Instruction Manual
Research Use Only

FastPrep-96™

Cat. No.: 116010500
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1. Introduction

The FastPrep-96™ is a high-speed, benchtop reciprocating instrument for efficient disruption of cell membranes. The unit is designed for use with MP Biomedicals, nucleic acid and protein extraction kits, designed for a wide range of extraction and purification applications. The FastPrep-96 adapter has the capacity to accommodate two 96-deep well plates simultaneously. We do not recommend using any lysing matrix plates other than those supplied by MP Biomedicals.

Different parts of FastPrep-96 are shown below: (Fig. 1 & 2)

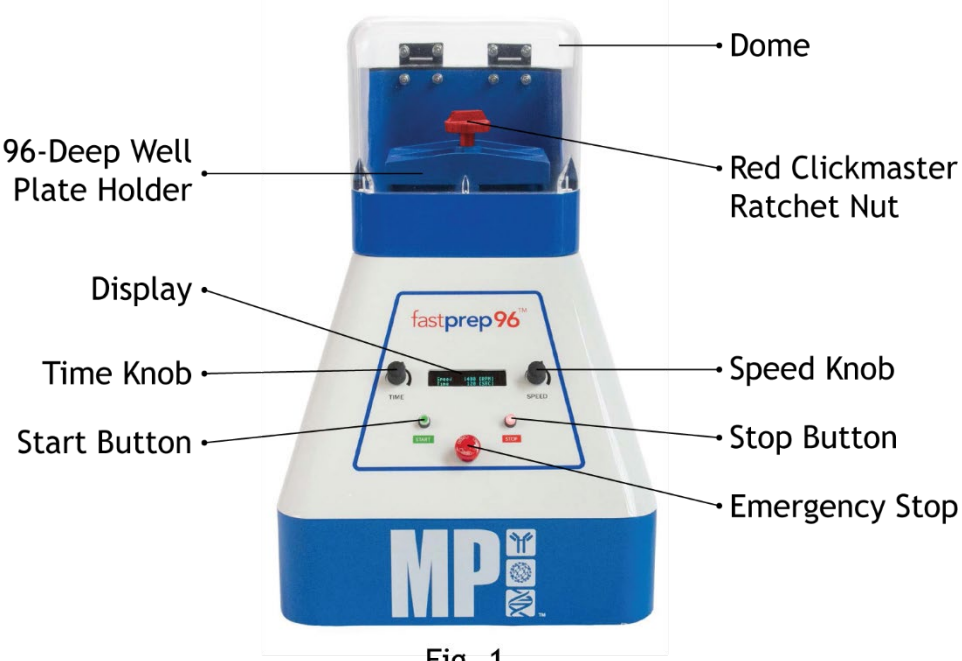


Fig. 1

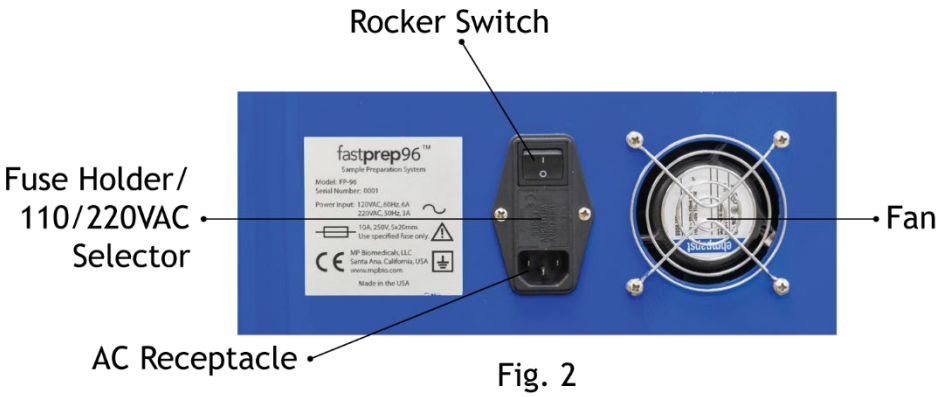


Fig. 2

2. Installation

2.1 Unpacking

Carefully remove the FastPrep-96 instrument and accessories from the shipping crate by following these steps.

NOTE: It is recommended to retain all crating material (screws, foam, crate panels etc.), as this packaging is the safest way to transport the instrument. Transport in other packaging may void the product warranty.

