

SINCE 1889



Yamato Scientific
America

Yamato Pulverizer / Tissue Homogenizer

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NOTES

Handwriting practice lines consisting of 20 horizontal dashed lines.

Multi-beads Shocker

Rapid Pulverizer (3D Figure-Eight Rotation Movement Technology)

MADE

IN

JP

MBS3200USY(S) / MBS3200USYC(S)

Maximum rotation
speed of motor

3000 rpm

Programs

Can store
up to 20

Timer

0-999 sec

Airborne Noise

less than or equal
to 40 dBA

An advanced pulverizer / tissue homogenizer designed for rapid processing of up to 24 samples simultaneously, including yeast, bacteria, molds, and tough animal and plant tissues. Utilizing the 3D figure-eight motion principle, along with various tubes, rods and beads, it can pulverize samples from diverse fields within seconds.



■ Features

- Different program controls enhance analytical sensitivity and ensure consistent reproducibility
- Multiple samples can be pulverized simultaneously under identical conditions, and individual samples can be pulverized without the need for balancing
- Equipped with a selection of pulverizing temperature conditions such as freezing, low temperature, and room temperature
- Low liquid nitrogen usage during freeze pulverizing (0.2L/sample)
- A variety of materials are available for sample tubes, including resin, titanium, stainless steel, alumina, agate, and tungsten carbide
- Cost-effective disposable plastic containers, available in sizes ranging from 2ml to 100ml, can be used as pulverizing containers, saving both time and expense
- This tabletop model features an exceptionally quiet design, making it suitable for use in laboratories

Programmable controls allow instantaneous freeze, low-temperature, and room-temperature pulverizing, as well as stirring and mixing in a wide range of fields.

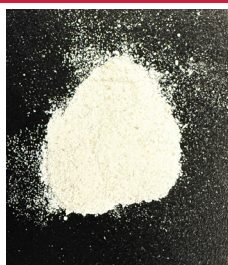
PULVERIZATION IN SECONDS!

Human Tooth

BEFORE



AFTER



10
SEC

Room Temperature

Pork Femur

BEFORE



AFTER



10
SEC

Room Temperature

Horse Mane

BEFORE



AFTER

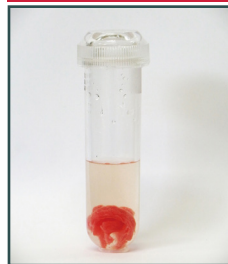


10
SEC

Liquid Nitrogen

Virus Infected Pig Tonsils

BEFORE



AFTER



15
SEC

4°C

■ Specifications

PARAMETERS	MBS3200USY(S)	MBS3200USYC(S) <i>with cooling function</i>
Programmable controller	Back-lighted touch panel. Can store up to 20 programs	
Maximum rotation speed of motor	3000 rpm	
Airborne noise	≤40 dBA (operated at 3000 rpm w/o specimens, measured at 60 cm from machine)	
Ambient temperature	4°C ~ 30°C	
Ambient relative humidity	20% ~ 60%	
Atmospheric pressure	70 ~ 100 kPa	
Continuous timer	0-999 sec or continuous setting	
INTERMITTENT OPERATION		
Timer	ON time 0-999 sec OFF time 0-999 sec cycle 999	SV1 ON time 0-999 sec OFF time 0-999 sec cycle 999 SV2 ON time 0-999 sec OFF time 0-999 sec cycle 999
Dimensions (mm)	422W x 468D x 451H	
Weight (kg)	32	33
Power source	Single phase AC110~115V 50/60Hz 10A (with transformer) Single phase AC200~230V 50/60Hz 5A	
Frequency	50/60Hz ±5%	
Multi-sample holder	2/3 ml x 8, 10/22/50 ml x 4 container holders	
MBS SET	MBS-3200USY(S)A composed of MBS-3200USY(S) and YK-MSH004(S)UY sample holder with accessories	MBS-3200USYC(S)A composed of MBS-3200USYC(S), CF-303Y/313Y Chiller, and YK-SHC2318(S)UY sample holder with accessories

■ Accessories

Dedicated sample tubes

- Tough and reliable tubes for freezing, cooling, and room temp. pulverizing
- Low temperature controlled pulverizing, such as 0°C to 4°C is possible
- Disposable plastic tubes that can be used even under liquid nitrogen conditions
- Optimal pulverizing for each sample volume from 2ml to a maximum of 100ml tubes
- Wide variety of materials (resin, PTFE, alumina, agate, zirconia, silicon nitride, iron, tungsten carbide, stainless steel, titanium, etc.)



Sample holders

- A variety of sample holders available with shapes that match the dedicated sample tube
- Freeze and cooling pulverizing of 24 samples are also possible.
- Large-capacity instantaneous freezing and cooling pulverizing is possible with simultaneous pulverizing of 4 x 50ml and 2 x 100ml disposable containers.
- Wide variety of materials (resin, PTFE, alumina, agate, zirconia, silicon nitride, iron, tungsten carbide, stainless steel, titanium, etc.)

