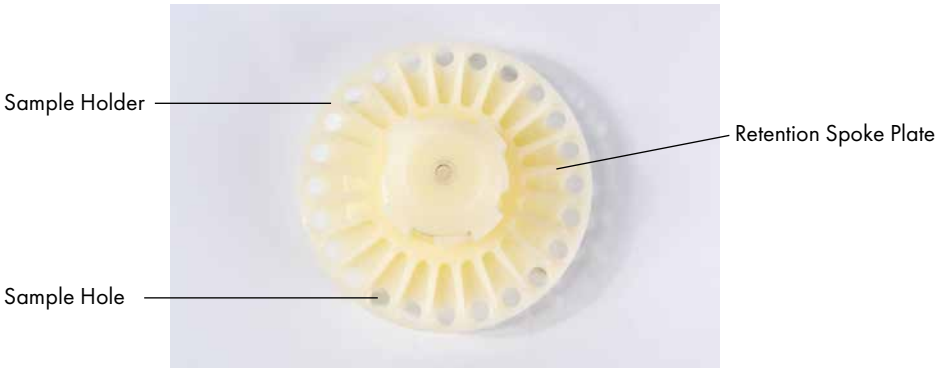

Fig. 5

5. Load sample tubes into the cavities of the Sample Holder so that they fit snugly in the holes. Position the tubes symmetrically.

6. When all the sample tubes are loaded, place the assembly into the FastPrep-24 instrument. Align the Locking Pin of the Aluminium Three Step with the holes under the Tube Holder, ensuring its proper placement (Ref. Fig. 6).

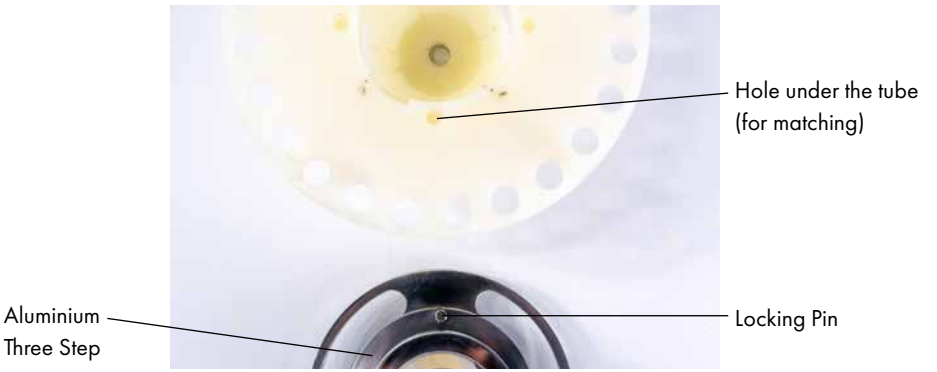

Fig. 6

7. Uplift and rotate the Spoke Plate counter-clockwise so that the retention spokes take the position above each sample tube cap. Place the Securing Knob (Ratchet Nut) on the assembly to tighten it completely (Ref. Fig. 7). The Securing Knob should be ratcheted several times (not just once). It is good practice to push down on the nut while twisting to secure the part, make sure you hear several clicking sounds.

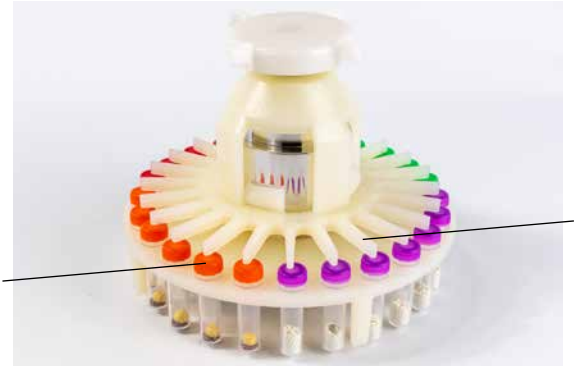

Fig. 7

8. Close the Dome properly and secure the Dome Clip.

WARNING: Sample tubes must be secured properly before running the FastPrep-24 instrument

4.3 Preparing the FastPrep-24 for Operation

1. FastPrep is delivered with an Emergency Switch. Remove the Emergency Switch by pulling and then turn the main Rocker Switch ON (backside of the machine). It is not necessary to pull out the Emergency Switch each time the instrument is used - simply use the Rocker Switch.