Fig. 3a

Fig. 3b

1. Remove the 2 bolts from the bottom of the crate by unthreading the wingnut from the back of the bolt (1 on each side) (Fig. 3a & 3b).

Fig. 4a

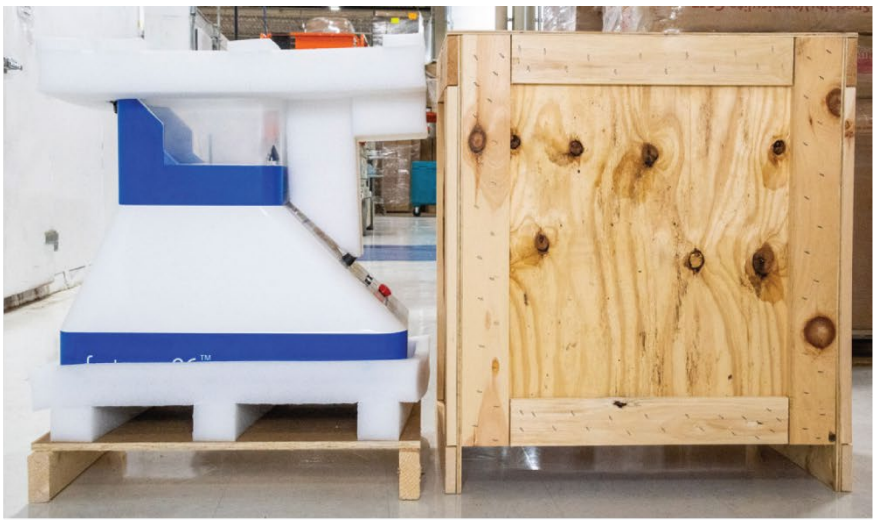


Fig. 4b

2. Using two people, lift top of crate up and off of the base (Fig. 4a & 4b).
3. Carefully remove the FastPrep-96 from the base with help from at least two

people, and place it on a sturdy table of bench top.

4. Remove the included accessories from inside of the Dome

5. Position the instrument such that ~10 centimeters of the front of the instrument overhangs from the edge of the bench top. This will expose the lower transport wing screw that must be removed (Fig. 5).

Fig. 5

Fig. 6

6. Unscrew and remove the temporary transport wing screw (Fig. 5). Once removed, reposition machine and remove rear screw, which is identical (Fig. 6). There are two mounting screws, one in the front and one in the rear.

IMPORTANT! Both of these temporary transport screws MUST BE REMOVED PRIOR TO OPERATION. Failure to do so could result in damage to the instrument or personal injury!

7. Re-position the instrument on table or bench top. Place the system on a clean,

   dry, stable surface within 4 feet (1.2 m) of a compatible electrical outlet.

2.2 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.

FastPrep-96 comes complete with all the necessary accessories to run the instrument. Items included are listed below:

Item	Quantity
3-pin AC Cord Flat or EU AC Cord	1
4 Amp Fuse	2
Instruction Manual	1
96 deep well plate holder with Red Clickmaster	1

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

Ventilation

Allow 1-2 inches (3-5 cm) of space around the FastPrep-96 instrument for proper ventilation. This unit is FOR INDOOR USE ONLY. Avoid operating in areas of excessive humidity or temperature extremes.

2.3 Set-up, Controls and Functions

To assure safe operation and best results, read this manual before operating the FastPrep-96 instrument. The FastPrep-96 instrument comes fully assembled, requiring very little set-up. Install the system on a clean, dry and stable surface within 4 feet (1.2 m) of a compatible electrical outlet.