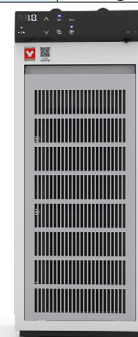


Custom-made products are also available with specific materials

■ Complementary Unit for MBS3200USYC(S)

CF-303Y/313Y Water Circulator

System/	Closed circulation
Circulating water	Tap water Anti-freeze solution (for 10°C or lower)
Temperature setting range	-20°C ~ 30°C (no heating function)
Max. flow rate	~ 10L/min.
Max. head	~ 5.7m
Temperature control accuracy	±1.0 °C (≥ 0°C) ±1.5 °C (< 0°C)
Cooling capacity (liquid temp)	~450W at 10°C ~330W at -10°C
Water bath capacity	~3.9L (Liquid volume 3.5L)
Power source	Single phase AC115V 6.8A with plug (CF-303Y) Single phase AC220V 4A no plug (CF-313Y)
External dimension (WxDxH) mm	205 x 396 x 535 (225 x 434 x 564) (including protrusions)
Weight	~30kg



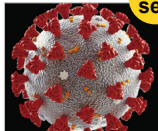
CF-303Y
CF-313Y

TARGET MARKETS

BIO TECHNOLOGY

Instantly crushes everything from yeast to animal and plant tissues and bones in a frozen disposable tube

VIRUS INFECTED ORGAN



Low temperature

15 sec

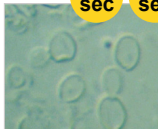
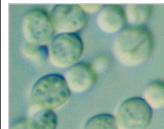
MOUSE FEMUR



10 sec

Liquid nitrogen

YEAST



4°C / Liquid nitrogen

90 sec

10 sec

FRESH PLANT LEAF



10 sec

Liquid nitrogen

Application

- Elucidation of the pathology of COVID-19 and vaccine development
- Regenerative medicine research (stem cell extraction)
- Sample preparation for omics analysis
- DNA identification
- Nucleic acid extraction of pathogenic viruses and microorganisms
- Extraction of active viruses and microorganisms
- Detection of pathogens in seafood
- High-purity RNA extraction from clinical specimens
- Sample preparation for analysis of trace elements in food
- ChIP-Seq analysis
- Plant quarantine
- Freezing and pulverizing of animal tissues, plant tissues, and microorganisms

GEO SCIENCE

Accelerate preparation of precise analytical samples, including rocks and minerals!

PERIDOTITE



Room temperature

30 sec

CHART



Room temperature

20 sec

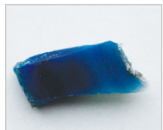
CORE



Room temperature

45 sec

AGATE



Room temperature

10 sec

Application

- Isotope ratio analysis
- ICP-MS analysis
- X-ray fluorescence analysis
- Zircon separation
- Nanoparticle preparation

ANALYTICAL SCIENCE

From rocks, rubber, and plastics to biological tissue, this greatly reduces sample preparation time and cost

SLATE



Room temperature

10 sec

FILM COATED TABLETS



Liquid nitrogen

30 sec

Application

- X-ray fluorescence analysis
- Preparation of materials for ICP-MS analysis
- Analysis of asbestos-containing building materials
- Soil nutrient analysis (collection of samples under 2mm)
- Creation of nanoparticles from pharmaceutical and industrial dye stuff (cold crushing)
- Analysis of harmful substances contained in resins (formaldehyde, etc.)
- Analysis of RoHS regulations

MATERIAL SCIENCE

Proven track record in accelerating research and development of next generation ceramic and energy materials

GEOCEMENT



Room Temperature

20 sec

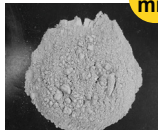
CERAMIC



Room temperature

3 min

HARDENED CONCRETE



Room temperature

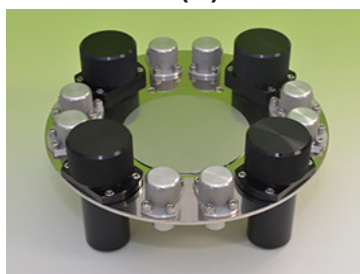
1 min

Application

- Development of next-generation battery materials
- Reaction development
- Other next generation material development

