



# Versati™



Versati™ Centrifuge Models: T1000 and T1000R



Versati™ Centrifuge Models: M22 and M22R

## Tabletop Centrifuge

*Best Choice for High Performance and Superior Quality Tabletop Centrifuge*



**ESCO**

WORLD CLASS. WORLDWIDE.



## Welcome to Esco

*Esco's Vision is to provide enabling technologies for scientific discoveries to make human lives healthier and safer.*



Esco Micro Pte Ltd  
Cert. No: 651076



PT Esco Bintan Indonesia  
Cert. No: 651333/E



PT Esco Bintan Indonesia  
Cert. No: Q2N130383797001

Esco represents innovation and forward-thinking designs, which are all coupled with the highest standard quality since 1978. The Esco Group of Companies remains dedicated in delivering innovative solutions for the clinical, life sciences, research, industrial, laboratory, pharmaceutical and IVF community. With the most extensive product line in the industry, our products have passed a number of international standards and certifications. Esco operates under ISO 9001, ISO 14001 and ISO 13485.

**Availability and Accessibility.** Headquartered in Singapore, manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, services and marketing subsidiaries are located in 12 major markets including the US, UK, Japan, China and India. Our regional distribution centers are located in China, UK, India, Malaysia, Philippines, Singapore, South Africa, South Korea and United States of America. Because of our worldwide presence, you can be sure that Esco is within your reach.

**High Quality, Reliable and Dependable.** Our customers are confident that only with the best quality, reliable, and dependable products, can they be sure of the accuracy of their research and procedures. Cross functional teams from Esco Production, R&D, Quality Assurance and Senior Management, are regularly assembled to review and implement areas for improvement.

**Esco Cares for Your Safety.** Esco focuses on providing safety not just for your samples but also for users.

**Esco Cares for Your Comfort.** Comfort of our users is ensured by building ergonomic designs and by reducing the noise levels of the units.

**Esco Cares for the Environment.** One in every four of Esco's employees is involved in Research and Development and a number of these evaluate new components and/or designs to produce energy efficient equipment. Being GREEN is more than just modifying the parts we use to produce a new energy efficient technology, it also embodies the every aspect of the company.

**Customer Service and Support.** Our service does not stop once purchase has been made. Esco gives on-time customer service and offers end-user seminars, service training, preventive maintenance, provides educational materials and informative videos.

As Esco takes the opportunity to respond to the world's needs, we aim not just to contribute in the advancement of scientific discoveries but also in making the world a safer, healthier and a better place to live in.

# Versati™

M22 and M22R • T1000 and T1000R • Centrifuge

# Products and Application

## Life Sciences Laboratory Equipment

### Sample Preparation

- Class I Biological Safety Cabinets
- Class II Type A2 Biological Safety Cabinets
- Class II Type B2 Biological Safety Cabinets
- Class III Biological Safety Cabinets
- Horizontal Laminar Flow Clean Benches
- Vertical Laminar Flow Clean Benches
- Laboratory Animal Research Workstations
- Freeze Dryers

### Sample Cultivation

- CO<sub>2</sub> Incubators with Cooling System
- CO<sub>2</sub> Incubators with Stainless Steel Exterior
- CO<sub>2</sub> Incubators (Water Jacketed)
- Laboratory Shakers

### Sample Analysis

- PCR Thermal Cyclers**
- Conventional Thermal Cyclers
  - Real-time PCR Systems

### PCR Sample Handling

- Microplate Shakers
- PCR Cabinets

### Sample Storage & Sample Protection Solutions

- Ultra-low Temperature Freezers
- Lab Refrigerators and Freezers
- Sample Database Management Software
- Intelligent Remote Monitoring Application Protocol
- Remote Monitoring, Datalogging, Programming Software
- Wireless Monitoring System

### Chemical Research

- Ductless Fume Hoods
- Laboratory Fume Hoods
- Fume Hood Airflow Monitors
- Exhaust Blowers
- Powder Weighing Balance Enclosures

### General Equipment

#### Laboratory Thermostatic Products

- Laboratory Oven
- Laboratory Incubator
- Refrigerated Incubator
- Constant Climate Chamber

## Medical / IVF Equipment

- Time-Lapse Embryo Incubators
- Benchtop Multi-room Embryo Incubators

- CO<sub>2</sub> Incubators
- IVF Workstation

- Anti-Vibration Table
- CO<sub>2</sub> / O<sub>2</sub> Temperature Validation Unit

## Pharmaceutical Equipment

### Airflow Containment

- Downflow Booths
- Ceiling Laminar Airflow Units
- Laminar Flow Horizontal Trolley
- Laminar Flow Vertical Trolley
- Laminar Flow Straddle Units
- Garment Storage Cabinet

### Isolation Containment

- Aseptic Containment Isolator (ACTI)
- Weighing and Dispensing Containment Isolator (WDCI)
- General Processing Platform Isolator (GPPI)

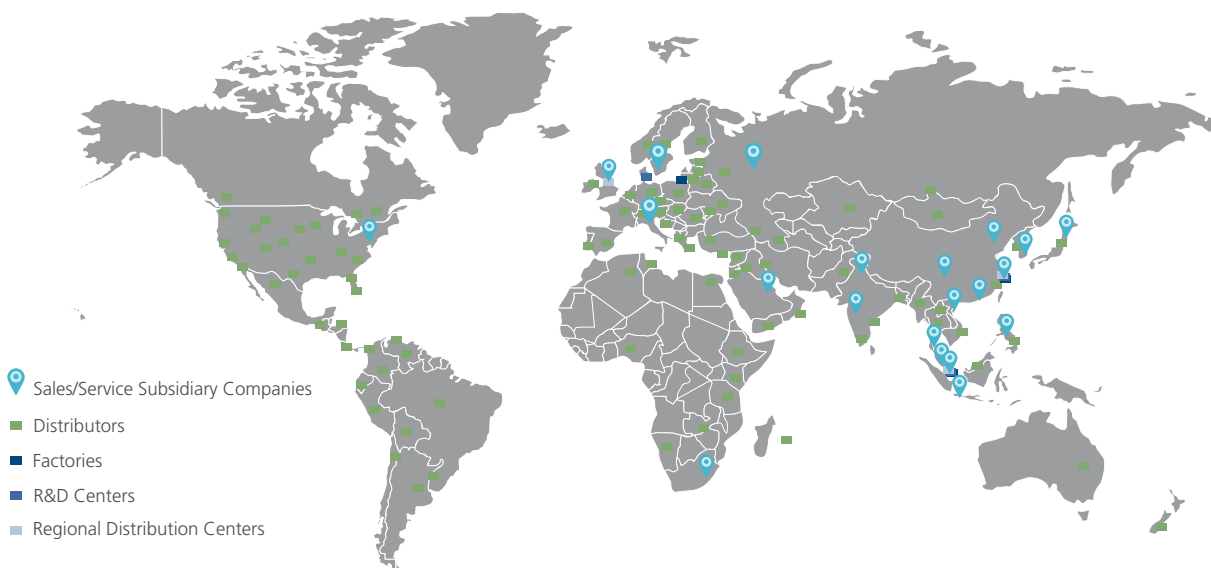
### Cross Contamination Facility Integrated Barrier