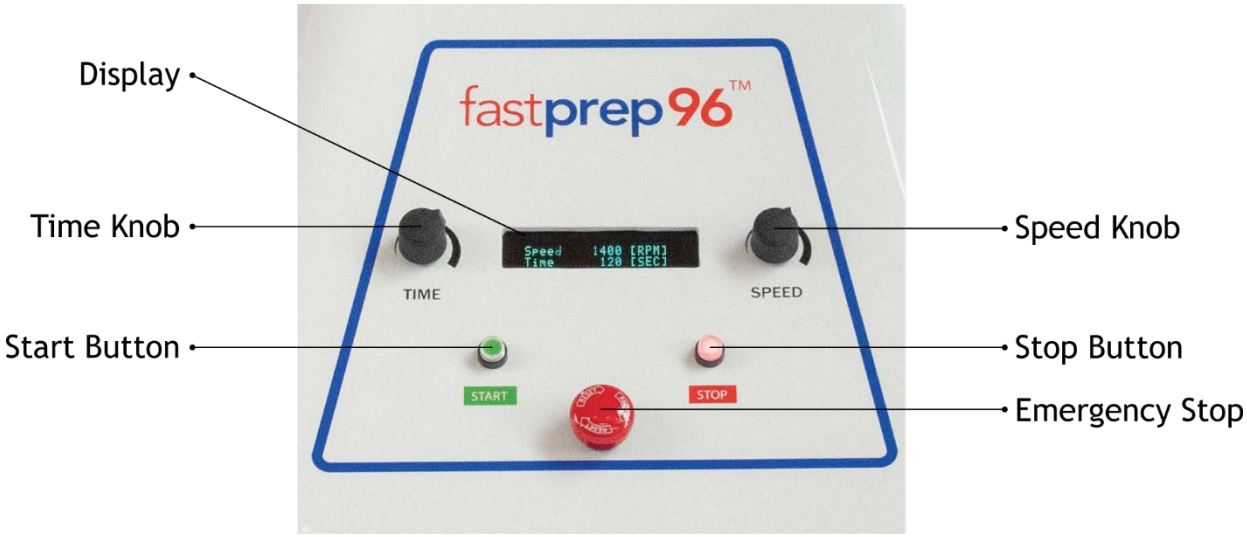


Fig. 7 (Control Panel)

The function of the control panel keys are listed below (Fig. 7):

- Speed Knob – Turn knob to set speed in revolutions per minute (RPM). Speed: Selectable from 800 RPM to 1800 RPM in increments of 100 RPM (Default is 800 RPM).

- Time Knob – Selectable from 1 sec to 60 sec in increments of 1 second. From 60 sec to 300 sec in increments of 30 sec (Default 2 is 0 seconds)
- Start Button – starts the instrument.
- Stop Button – stops the instrument.
- Emergency Stop – cuts all power to instrument.

2.4 Connecting the Power

The FastPrep-96 operates on 110 VAC/60 Hz or 230 VAC/50 Hz.

IMPORTANT! The FastPrep-96 is shipped in the configuration for 110 VAC/60 Hz (Fig. 8). If using with 230 VAC/50 Hz power supply (European) the fuse assembly must be reoriented. To configure for 230 VAC/50 Hz, use a screw driver to pry out the fuse assembly, invert 180 degrees, and re-install. The indicator should point to the "200-240V" position.

Fig. 8 (shown in 110 VAC/60 Hz configuration)

Make sure the Rocker Switch located on the rear panel is OFF when connecting the power. Connect the power cord to the instrument (AC receptacle is at the back of the instrument) and plug it into a compatible outlet.

This symbolizes Alternating Current 120/240V

1. Safely secure 96 well plate adapter by making sure that the ratchet nut clicks.
2. Run machine at low RPM setting (800 RPM)

IMPORTANT NOTE: If at any time, loud noises, grinding or whining noises occur, immediately engage the EMERGENCY STOP BUTTON. This will immediately cut power and stop the instrument. Contact MP Biomedicals for assistance.

3. If low RPM run is OK, increase settings and run at 1200 RPM, then at 1800 RPM to verify. Recommended setting is 60 seconds for verification run time.
4. It is recommended that all packaging material be saved (screws, crate, packing material, and transport wing screws) in case instrument is to be transported again.

3. Operation

3.1 Loading and Securing the Samples

1. Lift up Dome to open position.
2. Remove the securing knob (ratchet nut) by rotating counter-clockwise.
3. Remove top plate of 96-Deep Well Plate Holder (Fig. 9).