2. Factory-set default values automatically program FastPrep-24 to operate at Speed: 4.0 m/sec, Tube Holder: MP:24x2 and Run Time: 20 seconds (to override these values, see programming).

This symbolizes ON Supply

This symbolizes OFF Supply

4.4 Programming the FastPrep-24

1. Switch ON Power Supply using Rocker Switch provided at the back. Ensure Emergency Switch is pulled out.

2. On Power ON, the LCD will show WELCOME followed by MP Bio

3. User can accept the default setting or program their own. Five different combinations of settings can be saved as described in the next section.

4. Press SET key to start programming.

5. Once SET key is pressed, LCD will show the default setting speed of 4.0 m/s . If Option 1 is needed, then press SET key again. The 4.0 m/s message on LCD will start flashing to indicate that it can be changed at this moment. Press ▲ or ▼ key to change the default Speed to User Selectable Speed. Once speed is selected, press SET again. Flashing of 4.0 m/s will stop to indicate that speed has been selected.

6. To change the default Tube Holder setting, press SET key. LCD will show 4.0 m/s Use ▲ key until MP:24x2 is displayed, then press SET key. LCD will start flashing to indicate the sample tube holder can be changed using ▲ or ▼ key. Once sample tube holder is selected, press SET key again. Flashing of LCD will stop to indicate that Tube Holder has been selected.

NOTE: *During tube holder selection, LCD will be displayed as:*

MP:24x2	QuickPrep™ Adapter (supplied with instrument)
BG:2x50	BigPrep™ Adapter (2 x 50 mL tubes)
TN:12x15	TeenPrep™ Adapter (12 x 15 mL tubes)
CY:24x2	CryoPrep™ Adapter (24 x 2 mL tubes)
HG:48x2	HighPrep™ Adapter (48 x 2 mL tubes)
CUSTOM	Custom holder (all other adapters)

7. To change the default Time setting, press SET key. LCD will show 4.0 m/s . Use ▲ key until TIME 20 is displayed, then press SET key. LCD will start flashing to indicate the Run Time can be changed using ▲ or ▼ key. Once Run Time is selected, press SET key again. Flashing of LCD will stop to indicate that Run Time has been selected.

8. Once Speed, Tube Holder and Run Time have been selected or saved, press RUN key. LCD will show SURE? . Press RUN key to start the session.

9. If you are ready to start, press the RUN key again. The motor will start and display will show count down run time.

10. When the time is over, LCD will display REST 5 mn indicating that the motor is at rest for 5 minutes. Display will count down each minute until the LCD displays READY . The program will go back to main menu with last selection.

NOTE: *When Speed, Tube Holder or Run Time is flashing (in selectable mode), the user can still start the unit directly by pressing RUN key twice. These values will be temporary and they will not be saved unless SET key is pressed and LCD stops flashing.*

11. Press RUN key to stop the instrument at any time during a run. LCD will show Stop . The program will go back to main menu with last selection.

12. Turn OFF the instrument by pressing Rocker Switch.

4.5 Save Programmed Combinations

During Program 1 to 5, Tube Holder selection will be displayed as:

PX TH MP	QuickPrep™ Adapter (supplied with instrument)
PX TH BG	BigPrep™ Adapter (2 x 50 mL tubes)
PX TH TN	TeenPrep™ Adapter (12 x 15 mL tubes)
PX TH CY	CryoPrep™ Adapter (24 x 2 mL tubes)
PX TH HG	HighPrep™ Adapter (48 x 2 mL tubes)
PX TH CS	Custom holder (all other adapters)

MP:24x2	QuickPrep™ Adapter (supplied with instrument)
BG:2x50	BigPrep™ Adapter (2 x 50 mL tubes)
TN:12x15	TeenPrep™ Adapter (12 x 15 mL tubes)
CY:24x2	CryoPrep™ Adapter (24 x 2 mL tubes)
HG:48x2	HighPrep™ Adapter (48 x 2 mL tubes)
CUSTOM	Custom holder (all other adapters)

PX = Program 1 to 5

1. If Save Mode 1 to 5 is required, press SET key. LCD will show 4.0 m/s . Use ▲ key until Program 1 is displayed, then press SET key. Display will show P1 S 4.0 and the value "4.0" will be flashing, indicating the speed set in Program 1 is 4.0 m/s. Use ▲ or ▼ key to change Speed value.