Sample Holders and Accessories

■ YK-MSH004(S)UY Multi- Sample Holder








for 8 x 2ml/3ml pulverizing tubes, 4 x 22ml/50ml pulverizing tubes



● Operational Accessories included with YK-MSH004(S)UY Sample Holder

Pulverizing tube adapters			Pulverizing media (metal rods)		
Product code	Description		Product code	Description	
YK-ADP03F2UY 1 pc.	50ml pulverizing tube adapter for 3ml and 2ml pulverizing tubes. Inserted into the 50ml tube hole. 3ml tubes fit directly inside, but 2ml tubes need be fitted with a 2ml adapter. One or two samples can be pulverized simultaneously.		YK-MC0218R(S)UY 10 pcs.	metal rod used with 2ml pulverizing tubes	
YK-ADP023(S)UY 8 pcs.	for holding 2ml tubes and is inserted into the 3ml tube holes		YK-MC0316(S)UY 10 pcs.	metal rod used with 3ml pulverizing tubes	
YK-ADP10UY 4 pcs.	for holding 10ml tubes and is inserted into the 50ml tube holes		YK-MC1020RUY 4 pcs.	metal rod used with 10ml pulverizing tubes	
YK-ADP22UY 4 pcs.	for holding 22ml tubes and is inserted into the 50ml tube holes		YK-MC1025RUY 4 pcs.	metal rod used with 10ml pulverizing tubes	
Transparent pulverizing tubes (used w/ liquid nitrogen)			YK-MC2225RUY 4 pcs.	metal rod (short) used with 22ml pulverizing tubes	
Product code	Description		YK-MC2235RUY 4 pcs.	metal rod (long) used with 22ml pulverizing tubes	
YK-ST0220PC(S)UY 100 pcs.	2ml transparent PC tubes used for freeze pulverizing		YK-MC5028RUY 4 pcs.	metal rod (short) used with 50ml pulverizing tubes	
YK-ST0320PCFUY 100 pcs.	3ml transparent PC tubes used for freeze pulverizing		YK-MC5038RUY 4 pcs.	metal rod used (long) with 50ml pulverizing tubes	
YK-ST1010PCUY 10 pcs.	10ml transparent PC tubes used for freeze pulverizing		YK-MC5055RUY 4 pcs.	metal rod used with 22ml and 50ml pulverizing tubes	
YK-ST2210PCUY 10 pcs.	22ml transparent PC tubes used for freeze pulverizing				
YK-ST5010PCRUY 10 pcs.	50ml transparent PC tubes used for freeze pulverizing				






Sample Holders and Accessories

● Included Accessories with YK-MSH004(S)UY Sample Holder

Opaque pulverizing tubes (used w/ liquid nitrogen)		
Product code	Description	
YK-ST0220FC(S)UY 100 pcs.	2ml opaque PE pulverizing tubes	
YK-ST0320FCUY 100 pcs.	3ml opaque PE pulverizing tubes	
YK-ST1010CUY 10 pcs.	10ml opaque PE pulverizing tubes	
YK-ST2210CUY 10 pcs.	22ml opaque PE pulverizing tubes	
YK-ST5010CUY 10 pcs.	50ml opaque PE pulverizing tubes	

Magnets		
Product code	Description	
YK-MG136UY 1 pc.	small (for removal of metal rod)	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	

Translucent pulverizing tubes used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-ST0250F(S)UY 100 pcs.	2ml translucent PP pulverizing tubes	
YK-ST0350FOUY 100 pcs.	3ml translucent PP pulverizing tubes	
YK-ST1010PPUY 10 pcs.	10ml translucent PP pulverizing tubes	
YK-ST2210PPUY 10 pcs.	22ml translucent PP pulverizing tubes	
YK-ST5010PPRUY 10 pcs.	50ml translucent PP pulverizing tubes	

Accessories Multi-beads Shocker


Sample Holders and Accessories

■ YK-SHAL224F(S)UY (2ml x 24) Sample Holder




● Included Accessories with YK-SHAL224F(S)UY Sample Holder


Pulverizing media (metal rod)

Product code	Description	
YK-MC0218R(S)UY 10 pcs.	metal rod used with 2ml pulverizing tubes	


Transparent pulverizing tube (used w/ liquid nitrogen)

Product code	Description	
YK-ST0220PC(S)UY 100 pcs.	2ml transparent PC tubes used for freeze pulverizing	



Opaque pulverizing tube (used with liquid nitrogen)

Product code	Description	
YK-ST0220FC(S)UY 100 pcs.	2ml opaque PE pulverizing tubes	

Translucent pulverizing tube used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-ST0250F(S)UY 100 pcs.	2ml translucent PP pulverizing tubes	

Magnets

Product code	Description	
YK-MG136UY 1 pc.	small (for removal of metal rod)	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	


Sample Holders and Accessories

■ YK-SH1002(S)UY (100ml x 2) Sample Holder






● Included Accessories with YK-SH1002(S)UY Sample Holder




Pulverizing media (metal rod)

Product code	Description	
YK-MC100R(S)UY 2 pcs.	metal rod used with 100ml pulverizing tubes	


Transparent pulverizing tubes (used w/ liquid nitrogen)