- Cleanroom Air Showers
- Air Shower Pass Box
- Cleanroom Transfer Hatch
- Pass Boxes
- Soft Wall Cleanroom
- Dynamic Passboxes and Dynamic Floor Label Hatches

### Barrier Isolation System

- Pharmacy Compounding Aseptic Containment Isolator (Recirculating)
- Pharmacy Compounding Aseptic Isolator
- Cytotoxic Safety Cabinets

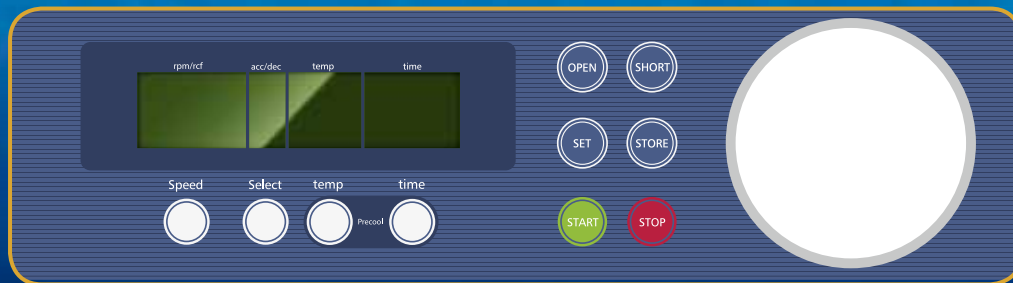
## Global Network



- 📍 Sales/Service Subsidiary Companies
- Distributors
- Factories
- R&D Centers
- Regional Distribution Centers

Esco proudly introduces our new family member- the Versati™ centrifuges, equipped with maintenance-free motors, robust mechanism and intelligent Ecourage™ microprocessor control system that offers you extreme reliability and safety. Covering microcentrifuge and low-to-high speed general-purpose centrifuge, with variety of rotors, adapters and accessories, the Versati™ has a strong versatility to fit all your needed application and suits a variety of consumable tubes, strips and plates.

Positioned as micro centrifuge, M22 and refrigerated M22R stand out with excellent features and versatility. M22 and M22R have a capacity of up to 44 x 1.5 / 2.0 ml and can accommodate 12x5 ml reaction tube or 4x8-pcr strips per run. With hematocrit rotor, it can accommodate 24 x capillaries per run for the determination of the hematocrit value. Its compact



### DISTINCT CONTROL PANEL AND INTELLIGENT ECOURAGE™ MICROPROCESSOR CONTROL SYSTEM

- Big rotary knob and buttons, convenient for rotation and operation.
- Large LCD screen with clear indication of running condition including rotor, speed, time etc.
- Operation panel is water-proof, can well protect the inner electric elements.
- Microprocessor with speed self-tested system.



Versati™ Centrifuge T1000 and T1000R



### DIVERSE CHOICES OF ROTORS

- Made of aluminum alloy.
- Automatic rotor recognition function minimizes the need for manual settings.
- Powerful motor provides high RCF (Relative Centrifugal Force) up to 21380g for M22/M22R and 24321g for T1000/T1000R.
- As many as 7 rotors with wide range of capacity for M22/M22R and 11 rotors for T1000/T1000R to meet all your needs.



### INTEGRATED DESIGN OF INTERIOR CENTRIFUGE CHAMBER

- The side plate and baseboard of centrifuge chamber are made by one-time punch forming of a whole piece of steel plate.
- No dead angle within the chamber, easy-to-clean and can reduce pollution at the greatest possibility.



Versati™ Centrifuge M22 and M22R

design saves space in your lab and its low-noise performance is preferred in any working area. The powerful refrigeration system of M22R keeps samples at temperature of as low as 4°C during a continuous run at 21380 x g.

The T1000 and refrigerated model T1000R stand out among the same level of products with their versatility, running features and easy handling. It can act as different model to meet all your application needs: micro centrifuge for DNA precipitations, high-capacity and low-to-high speed general-purpose centrifuge for cell application. T1000 & T1000R have a variety of rotors, with capacity up to 6 x 250 ml tubes, 28 x 15 ml conical tubes or 2 x 3 microtitre plates, and centrifugal forces up to 24321 x g.