2. Once Speed has been set, press SET key to save in program 1. Now the LCD will show P1 TH MP . Letter "MP" will be flashing. Use ▲ or ▼ key to set the desired Tube Holder.

3. Once Tube Holder has been set, press SET key to save in Program 1. Now the LCD will show P1 T 20 . Value "20" will be flashing. Use ▲ or ▼ key to set the desired Run Time. Press SET key to save the Run Time in Program 1. LCD will display Program 1 . Follow same instructions to save in Program 2 to 5.

EMERGENCY NOTE: *In the event of an emergency, push the Emergency Switch to stop the instrument at any time (on the front panel of the instrument). The instrument will be completely isolated from AC mains. Pull the Emergency Switch again to make the instrument ready to restart.*

⚠ CAUTION

- Improper closing of Dome will be indicated by display Cancel
- Please do not run the instrument without the Tube Holder, as this may cause damage to the motor shaft
- To prevent sample overheating, instrument must rest for 5-10 minutes between runs.
- The instrument should be properly grounded for safe use.

Earth Terminal

Temperature Indication:

- If LCD displays SYS WARM it is an indication that critical parts of the system are becoming hot. User should provide a pause before next run.
- If LCD displays SYS HOT! it is an indication that temperature of critical parts is high. Unit will stop automatically and user will not be able to make any run until the temperature decreases to a safer value.

Overload Indication:

- If there is a wrong selection of Tube Holder or an overload condition, LCD will display OverLoad . This is an indication that user must make proper selection of Tube Holder or reduce the number of tubes in Tube Holder.

5. SPECIFICATIONS

Controls	Programmable run time, tube holder and speed; LCD readout
Time	Range: 1–60 sec
Speed	Range: 4.0–6.5 m/s
Acceleration	<2 seconds to maximum speed
Deceleration	<2 seconds to stop
Weight	17.9 kg
Power Requirement	110 VAC/60 Hz or 220 VAC/50 Hz, 500 W
Operating Temperature	15°C to 35°C
Storage Temperature	5°C to 43°C
Dimensions (L x W x H)	33.2 cm x 43.7 cm x 46.5 cm

6. WARRANTY & LIABILITY

WARRANTY

The product warranty extends to the original consumer/purchaser of the product.

WARRANTY DURATION

This product is warranted to the original consumer for a period of one (1) year from the original purchase date. Extended warranty duration is available upon request.

WARRANTY COVERAGE

This product is warranted against defective materials. The warranty ceases if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service, commerical use, repair by unauthorized personnel or cause not arising out of defect in materials or workmanship. This warranty does not extend to any units which are used in violation furnished by manufacturer, or to units which have been altered or modified, or machine installed in a contaminated area with no removing possibility, or to damage to products or parts there of which have had the serial number removed, altered or defaced or rendered illegible. The warranty doesn't cover normal wear and tear or replacement of electrical cord, springs, rubber cups, dome, tube holders, tube-covers, motor and its attachments and other accessories.

WARRANTY DISCLAIMERS

The warranty is in lieu of all warranties expressed or implied and no representative or person is authorized to assume for manufacturer/any other liable in connection with the sale of our products. There shall be no claims for defects or failure of performance or product failure/any theory of tort, contract or commerical law including, but not limited in negligence, gross negligence, strict liability, breach of warranty and breach of contract. Some states do not allow the exclusion or limitation of implied warranties or consequential damages arising out of or in connection with the use performance of the product or other damage with respect to loss of property or loss of revenues or profit.

LEGAL REMEDIES

This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

WARRANTY PERFORMANCE

During the above one-year warranty period, a product with a defect will be repaired or replaced with a reconditioned comparable unit at distributor's option when the product is returned to the distributor. The repaired or replacement product will be in warranty for the balance of the one-year warranty period and an additional one-month period. No charge will be made for such repair or replacement.