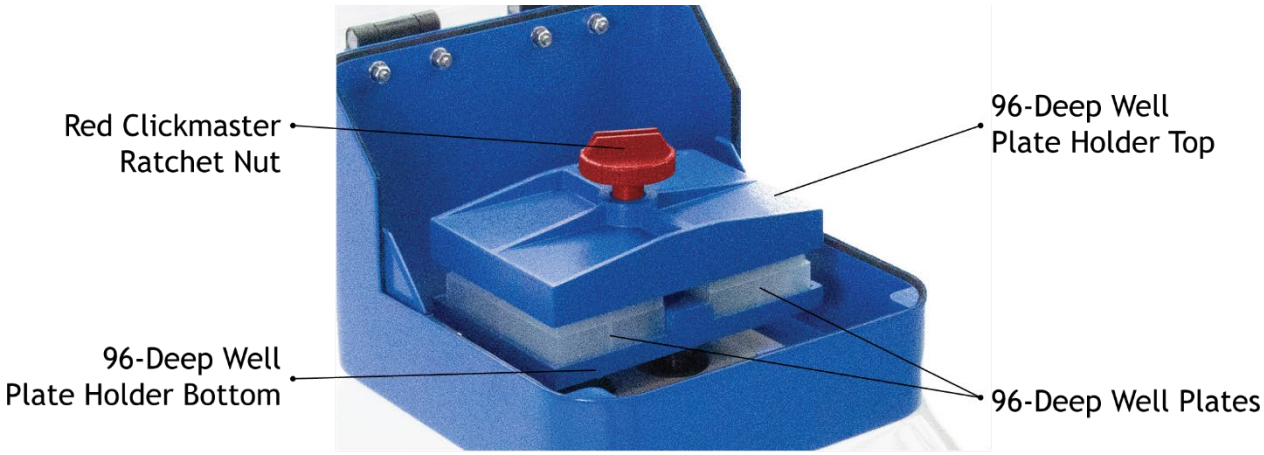


Fig. 9

4. Load two (2) Lysing Matrix 96 well plates into the cavities of the sample holder so that they fit snugly. The sample holder must be balanced, so if only processing one (1) Lysing Matrix plate, load another blank plate in the other cavity.
5. With the Lysing Matrix plates in place, check that there is a snug fit. Replace the top plate of the sample holder, ensuring that the threaded hold-down rod is properly aligned and protrudes through the plate holder top. Squeeze top and bottom sample holder plates together with two hands to ensure a snug fit.
6. Place the Securing Knob (Red Clickmaster Ratchet Nut) on this assembly to tighten it completely until sample holder cannot move anymore.
7. Close the Dome.

IMPORTANT NOTE: The Dome contains an electromagnetic safety override. If the Dome is not properly closed, the motor will not start.

WARNING: Sample Lysing Plates must be secured properly before running the FastPrep-96 instrument.

3.2 Preparing the FastPrep-96 for Operation

1. Turn the main Rocker Switch to the ON position.
2. When unit is turned on, the display will be lit.
3. Factory-set default values automatically program FastPrep-96 to operate at a

speed of 800 RPM and run time of 20 seconds.

3.3 Running the FastPrep-96

1. Adjust Speed Dial to desired RPM.

   NOTE: Speed is adjustable from 800 to 1800 RPM in increments of 100.

2. Adjust the Time Dial to the desired run time in seconds.

   NOTE: Time is adjustable from 0 to 60 sec in increments of 1 sec, and from 60 to 300 sec in increments of 30 sec.

3. Press start button to begin cycle. The motor will start and display will show count down run time.

WARNING: Ensure that adapter, well plates, and ratchet nut are securely fastened before running.

4. When the time is over, FastPrep-96 will stop automatically and the program will go back to the main menu with the last selections made.

5. Press the stop button to stop the instrument at any time. Resume programmed cycle by pressing the start button again. The previously entered program will resume from the point at which the run was stopped. Alternately, if the Dome lid is opened at any time during a run, the program will stop immediately. Closing the Dome lid will re-start the run from the point of interruption. The program will run to completion.

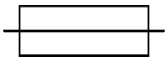
6. Turn off the instrument by pressing the rocker switch to the OFF position.