### SAFETY LID LOCK

- *Motor driven lid lock, ensure safety and reliability.*
- *The lid can only be opened when rotor stops, and speed indicator is 0.*
- *With electromagnetic lid, automatic and smooth lid release allows one-hand-operation.*



### EMERGENCY SWITCH

- *In case of power failure or malfunction, the lid of the centrifuge can be opened manually via the emergency switch in order to protect your samples.*



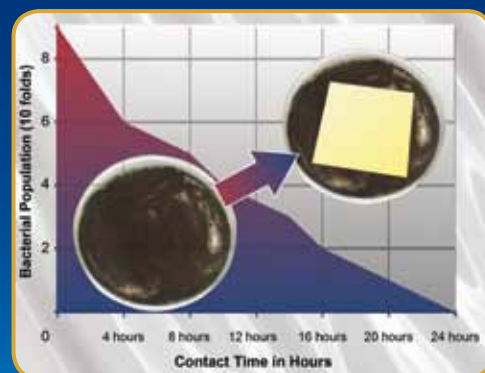
### MAINTENANCE-FREE, BRUSHLESS MOTOR

- *Equipped with German-originated motor, requiring neither bearing replacement nor change oil.*
- *No carbon brush, low interference. Electric-spark-free that ensure no interference to radio equipment.*
- *Low noise and smooth operation with superior mechanism design.*
- *Prolongs the lifespan and saves maintenance cost.*



### POLISHED AND PRACTICAL APPEARANCE

- *External surfaces are powder coated Esco ISOCIDE™ to eliminate 99.9% of surface bacteria within 24 hours of exposure. This technology ensures relatively aseptic condition.*
- *Ensures healthier, safer and cleaner lab environment.*



**ESCO**

WORLD CLASS. WORLDWIDE.

## Versati and Outstanding Features

Based on German manufacturing technology, especially in motor and rotor design, Versati™ centrifuges have elaborate mechanical performance not only in speed but also in flexibility and versatility.

- **Compact Design**

- Exceptional capability in compact dimensions maximizes workspace.
- Small footprint and curved design ensure comfortable loading and unloading of samples and cleaning of the unit.

- **High Rotor Speed**

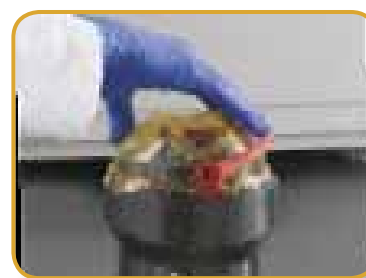
- Powerful combination of motor and rotor, results in high speed up to 15000 rpm/21380 x g for M22/M22R and 16000 rpm/24321 for T1000R and 21382 x g.

- **Large Capacity**

- Diverse specifications of rotors, make capacity respectively ranges from the minimum of 4 x 8 PCR strips (4 x 8 x 0.2 ml) to the maximum of 44 x 1.5 / 2.0 ml for M22/M22R, and from the minimum of 24 x 1.5 ml / 2 ml to the maximum of 6 x 250 ml for T1000/T1000R.

- **Incredible Flexibility**

- Wide choice of rotors with easy interchangeable ability meets all your applications using microliter, blood sample and Falcon type conical tubes. Huge selection of adapters allows centrifugation of practically all commercially available tubes.



## Powerful Refrigeration System (for M22R and T1000R)

- **Environment-Friendly Refrigeration Technology**

- Designed with CFC-free refrigeration system, causes no harm to the atmosphere.

- **High Temperature Ramp Rate**

- Compressor in Versati™ centrifuges has strong power which allows fast cooling rate. The time cost can be as low as 10 mins when temperature decreases from room temperature to 4°C.

- **Wide Range of Temperature**

- Versati™ centrifuges not only have a cooling function, but also a heating function. The temperature range is from -20°C to +40°C.

- **Perfect Performance**

- Swing-Bucket Rotors for T1000R can be spun at maximum speed and still maintain -2°C.

- **Fast Pre-cooling**

- If the samples are temperature-sensitive, it is useful to pre-cool the centrifuge, the rotor and eventually the buckets to the needed working temperature. Versati™ centrifuges provide fast pre-cooling function that is maintained even when centrifuge is not in use.

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## Superior Safety

- **Genuine-Protect™ Safety Lid Design**

- Safety Lid with motor-driven design provides a real safe protection from misoperation.

- **V-balance™ Weight Imbalance Protection**

- Versati™ centrifuges are equipped with active weight imbalance-identification system. In case of the rotor not being equally loaded, the drive will turn off during acceleration. The rotor decelerates to stand stop.

- **Overspeed Protection**

- Equipped with speed detection system, Versati™ centrifuges show the actual speed on the screen. Once the speed exceeds the safety range, the alarm will sound off and rotation is halted.

- **Over Temperature Protection**

- Over temperature alarm for chamber, rotor and frequency converter; the unit will stop running, providing comprehensive protection and prolongs the life time of Versati™ centrifuges.

- **Aerosol-tight and Autoclavable**

- High-quality, extremely robust aluminum lid for rotor allows aerosol-tight centrifugation. Rotor, Buckets, lids, and adapters are autoclavable (20 min, 121°C) to ensure sterility of the centrifuge environment.

- **Alarm System**

- Audible and visual alarms are activated during system failures and error message is displayed on LCD for troubleshooting.

- **Safety Standards Followed**

- Machines are all manufactured according to international safety regulations, such as IEC 61010, EN61010-1, EN61010-2-2, and ISO9001, ISO13458, CE.