CONSUMER SERVICE

For in-warranty service for a product covered under the warranty period, no charge is made for service and return postage. Please return the product insured, packed with sufficient protection, postage insurance, prepaid to the address. Any duty/brokerage fee, if any, must be paid by the consumer.

OUT OF WARRANTY SERVICE

There will be charges rendered for repairs made to the product after the expiration of the aforesaid one (1) year warranty period, after purchaser is advised appropriately. The distributor cannot assume responsibility for loss or damage during shipment. For your protection, carefully pack the product for shipment and insure it with the carrier. Ensure that you return the unit and accessories related to your problem and also that you indicate full return address. Also send a copy of sales receipt or other proof of purchase to determine warranty status. C.O.D. shipments cannot be accepted.

7. APPENDICES

7.1 APPENDIX 1: Maintenance & Cleaning

Maintenance: The FastPrep-24 instrument requires no scheduled maintenance. Clean surfaces immediately after contact with sample solutions or reagents.

Fig. 8 (Spring Replacement)

Spring Replacement Instructions:
For the long running life of the instrument, 8 extra springs are provided. If a spring breaks, follow the steps below (Ref. Fig. 8):

1. Open the Dome and Securing Knob (Ratchet Nut) from the shaft.

2. Remove the sample holder and bowl (all plastic pieces).

3. Put the screw driver through the hole provided on the face of aluminium collared bush holding and unscrew the bottom spring holder and top end of spring's screw.

4. Remove damaged spring and replace it with a new spring. It is recommended that both springs be replaced at the same time.

5. Now reassemble the instrument in reverse order.

Fuse Replacement:

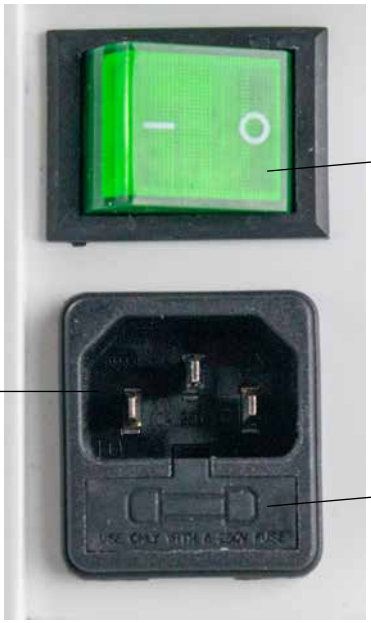

Fig. 9 (Fuse Replacement)

CAUTION: Disconnect input power before replacing fuse. For continued fire protection, replace only with specified type and rated fuse. Fuse rating is 10 AMP. 2 extra fuses are provided with accessories. If a fuse blows, follow the steps below for replacement (Ref. Fig. 9)

1. Ensure that input power is disconnected during replacement of fuse.
2. Take out fuse receptacle from the AC receptacle provided at the back side of the instrument. A spare fuse is provided in fuse holder. Remove the faulty fuse and replace with new one.
3. Insert the fuse receptacle into the AC receptacle carefully.
4. Connect the power cord to the instrument and plug it into a compatible outlet and turn ON the rocker switch.

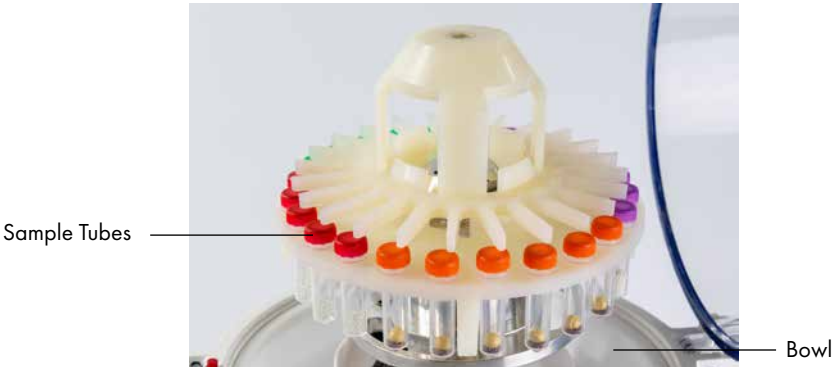

Fig. 10 (Cleaning)

Cleaning:
The FastPrep-24 instrument should be cleaned if reagents or sample solutions spill on or inside the unit. If a sample tube leaks during a run, the solution will be sprayed on the bowl. Always clean any spray or spills immediately using a damp paper towel. Always wear gloves and protective clothing when cleaning.