⚠ CAUTION
• Improper closing of dome will cause power interruption. • Do not run the machine without the sample holder, as this may cause damage to the motor shaft. • The instrument should be properly grounded for safe use. • Please allow a 5-minute rest period between consecutive runs. • Disconnect device from the socket in the event of danger.  Earth Terminal

4. Specifications

Controls	Programmable run time and speed; display readout
Time	Range: 1–300 Sec Programmable 1-60 sec in 1 sec increments and 60-300 sec in 30 sec increments
Speed	Range: 800–1800 revolutions per minute (RPM) Programmable in 200 RPM increments
Acceleration	<2 seconds to maximum speed
Deceleration	<2 seconds to stop
Weight	49 kg
Power Requirement	110 VAC/60 Hz, 5.2 A or 220 VAC/50 Hz, 2.6 A
Recommended Operating Temperature	Range: 35–100°F (2–48°C)
Recommended Operating Relative Humidity	Range: 30–55%
Dimensions	44 cm wide x 66 cm deep x 70 cm high
Overvoltage Category	II
Maximum Sound Level	<70 dB
Maximum Altitude	2000 meters

5. Symbols And Descriptions

Symbol	Description
	Alternating Current
	Earth Terminal, Ground
	Fuse
	Electrical Equipment, Dispose Properly
	Caution, Warning
	Biological Risk
	Power On
	Power Off

6. Warranty & Liability

The FastPrep-96 instrument is warranted against defects in material and workmanship for one year after the date of delivery to the original purchaser. This warranty is limited to defects in materials and workmanship, and does not cover incidental or consequential damages. This warranty ceases if the product has been damaged by accident, in shipment, unreasonable use, misuse, neglect, improper service and commercial use.

MP Biomedicals will repair free of charge any apparatus covered by this warranty. Warranty includes one-year parts and labor in our facilities or by approved distributors. Warranty work is subject to our inspection of the unit. No instruments, equipment, or accessories will be accepted without a Return Material Authorization (RMA) number issued by MP Biomedicals. Costs of shipping the unit are not covered under this warranty. The warranty obliges you to follow all precautions in this manual.

When returning an instrument that may contain hazardous and/or infectious materials, you must pack and label it according to US Department of Transportation (DOT) and/or European community (EC) regulations applying to transportation of hazardous and/or infectious materials. Your shipping documents must also meet DOT and/or EC regulations. All returned units must be fully decontaminated of any chemical, biological or infectious agents. This warranty does not extend to a machine installed in a contaminated area with no removing possibility.

Use of this equipment in a manner other than those specified in this manual may jeopardize personal safety. Under no circumstances shall MP Biomedicals be liable for damages due to the improper handling, abuse, or unauthorized repair of these products. This warranty does not extend to units which have been altered or modified, or to damage to products or parts there of which have had the serial number removed, altered or defaced. The warranty does not 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. MP Biomedicals assumes no liability, expressed or implied, for use of this equipment.

Use of non-approved kits and reagents with the FastPrep-96 instrument is not covered under this warranty.

7. Appendices

7.1 APPENDIX 1: Maintenance & Cleaning

Maintenance: The FastPsrep-96 instrument requires no scheduled maintenance. Clean surfaces immediately after contact with sample solutions or reagents. Remove sample holder to wipe inner surfaces.

Cleaning: The FastPrep-96 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 may be sprayed in the chamber. Always cleanup 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-96 instrument, spills should be cleaned immediately, and appropriate decontamination carried out. The FastPrep-96 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 level biosafety facility and should only be maintained or serviced by personnel trained in safe handling practices specific to the infectious agent.

Fuse Replacement:

CAUTION: Disconnect input power before replacing fuse. For continued fire protection replace fuse only with the specified type and appropriate rating. Fuse rating is 4 Amp (T4A250V). 2 extra fuses are provided with the accessories. If a fuse blows, follow the steps below for replacement (Ref. Figure 7).

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

7.2 APPENDIX 2: An Explanation of FastPrep-96 Instrument Speed Settings

The cell disruption process during a FastPrep-96 instrument run is caused by the collision of matrix and sample within the FastPrep-96 instrument sample well. The rate of collision and energy of impact (both of which determine the effectiveness of the disruption process) are a function of the FastPrep-96 instrument speed settings and specific gravity of the bead material used. The FastPrep-96 instrument speed settings in rpm 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-96 instrument speed setting will increase the rate of collision by 50% and at the same time increase the energy of impact by 125%. The FastPrep-96 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 from MP Biomedicals, cell membrane disruption and nucleic acid yield is maximized.