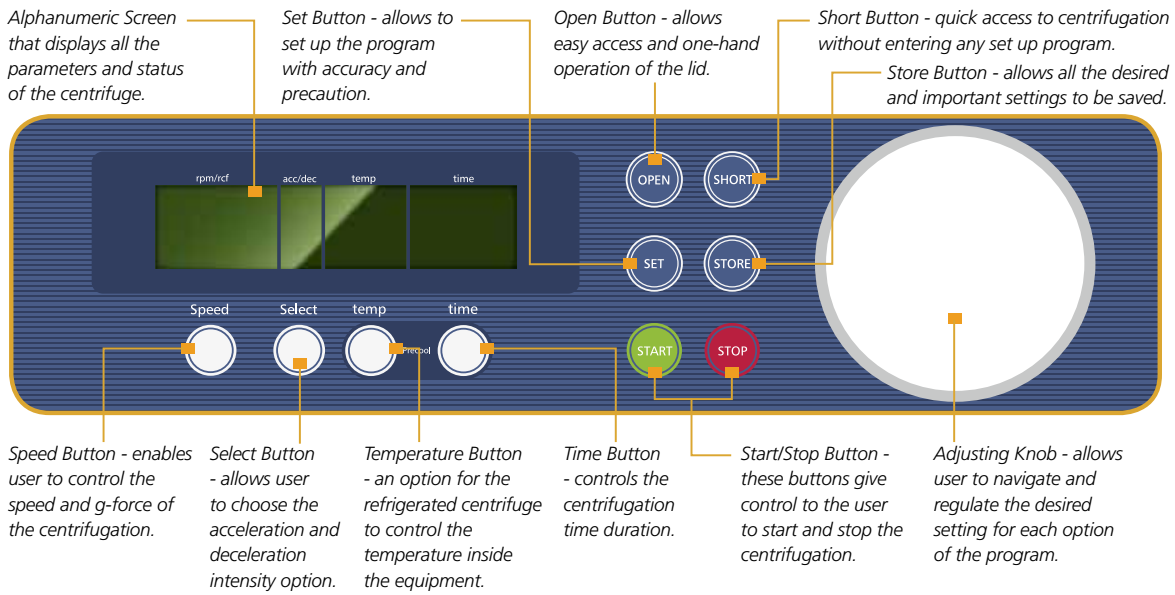
Versati™

M22 and M22R • T1000 and T1000R • Centrifuge

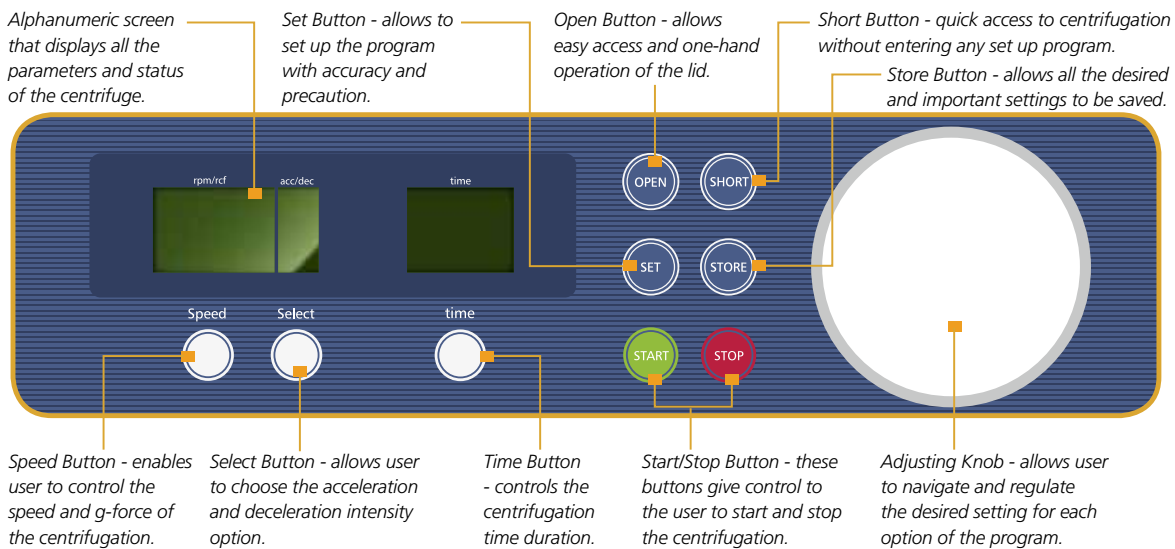
# Humanization Designed Ecourage™ Controller

Versati™ centrifuges with bright back-lit LCD display, simple intuitive key entry and unique turning knob for fast value setting are convenient in operation even with gloves on; greatly saves time for users.

## M22R / T100R Model:



## M22 / T1000 Model:



- **Smartdrive™ Rotor Auto Recognition**

- Interchangeable rotors can be automatically recognized and each rotor can only be set and run at the permitted maximum speed to protect the motor system with longer lifespan.

- **Large Storage Space**

- Versati™ centrifuges enable the users to edit and store up to 99 programs with combination of speed, centrifugal force, running time, temperature, acceleration/deceleration rate and rotor code on board in the machine which is enough for all users in a lab. A collection of pre-set values can be saved for quick and easy loading.

- **Various Operation Mode**

- Three types of spin mode : **short spin** for short running, **continuous spin** and **time-setting spin** (range from 10 s to 99 h 59 min) can be chosen to suit various applications.

- **Free Conversion between Speed and RCF**

- Users set either rotor speed or centrifugal force, and the system

can automatically convert one to the other parameter for different requirements.

- **Adjustable Acceleration Control System**

- To provide more choices for users to suit their experiment demands, Versati™ centrifuges offer 10 different types of acceleration/deceleration rate options.

- **Notification System**

- Automatic lid releases once the sample run is complete and audible alarm reminds users to take out samples. Audible alarm has a total of 10 different sounds to choose from.

- **Free Switch of Temperature Types**

- Versati™ centrifuges allow automatic conversions between degree Celsius and Fahrenheit.

- **Real Time Modification of Parameter**

- The parameters like rotary speed, RCF, running time and temperature can be adjusted during the operation to improve your working efficiency.

## M22/M22R High Speed Microcentrifuge for up to 15,000 rpm

Designed to accelerate your routine sample preparation processes.

ORDERING INFORMATION		
Model Code	Item Code	Description
M22-MB-8	6380001	Microlite centrifuge M22 main body, 230 VAC 50/60 Hz
M22-MB-9	6380002	Microlite centrifuge M22 main body, 120 VAC 50/60 Hz
M22R-MB-8	6380003	Microlite centrifuge M22R main body, 230 VAC 50/60 Hz
M22R-MB-9	6380004	Microlite centrifuge M22R main body, 120 VAC 50/60 Hz

### Rotors and Adapters for Centrifuges M22R and M22R

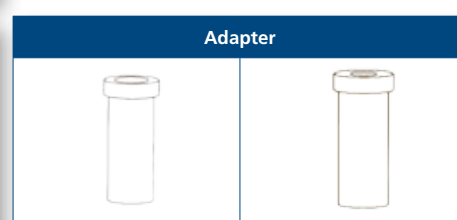
FIXED-ANGLE ROTOR	
Model No.	VST-ROT-001
Item Code	6380005
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	21 / 152
Deceleration in Seconds	18 / 173
Length	11 mm (0.4")
Angle	45°
Maximum Radius	85 mm (3.4")
Maximum Bore	11 mm $\varnothing$ (0.4" $\varnothing$ )
Maximum RCF	21380 x g
Maximum Speed	15000 rpm
Temperature at Maximum Speed	6°C