If potentially infectious agents are used in the FastPrep-24 instrument, spills should be cleaned immediately, and appropriate decontamination carried out. The FastPrep-24 instrument may not be resistant to all cleaning regimens required for all infectious agents. Exercise appropriate caution and wear protective clothing, eyewear and gloves when working with potentially infectious samples. Contaminated units should be kept in an appropriate biosafety level facility, and should only be maintained or serviced by personnel trained in safe handling practices specific to the infectious agent.

7.2 APPENDIX 2: An Explanation of FastPrep-24 Instrument Speed Settings

The cell disruption process during a FastPrep-24 instrument run is caused by the collision of matrix and sample within the FastPrep-24 instrument sample tube. The rate of collision and energy of impact (both of which determine the effectiveness of the disruption process) are a function of the FastPrep-24 instrument speed settings and specific gravity of the bead material used.

The FastPrep-24 instrument speed setting in meters per second refer to the maximum vertical velocity achieved by a sample tube during reciprocating motion. The rate of collision is proportional to speed, while the energy of impact is proportional to the square of the speed. For example, a 50% increase in the FastPrep-24 instrument speed setting increased the rate of collision by 50% and at the same time increases the energy of impact by 125%.

The FastPrep-24 instrument has been specifically designed to allow operation within an ideal range of parameters for disrupting membranes from a wide variety of cell types. When used with cell-specific protocols and kits (MP Biomedicals), cell membrane disruption and nucleic acid yield is maximized.

7.3 APPENDIX 3: FastPrep-24 Product Line

The FastPrep-24 instrument is part of a complete purification system for the researcher. This system is composed of three families of products:

1. The FastPrep-24 instrument: for lysis of cells prior to DNA, RNA and protein purification.
2. Lysing Matrix Tubes: contain small particles (the lysing matrix).
3. FastPrep-24 Kits: contain lysing matrix tubes and purification reagents.

A specific Lysing Matrix for each application

Lysing Matrix	Sample	Extraction
A	Animal, bacteria, yeast, fungi, plant	DNA
B	Bacteria, spores	RNA & proteins
C	Yeast, fungi	RNA & proteins
D	Animal, plant	RNA & proteins
E	Soil, sediments, water, feces	DNA & RNA
F, G, H, I, J, K	Various samples: optimization	Various extraction: optimization

Lysing Matrices are critical components of the FastPrep-24 sample preparation system. MP Biomedicals receives matrix particles from proven vendors and ensures the unprocessed material meets high qualitative standards. Matrix particles are then prepared and dispensed under a rigorous set of proprietary conditions that offer customers a premium product that can be immediately used with confidence. Matrices are availabe separately for use with your own unique buffers and are also available as components of the complete purification kits on the following pages.

Lysing Matrix A

Each impact-resistant 2.0 mL tube contains garnet matrix and one 1/4 inch ceramic sphere. Extra 1/4 inch ceramic spheres are packaged separately. Lysing Matrix A tubes have orange caps and are found in the FastDNA™ and FastDNA™ SPIN Kits.

Lysing Matrix B

Each impact-resistant 2.0 mL tube contains 0.1 mm silica spheres. Lysing Matrix B tubes have blue caps and are found in the FastRNA™ Pro Blue Kit for isolation of total RNA from gram positive and gram negative bacteria.

Lysing Matrix C

Each impact-resistant 2.0 mL tube contains 1.0 mm silica spheres. Lysing Matrix C tubes have red caps and are found in the FastRNA™ Pro Red Kit for isolation of total RNA from yeast and fungi.

Lysing Matrix D

Each impact-resistant 2.0 mL tube contains 1.4 mm ceramic spheres. Lysing Matrix D tubes have green caps and are found in the FastRNA™ Pro Green Kit for isolation of total RNA from plants and animals.