Product code	Description	
YK-ST10010PCR(S)UY 10 pcs.	100ml PC tubes used for freeze pulverizing with inner caps and fitted silicon O-rings	 
YK-CP10010PCUY 10 pcs.	Outer cap for 100ml PC pulverizing tubes	

Translucent pulverizing tubes used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-ST10010PPR(S)UY 10 pcs.	100ml pulverizing PP tube with inner cap	 
YK-CP10010PPUY 10 pcs.	100ml pulverizing PP tube outer cap	

Magnets

Product code	Description	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	

Accessories Multi-beads Shocker


Sample Holders and Accessories

■ YK-SHAL2318(S)UY (2 - 3ml x 18) Sample Holder





● Included Accessories for YK-SHAL2318(S)UY Sample Holder



Pulverizing tube adapter

Product code	Description	
YK-ADP023(S)UY 18 pcs.	For holding 2ml tubes and is inserted into the 3ml sample holder tube holes	



Transparent pulverizing tubes (used w/ liquid nitrogen)

Product code	Description	
YK-ST0220PC(S)UY 100 pcs.	2ml transparent PC tubes used for freeze pulverizing	
YK-ST0320PCFUY 100 pcs.	3ml transparent PC tubes used for freeze pulverizing	



Opaque pulverizing tubes (used w/ liquid nitrogen)

Product code	Description	
YK-ST0220FC(S)UY 100 pcs.	2ml opaque PE pulverizing tubes	
YK-ST0320FCUY 100 pcs.	3ml opaque PE pulverizing tubes	



Pulverizing tubes used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-STC0220FSEUY 100 pcs.	2ml pulverizing PP tube with o-ring * can be used with metal rod as well as glass or zirconia beads	
YK-STC0350FOUY 100 pcs.	3ml pulverizing PP tube with o-ring * can be used with metal rod as well as glass or zirconia beads	

Pulverizing media (metal rod)

Product code	Description	
YK-MC0218R(S)UY 18 pcs.	metal rod used with 2ml pulverizing tubes	
YK-MC0316(S)UY 18 pcs.	metal rod used with 3ml pulverizing tubes	

Magnets

Product code	Description	
YK-MG136UY 1 pc.	small (for removal of metal rod)	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	


Sample Holders and Accessories

■ YK-SHC224F(S)UY (2ml x 24) Sample Holder




● Included Accessories with YK-SHC224F(S)UY Sample Holder



Pulverizing media (metal rod)

Product code	Description	
YK-MC0218R(S)UY 10 pcs.	metal rod used with 2ml pulverizing tubes	



Pulverizing media (glass or zirconia beads)

Product code	Description	
YK-YGB01UY 500g	0.1mm glass beads	
YK-YGB05UY 500g	0.5mm glass beads	
YK-YZB01UY 200g	0.1mm zirconia beads	
YK-YZB05UY 200g	0.5mm zirconia beads	

Pulverizing tubes used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-STC0250FSUY 100 pcs.	2ml pulverizing PP tube used with pictured sample holder * use with glass or zirconia beads	
YK-STC0220FSE 100 pcs.	2ml pulverizing PP tube with o-ring * use with metal rod and glass or zirconia beads	

Magnets

Product code	Description	
YK-MG136UY 1 pc.	small (for removal of metal rod)	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	

Accessories Multi-beads Shocker


Sample Holders and Accessories

■ YK-SHC2318(S)UY (2-3ml x 18) Sample Holder





● Included Accessories for YK-SHC2318(S)UY Sample Holder



Pulverizing tube adapter

Product code	Description	
YK-ADP023(S)UY 18 pcs.	For holding 2ml tubes and inserted into the 3ml sample holder tube holes	



Pulverizing media (metal rod)

Product code	Description	
YK-MC0218R(S)UY 18 pcs.	metal rod used with 2ml pulverizing tubes	
YK-MC0316(S)UY 18 pcs.	metal rod used with 3ml pulverizing tubes	


Pulverizing media (glass or zirconia beads)

Product code	Description	
YK-YGB01UY 500 mg	0.1mm glass beads	
YK-YGB05UY 500 mg	0.5mm glass beads	
YK-YZB01UY 200 mg	0.1mm zirconia beads	
YK-YZB05UY 200 mg	0.5mm zirconia beads	

Pulverizing tubes used within an approximate temperature range of -10°C ~ 20°C.

Product code	Description	
YK-STC0220FSEUY 100 pcs.	2ml pulverizing PP tube with o-ring * can be used with metal rod as well as glass or zirconia beads	
YK-STC0350FOUY 100 pcs.	3ml pulverizing PP tube with o-ring * can be used with metal cone as well as glass or zirconia beads	

Magnets

Product code	Description	
YK-MG136UY 1 pc.	small (for removal of metal rod)	
YK-MG2810UY 1 pc.	large (for removal of metal rod)	