- 0.5 ml and 2.0 ml / 0.4 ml PCR tubes can be centrifuged with adapters in the fixed-angle rotor
- Rotor, lid and adapters are autoclavable (maximum of 121°C, 20 minutes)

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Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item Code	6380013	6380014
Number of Tubes and Tube Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 mL PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm $\varnothing$ (0.3" $\varnothing$ )	6 mm $\varnothing$ (0.2" $\varnothing$ )
Length	45 mm (1.8")	

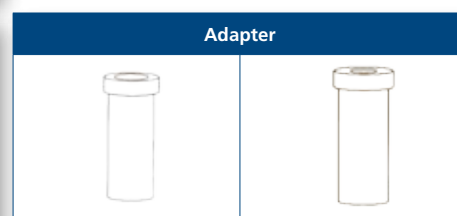


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-002
Item Code	6380006
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	21 / 151
Deceleration in Seconds	21 / 217
Length	40 mm (1.6")
Angle	45°
Maximum Radius	85 mm (3.4")
Maximum Bore	11 mm $\varnothing$ (0.4" $\varnothing$ )
Maximum RCF	21380 x g
Maximum Speed	15000 rpm
Temperature at Maximum Speed	4°C



- 0.5 ml and 2.0 ml / 0.4 ml PCR tubes can be centrifuged with adapters in the fixed-angle rotor
- High quality, extremely robust aluminum lid for rotor
- Aerosol-tight centrifugation
- Rotor, lid and adapters are autoclavable (maximum of 121°C, 20 minutes)

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item Code	6380013	6380014
Tubes and Maximum Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 ml PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm $\varnothing$ (0.3" $\varnothing$ )	6 mm $\varnothing$ (0.2" $\varnothing$ )
Length	45 mm (1.8")	



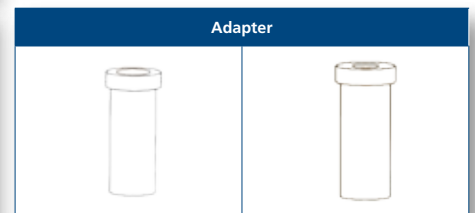


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-003
Item Code	6380007
Number of Tubes and Tube Capacity	30 x 1.5 / 2.0 ml
Acceleration in Seconds	29 / 235
Deceleration in Seconds	27 / 258
Length	11 mm (0.4")
Angle	40°
Maximum Radius	94 mm (3.7")
Maximum Bore	11 mm $\varnothing$ (0.43" $\varnothing$ )
Maximum RCF	19153 x g
Maximum Speed	13500 rpm
Temperature at Maximum Speed	7°C



- 0.5 ml and 1.5 ml / 2.0 ml PCR tubes can be centrifuged with adapters in the fixed-angle rotor
- Rotor, lid and adapters are autoclavable (maximum of 121°C, 20 minutes)

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item Code	6380013	6380014
Number of Tubes and Tube Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 ml PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm $\varnothing$ (0.3" $\varnothing$ )	6 mm $\varnothing$ (0.2" $\varnothing$ )
Length	45 mm	



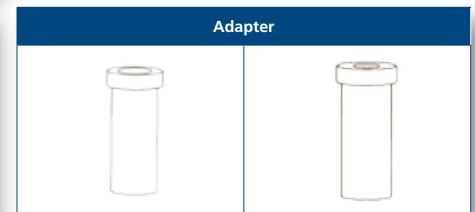
FIXED-ANGLE ROTOR	
Model No.	VST-ROT-004
Item Code	6380008
Number of Tubes and Tube Capacity	44 x 1.5 / 2.0 ml
Acceleration in Seconds	18 / 136
Deceleration in Seconds	17 / 133
Length	11 mm (0.43")
Angle	45°
Maximum Radius	87 / 71 mm (3.4" / 2.8")
Maximum Bore	11 mm $\varnothing$ (0.43" $\varnothing$ )
Maximum RCF	17722 / 14463 x g
Maximum Speed	13500 rpm
Temperature at Maximum Speed	7°C



- 0.5 ml and 1.5 ml / 2.0 ml PCR tubes can be centrifuged with adapters in the fixed-angle rotor
- Rotor, lid and adapters are autoclavable (maximum of 121°C, 20 minutes)

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Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item code	6380013	6380014
Number of Tubes and Tube Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 ml PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm $\varnothing$ (0.3" $\varnothing$ )	6 mm $\varnothing$ (0.2" $\varnothing$ )
Length	45 mm	

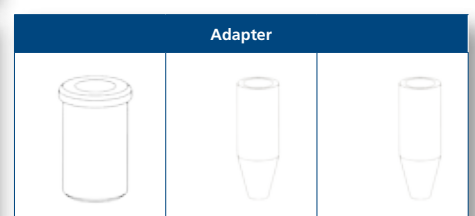


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-006
Item Code	6300010
Number of Tubes and Tube Capacity	12 x 5 ml
Acceleration in seconds	24 / 148
Deceleration in seconds	17 / 320
Length	13 mm (0.5")
Angle	45°
Maximum Radius	85 mm (3.3")
Maximum Bore	1.7 mm $\varnothing$ (0.07" $\varnothing$ )
Maximum RCF	19974 x g
Maximum Speed	14500 rpm
Temperature at Maximum Speed	4°C



- 1.0 mL, 1.8 ml and 1.5 ml / 2.0 ml PCR tubes can be centrifuged with adapters in the fixed-angle rotor
- Rotor, lid and adapters are autoclavable (maximum of 121°C, 20 minutes)

Adapter Model No.	VST - ADP - 003	VST - ADP - 004	VST - ADP - 005
Item code	6380015	6380016	6380017
Number of Tubes and Tube Capacity	1 x 1.5 ml - 2.0 ml	1 x 1.0 ml Cyro tubes	1.8 ml Cyro tubes
Total Number of Tubes per Rotor	12		
Adapter Bore	11 mm $\varnothing$ (0.43" $\varnothing$ )	12.6 mm $\varnothing$ (0.5" $\varnothing$ )	
Length	42 mm (1.7")	41 mm (1.6")	48 mm (1.9")