7.3 APPENDIX 3: The FastPrep-96 Product Line

MagBeads FastDNA Kit for Soil

The MagBeads FastDNA Kit for Soil is designed for the rapid isolation of high-quality genomic DNA from soil samples. When used with Lysing Matrix tubes and the FastPrep-96 instrument, microorganisms present in soil can be efficiently lysed by bead beating, helping support consistent sample preparation across multiple samples. Specially formulated reagents help remove common soil-derived inhibitors such as humic acid, polysaccharides, and phenolic compounds, producing purified DNA suitable for downstream molecular applications including PCR, restriction digestion, and electrophoresis.

MagBeads FastDNA Kit for Microbiome

The MagBeads FastDNA Kit for Microbiome is designed for genomic DNA extraction from a broad range of microorganisms and complex biological or environmental samples. Following mechanical lysis with the FastPrep-96 instrument, the kit can be used to purify DNA suitable for downstream applications such as PCR, qPCR, and metagenomic library preparation. This kit is well suited for microbiome studies requiring efficient recovery of DNA from diverse sample matrices.

MagBeads FastDNA Kit for Feces

The MagBeads FastDNA Kit for Feces is designed for the rapid isolation of high-quality genomic DNA from fresh or frozen fecal samples. Used in combination with bead beating on the FastPrep-96 instrument, the workflow enables efficient disruption of host cells and microorganisms commonly found in fecal material. Reagents are formulated to reduce inhibitors that may interfere with downstream analysis, making the purified DNA suitable for applications such as PCR and related molecular workflows.

MagBeads FastDNA Kit

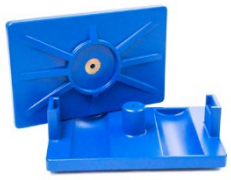
The MagBeads FastDNA Kit is designed for flexible extraction of genomic DNA from a wide variety of sample types, including animal tissue, cells, blood, saliva, swabs, dried blood spots, and semen. When paired with rapid sample disruption on the FastPrep-96 instrument, the kit supports efficient high-throughput preparation of DNA for downstream molecular applications including PCR and qPCR. This kit provides a useful general-purpose option for laboratories working across multiple sample types.

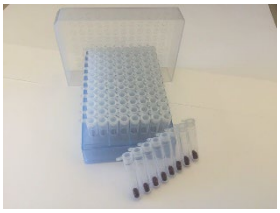
MagBeads FastRNA Kit for Blood

The MagBeads FastRNA Kit for Blood is designed for purification of total RNA from whole blood samples. Following sample preparation with compatible workflows, the kit supports efficient RNA isolation suitable for downstream applications such as RT-qPCR. The chemistry is designed to simplify purification while helping preserve RNA integrity, making it a useful option for laboratories processing blood samples in higher throughput formats.

7.4 APPENDIX 4: Accessories & Spare Parts

Description		Qty	Cat.No.
	Red Clickmaster Ratchet Nut	1	119696170
	Dual Plate Holder Assembly	1	119696168
	6’ Power Cord 6’ EU Power Cord	1 1	119696166 116002518
	Chamber Bottom	1	119696112
	Chamber Top	1	119696115
	Chamber Hinge	1	119696119
	Start Button	1	119696151

	Stop Button	1	119696143
	Time / Speed Potentiometer; Knob Assembly	1	119696155
	Emergency Stop Button	1	119696228
	Top Crossbar	1	119696104
	1/4-28 x 5" Threaded Rod	1	119696105
	LargeFlex™ Adapter 2 x 250 mL tube holder	1	116010590
	TeenFlex™ Adapter 24 x 15 mL tube holder	1	116010560
	TallFlex™ Adapter 48 x 4.5 mL tube holder	1	116010580

	BigFlex™ Adapter 8 x 50 mL tube holder	1	116010550
	QuickFlex™ Adapter 96 x 2 mL tube holder	1	116010570
	ConeFlex™ Adapter For use of FastPrep-24 adapters on FastPrep-96	1	116010595
	Lysing Matrix A	1 4 10	116980001 116980004 116980010
	Lysing Matrix B	1 4 10	116981001 116981004 116981010
	Lysing Matrix C	1 4 10	116982001 116982004 116982010
	Lysing Matrix D	1 4 10	116983001 116983004 116983010
	Lysing Matrix E	1 4 10	116984001 116984004 116984010

	Lysing Matrix S	1 4	116925001 116925004
	Lysing Matrix Y	1 4 10	116960001 116960004 116960010

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