Lysing Matrix E

Each impact-resistant 2.0 mL tube contains 1.4 mm ceramic spheres, 0.1 mm silica spheres, and one 4 mm glass bead. Lysing Matrix E tubes have purple caps and are found in the FastDNA™ SPIN Kit for Soil for isolation of any type of DNA found in soil or other environmental samples.

Lysing Matrix F

Each impact-resistant 2.0 mL tube contains white granules and silicon carbide. Lysing Matrix F tubes have white caps.

Lysing Matrix G
Each impact-resistant 2.0 mL tube contains silicon carbide and 2 mm glass beads. Lysing Matrix G tubes have brown caps.

Lysing Matrix H
Each impact-resistant 2.0 mL tube contains 2.0 mm glass beads and 2 mm yellow zirconia beads. Lysing Matrix H tubes have yellow caps.

Lysing Matrix I
Each impact-resistant 2.0 mL tube contains 2 mm yellow zirconia beads and a 4 mm black ceramic bead. Lysing Matrix I tubes have clear caps.

Lysing Matrix J
Each impact-resistant 2.0 mL tube contains 2 mm yellow zirconia beads and white granules. Lysing Matrix J tubes have pink caps.

Lysing Matrix K
Each impact-resistant 2.0 mL tube contains 0.8 mm zirconia beads. Lysing Matrix K tubes have brown caps and are found in the GeneClean for Ancient DNA Kit.

Additional Lysing Matrices

On the rare occasion that matrices A-E do not completely homogenize the sample, the researcher may wish to consider the texture of the sample and test Lysing Matrix F-K tubes. Smooth and/or muscular tissue may need a rough particle like garnet to tear it. Hard, brittle samples may need a 6 mm ceramic sphere, 2 spheres or even a cylinder.

FastPrep-24 Kits: Ready-to-Use Protocols

The FastPrep-24 system includes a selection of kits for nearly every application. These kits are summarized in the table below.

Kit	Sample	Matrix	Most Important Factors
FastDNA™ Kit FastDNA™ SPIN Kit	All	A	1. Unsheared DNA 2. High quantity 3. Reproducibility
FastDNA™ SPIN Kit for Soil	Soil	E	1. Purity 2. Reproducibility 3. High quantity
FastRNA™ Pro Blue Kit	Bacteria	B	1. Purity 2. Reproducibility 3. High quantity
FastRNA™ Pro Red Kit	Yeast	C	
FastRNA™ Pro Green Kit	Plant/ Animal	D	
FastRNA™ Pro Soil Direct and Indirect Kits	Soil	E	
FastPROTEIN™ Blue Matrix	Bacteria	B	1. Purity 2. Reproducibility 3. High quantity
FastPROTEIN™ Red Matrix	Yeast	C	1. Purity 2. Reproducibility 3. High quantity

FastDNA and FastDNA SPIN Kits

The FastDNA and FastDNA SPIN Kits quickly and efficiently isolate genomic DNA from a wide variety of sources. Designed for use with the FastPrep-24 instruments, plants, animal tissues, yeast, bacteria, algae, fungi and many other samples are easily lysed within 40 seconds.

Samples are placed into 2.0 mL tubes containing Lysing Matrix A (included in the kits), irregularly shaped garnet particles and a single 1/4 inch ceramic sphere. While almost all samples are easily processed with this pre-filled combination, additional 1/4 inch ceramic spheres are provided for hard samples such as bone, cartilage or seeds.

Homogenization in the FastPrep-24 instrument with Lysing Matrix A takes place in the presence of sample-specific Cell Lysis Solutions (CLS). For plant tissues, CLS-VF is used in conjunction with a Protein Precipitation Solution (PPS). Yeast, algae and fungi are lysed in the presence of CLS-Y. For all other samples, CLS-TC is used during sample lysis. For maximum flexibility, all buffers are provided in the kit.

Following lysis, samples are centrifuged to pellet debris and lysing matrix. DNA is purified from the supernatant with silica-based GeneClean procedure. SPIN filters are included in the FastDNA SPIN Kit to streamline the silica handling process. Eluted DNA is ready for digestion, electrophoresis, PCR and any other desired application.