FIXED-ANGLE ROTOR	
Model No.	VST-ROT-007
Item Code	6380011
PCR Strips	4 x 8
Acceleration in Seconds	17 / 150
Deceleration in Seconds	20 / 95
Angle	45°
Maximum Radius	61 mm (2.4")
Maximum Bore	6 mm ø (0.2"ø)
Maximum RCF	15342 x g
Maximum Speed	15000 rpm
Temperature at Maximum Speed	2.5°C



- Only suitable with 0.2 ml 8 PCR strips, no adapter
- Rotor and lid are autoclavable (maximum of 121°C, 20 minutes)

HEMATOCRIT ROTOR	
Model No.	VST-ROT-008
Item Code	6380012
Capillaries	24
Acceleration in Seconds	15 / 120
Deceleration in Seconds	15 / 125
Angle	90°
Maximum Radius	93 mm (3.7")
Maximum Bore	6 mm ø (0.2"ø)
Maximum RCF	14811 x g
Maximum Speed	12000 rpm



- Only for M22 centrifuge, not applicable with M22R
- Ideal for medical field in the determination of Hematocrit value

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## ROTORS AND ADAPTERS FOR CENTRIFUGES T1000 AND T1000R

SWING-BUCKET ROTOR	
Model No.	VST-ROT-009
Item Code	6380022
Bucket/ Max. Capacity	4 x 250 ml
Acceleration in Seconds	34 / 309
Deceleration in Seconds	36 / 458
Angle	0-90°
Maximum Radius	167 mm (6.6")
Maximum RCF	3780 x g
Maximum Speed	4500 rpm
Temperature at Maximum Speed	-2°C



- Rotor and lid are autoclavable (maximum of 121°C, 20 minutes)

PC - SCREW CAP	
Model No.	VST-ACS-009
Item Code	6380079



- Screw cap made of PC for buckets VST-ADP-006 ~ VST-ADP-021

Adapter Model No.	VST - ADP - 006	VST - ADP - 007	VST - ADP - 008
Item code	6380033	6380034	6380035
Number of Tubes and Tube Capacity	1 x 250 ml	1 x 100 ml	3 x 50 ml
Total Number of Tubes per Rotor	4		12
Adapter Bore	62 mm $\varnothing$ (2.4" $\varnothing$ )	41 mm $\varnothing$ (1.6" $\varnothing$ )	29 mm $\varnothing$ (1.1" $\varnothing$ )
Length (min / max)	110 / 130 mm (4.3" / 5.1")	95 / 120 mm (3.7" / 4.7")	100 / 120 mm (3.9" / 4.7")
Radius Correction	8 mm (0.3")	6 mm (0.2")	4 mm (0.2")



Adapter Model No.	VST - ADP - 009	VST - ADP - 010	VST - ADP - 011
Item code	6380036	6380037	6380038
Number of Tubes and Tube Capacity	5 x 25 ml	9 x 15 ml / 9 x 9 ml	3 x 50 ml
Total Number of Tubes per Rotor	20	36	12
Adapter Bore	24.5 mm $\varnothing$ (1.0" $\varnothing$ )	17 / 14 mm $\varnothing$ (0.7" / 0.6" $\varnothing$ )	29 mm $\varnothing$ Conical (1.1" $\varnothing$ )
Length (min / max)	110 / 130 mm (4.3" / 5.1")	95 / 120 mm (3.7" / 4.7")	100 / 120 mm (3.9" / 4.7")
Radius Correction	6 mm (0.2")	4 mm (0.2")	3 mm (0.1")



Adapter Model No.	VST - ADP - 012	VST - ADP - 013	VST - ADP - 014
Item code	6380039	6380040	6380041
Number of Tubes and Tube Capacity	2 x 50 ml	7 x 15 ml	1 x 50 ml
Total Number of Tubes per Rotor	8	28	4
Adapter Bore	29 mm $\varnothing$ rim (1.1" $\varnothing$ rim)	17 mm $\varnothing$ (0.7" $\varnothing$ )	34 mm $\varnothing$ (1.3" $\varnothing$ )
Length (min / max)	100 / 120 mm (3.9" / 4.7")	95 / 120 mm (3.7" / 4.7")	95 / 120 mm (3.7" / 4.7")
Radius Correction	4 mm (0.2")	6 mm (0.3")	



Adapter Model No.	VST - ADP - 015	VST - ADP - 016	VST - ADP - 017
Item code	6380042	6380044	6380043
Number of Tubes and Tube Capacity	1 x 50 ml	3 x 15 ml	7 x 50 ml
Total Number of Tubes per Rotor	4	12	28
Adapter Bore	29 mm $\varnothing$ rim (1.1" $\varnothing$ rim)	24.5 mm $\varnothing$ (1.0" $\varnothing$ )	17 mm $\varnothing$ (0.7" $\varnothing$ )
Length (min / max)	100 / 120 mm (3.9" / 4.7")	85 / 120 mm (3.3" / 4.7")	100 / 120 mm (3.9" / 4.7")
Radius Correction	4 mm (0.2")	12 mm (0.5")	6 mm (0.3")



Adapter Model No.	VST - ADP - 018	VST - ADP - 019	VST - ADP - 020
Item code	6380045	6380046	6380047
Number of Tubes and Tube Capacity	8 x 10 ml	14 x 5 - 7 ml	10 x 1.6 - 7 ml
Total Number of Tubes per Rotor	32	56	40
Adapter Bore	16 mm $\varnothing$ rim (0.6" $\varnothing$ rim)	13 mm $\varnothing$ (0.5" $\varnothing$ )	
Length (min / max)	80 / 100 mm (3.1" / 3.9")	65 / 120 mm (2.6" / 4.7")	75 / 120 mm (3.0" / 4.7")
Radius Correction	4 mm	8 mm	



Adapter Model No.	VST - ADP - 021	VST - ADP - 022
Item code	6380048	6380049
Number of Tubes and Tube Capacity	8 x 4 - 10 ml	9 x 1.5 - 2 ml
Total Number of Tubes per Rotor	32	36
Adapter Bore	16 mm $\varnothing$ (0.6" $\varnothing$ )	11 mm $\varnothing$ (0.4" $\varnothing$ )
Length (min / max)	80 / 100 mm (3.1" / 3.9")	38 mm (1.5")
Radius Correction	4 mm (0.2")	1 mm (0.03")