FastDNA SPIN Kit for Soil

The FastDNA SPIN Kit for Soil quickly and efficiently isolates PCR-ready genomic DNA directly from soil samples in less than 30 minutes. Designed for use with the FastPrep-24 instrument, plant and animal tissues, bacteria, algae, fungal spores and other members of a soil population are easily lysed within 40 seconds.

Samples are placed into 2.0 mL tubes containing Lysing Matrix E (included in the kit), a mixture of ceramic and silica particles designed to efficiently lyse all soil organisms, including historically difficult eubacterial spores and endospores, gram positive bacteria, yeast, algae, nematodes and fungi.

Homogenization in the FastPrep-24 instrument with Lysing Matrix E takes place in the presence of MT Buffer and Sodium Phosphate Buffer, reagents carefully devoloped to protect and solubilize nucleic acids and proteins upon cell lysis. These reagents work together to allow extraction of genomic DNA with minimal RNA contamination.

Following lysis, samples are centrifuged to pellet soil, cell debris and lysing matrix. DNA is purified from the supernatant with silica-based GeneClean procedure using SPIN filters. Eluted DNA is ready for PCR, restriction digest, electrophoresis and any other desired application.

FastRNA Pro Isolation Kits

The FastPrep-24 system is also ideal for use in RNA isolation. Several kits are available for researchers requiring RNA isolation. These include:

- FastRNA Pro Blue Kit (Bacteria)
- FastRNA Pro Red Kit (Yeast)
- FastRNA Pro Green Kit (Plant/Animal Tissues)
- FastRNA Pro Soil - Direct Kit
- FastRNA Pro Soil - Indirect Kit

The FastRNA™ Pro Kits are designed to quickly and efficiently isolate total RNA from virtually any sample. During the homogenization step, intact total RNA is released in the proprietary RNAPro™ solution where it is immediately stabilized. The RNAPro™ solution inactivates cellular RNases during cell lysis to prevent RNA degradation. RNA is then extracted with chloroform and precipitated with ethanol. DEPC-treated water is provided for re-suspension of total RNA. High quality RNA prepared with FastRNA™ Pro Kits is ready for all downstream applications including RT-PCR, gene expression, and microarray analysis.

FastPROTEIN Blue and FastPROTEIN Red Matrix

FastPROTEIN Blue Matrix and FastPROTEIN Red Matrix are designed for bacteria and yeast protein extraction, respectively.

These matrices are ideal for optimizing induction conditions to quickly lyse samples from a range of conditions and run on a protein gel. No special buffer is required for lysis. The researcher can use his/her own protein induction media as “lysis buffer.”
The FastPROTEIN Red Matrix Kit includes a lysis buffer called “Yeast Breaking Buffer.”

7.4 APPENDIX 4: Accessories & Spare Parts

	Description	Qty	Cat. No.
	Driver PCB ⚠	1	116004503C
	Display PCB ⚠	1	116004503B
	SMPS 48V ⚠	1	116003502
	Motor ⚠	1	116004503S
	Bowl	1	116002505

⚠ **WARNING:** This part must be replaced by a qualified technician or MP Biomedicals technical service

	Description	Qty	Cat. No.
	Polycarbonate-Dome with cap and stopper	1	116002506
	Dome Rubber Gasket	2	116002507
	Dome Clip	1	116002508
	Lock Pins for dome locking	1	116002509
	Ratchet Nut	2	116004510

	Description	Qty	Cat. No.
	Ratchet Bolt	1	116002511
	Sample Holder Set	1	116002512
	3 STEP Assembly with studded bearings	1	116002513
	Spring assembly set with hooks	1	116002514
	Rubber Shoe	4	116002515

	Description	Qty	Cat. No.
	Fuse 10 Amp-UL	4	116002516
	European AC Cord	1	116002518
	3Pin flat AC Cord for USA (UL)	1	116002519
	AC Receptacle with fuse	1	116002520
	Rocker Switch-UL	1	116002521

	Description	Qty	Cat. No.
	Emergency Switch	1	116003524
	Micro Switch	1	116002534
	Gasket ⚠	1	116004535
	Inner Ring ⚠	1	116004541
	Outer Ring ⚠	1	116004542

⚠ **WARNING:** This part must be replaced by a qualified technician or MP Biomedicals technical service

Notes:

Notes:

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