**SWING-BUCKET ROTOR**

Model No.	VST-ROT-010
Item Code	6380023
Bucket/ Max. Capacity	2 x 3 ml
Acceleration in Seconds	43 / 452
Deceleration in Seconds	38 / 616
Maximum Loading Height	63 mm (2.5")
Angle	0-90°
Maximum Radius	120 mm (4.7")
Maximum RCF	2720 x g
Maximum Speed	4500 rpm
Temperature at Maximum Speed	-3°C



- With adapter, a total of up to 48 x 6.15 mL / 2.0 mL test tubes can be centrifuged at one time
- Rotor, cap, buckets/adapter are autoclavable (maximum of 121°C, 20 minutes)



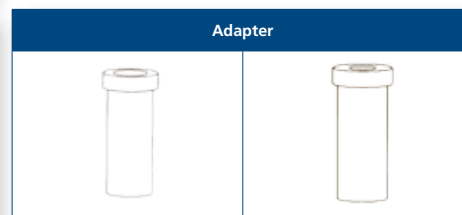
Adapter Model No.	VST - ADP - 021
Item Code	6380050
Number of Tubes and Tube Capacity	48 x 1.5 ml (2.0 ml)
Total Number of Tubes per Rotor	288

**FIXED-ANGLE ROTOR**

Model No.	VST-ROT-011
Item Code	6380024
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	25 / 251 (1.5 ml) 30 / 249 (2.0 ml)
Deceleration in Seconds	26 / 610 (1.5 ml) 27 / 635 (2.0 ml)
Length	40 mm (1.6")
Angle	45°
Maximum Radius	85 mm (3.3")
Maximum Bore	11 mm ø (0.4" ø)
Maximum RCF	21382 / 24321 x g
Maximum Speed	15000 / 16000 rpm
Temperature at Maximum Speed	3°C



- Microliter in volume and the highest speed among all the rotors
- Rotor, cap, buckets/adapters are autoclavable (maximum of 121°C, 20 minutes)



Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item code	6380013	6380014
Number of Tubes and Tube Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 ml PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm ø (0.3" ø)	6 mm ø (0.2" ø)
Length (min / max)	45 mm (1.8")	

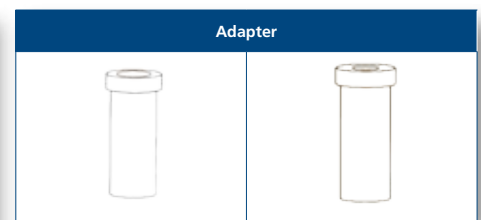
**FIXED-ANGLE ROTOR**

Model No.	VST-ROT-012
Item Code	6380025
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	25 / 251 (1.5 ml) 30 / 249 (2.0 ml)
Deceleration in Seconds	26 / 610 (1.5 ml) 27 / 635 (2.0 ml)
Length	40 mm (1.6")
Angle	45°
Maximum Radius	85 mm (3.3")
Maximum Bore	11 mm ø (0.4" ø)
Maximum RCF	21382 / 24321 x g
Maximum Speed	15000 / 16000 rpm
Temperature at Maximum Speed	3°C



- Microliter in volume and the highest speed among all the rotors (sealable)
- Rotor, cap, buckets/adapters are autoclavable (maximum of 121°C, 20 minutes)

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item code	6380013	6380014
Number of Tubes and Tube Capacity	1 x 0.5 ml	1 x 0.4 / 0.2 ml PCR
Total Number of Tubes per Rotor	24	
Adapter Bore	8 mm $\varnothing$ (0.3" $\varnothing$ )	6 mm $\varnothing$ (0.2" $\varnothing$ )
Length (min / max)	45 mm (1.8")	

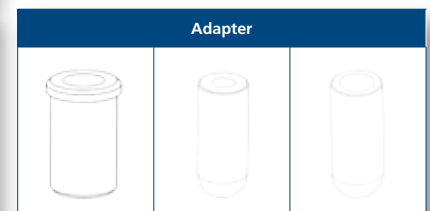


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-013
Item Code	6380026
Number of Tubes and Tube Capacity	6 x 85 ml
Acceleration in Seconds	85 / 697
Deceleration in Seconds	70 / 2313
Length	40 mm (1.6")
Angle	38°
Maximum Radius	115 mm (4.5")
Maximum Bore	38 mm $\varnothing$ (1.5" $\varnothing$ )
Maximum RCF	15556 x g
Maximum Speed	11000 rpm
Temperature at Maximum Speed	6°C

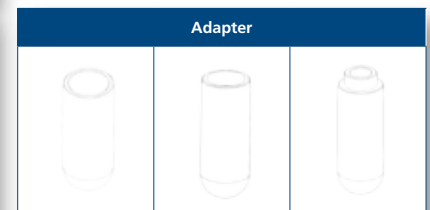


- Offer 7 different adapters suitable with tubes of 15, 30, 50, 85 ml
- Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20mins)

Adapter Model No.	VST - ADP - 024	VST - ADP - 025	VST - ADP - 026
Item code	6380051	6380052	6380053
Number of Tubes and Tube Capacity	2 x 15 ml	1 x 15 ml	1 x 30 ml
Total Number of Tubes per Rotor	12	6	
Adapter Bore	17 mm $\varnothing$ rim (0.7" $\varnothing$ rim)		25 mm $\varnothing$ (1.0" $\varnothing$ )
Length (min / max)	95 / 100 mm (3.7" / 3.9")	103 / 110 mm (4.1" / 4.3")	90 / 103 mm (3.5" / 4.1")



Adapter Model No.	VST - ADP - 027	VST - ADP - 028	VST - ADP - 031
Item code	6380054	6380055	6380058
Number of Tubes and Tube Capacity	1 x 50 ml	1 x 50 ml conical	1 x 15 ml conical
Total Number of Tubes per Rotor	6		
Adapter Bore	29 mm $\varnothing$ rim (1.1" $\varnothing$ rim)		17 mm $\varnothing$ (0.7" $\varnothing$ )
Length (min / max)	105 mm (4.1")	118 mm (4.6")	120 mm (4.7")



Adapter Model No.	VST - ADP - 032
Item Code	6380059
Number of Tubes and Tube Capacity	1 x 16 ml (2.0 ml)
Total Number of Tubes per Rotor	288
Adapter Bore	18 mm $\varnothing$ (0.7" $\varnothing$ )
Length (min / max)	103 / 110 mm (4.1" / 4.3")

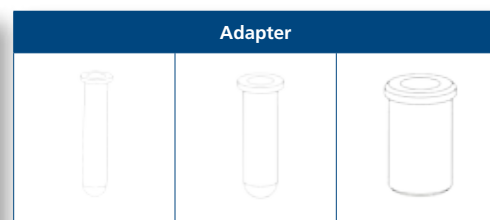


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-014
Item Code	6380027
Number of Tubes and Tube Capacity	30 x 15 ml
Acceleration in Seconds	25 / 149
Deceleration in Seconds	20 / 985
Length	95 / 115 mm (3.7" / 4.5")
Angle	35°
Maximum Radius	125 mm (4.9")
Maximum Bore	17 mm $\varnothing$ (0.7" $\varnothing$ )
Maximum RCF	2830 x g
Maximum Speed	4500 rpm
Temperature at Maximum Speed	-12°C



- Mainly for hospital use in centrifugation of urine and blood
- Rotor, cap, adapter, buckets/adapters are autoclavable (max. 121°C, 20 mins)

Adapter Model No.	VST - ADP - 029	VST - ADP - 030	VST - ADP - 003
Item code	6380056	6380057	6380015
Number of Tubes and Tube Capacity	1 x 7 ml	1 x 5 ml	1 x 1.5 ml
Total No. of Tubes per Rotor	30		
Adapter Bore	13.5 mm $\varnothing$ rim (0.5" $\varnothing$ rim)		11 mm $\varnothing$ (0.4" $\varnothing$ )
Length (min / max)	95/115 mm (3.7"/4.5")	70/90 mm (2.6"/3.5")	42 mm (1.7")

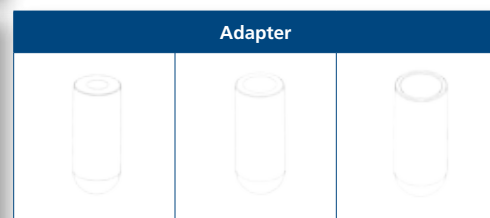


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-015
Item Code	6380028
Number of Tubes and Tube Capacity	4 x 85 ml
Acceleration in seconds	60 / 506
Deceleration in seconds	49 / 1745
Length	113 mm (4.4")
Angle	30°
Maximum Radius	92 mm (3.6")
Maximum Bore	38 mm $\varnothing$ (1.5" $\varnothing$ )
Maximum RCF	14807 x g
Maximum Speed	12000 rpm
Temperature at max. speed	5°C



- Applicable for samples of medium capacity such as bacterial culture
- Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20 mins)

Adapter Model No.	VST - ADP - 025	VST - ADP - 026	VST - ADP - 027
Item code	6380052	6380053	6380054
Number of Tubes and Tube Capacity	1 x 15 ml	1 x 30 ml	1 x 50 ml
Total Number of Tubes per Rotor	30		
Adapter Bore	17 mm $\varnothing$ rim (0.7" $\varnothing$ rim)	25 mm $\varnothing$ (1.0" $\varnothing$ )	29 mm $\varnothing$ (1.14" $\varnothing$ )
Length (min / max)	103/110 mm (4.1"/4.3")	90 / 103 mm (3.5"/4.3")	105 mm (4.1")



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Adapter Model No.	VST - ADP - 028	VST - ADP - 031
Item code	6380055	6380058
Number of Tubes and Tube Capacity	1 x 50 ml conical	1 x 15 ml conical
Total Number of Tubes per Rotor	4	
Adapter Bore	29 mm $\varnothing$ (1.1" $\varnothing$ )	17 mm $\varnothing$ (0.7" $\varnothing$ )
Length (min / max)	118 mm (4.6")	120 mm (4.7")

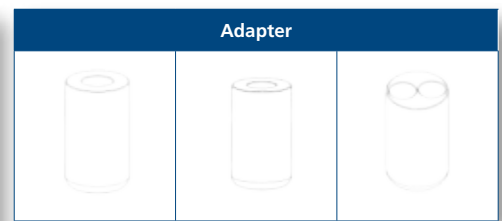


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-016
Item Code	6380029
Number of Tubes and Tube Capacity	6 x 250 ml
Acceleration in Seconds	130 / 664
Deceleration in Seconds	92 / 2906
Length	122 mm (4.8")
Angle	28°
Maximum Radius	140 mm (5.5")
Maximum Bore	62 mm $\varnothing$ (2.4" $\varnothing$ )
Maximum RCF	10017 x g
Maximum Speed	8000 rpm
Temperature at Maximum Speed	3°C

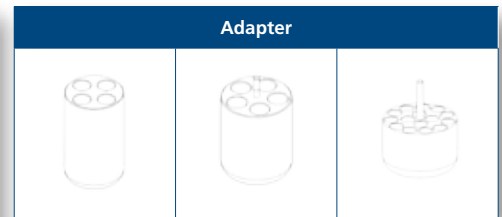


- Has the biggest volume among all the rotors. Suitable to centrifuge samples with big volumes
- Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20 mins)

Adapter Model No.	VST - ADP - 038	VST - ADP - 039	VST - ADP - 040
Item code	6380065	6380066	6380067
Number of Tubes and Tube Capacity	1 x 50 ml	1 x 50 ml	2 x 30 ml
Total Number of Tubes per Rotor	6	4	12
Adapter Bore	29 mm $\varnothing$ (1.1" $\varnothing$ )		26 mm $\varnothing$ (1.0" $\varnothing$ )
Length (min / max)	118 mm (94.6")	103 mm (4.1")	92 mm (3.6")



Adapter Model No.	VST - ADP - 041	VST - ADP - 042	VST - ADP - 043
Item code	6380068	6380069	6380070
Number of Tubes and Tube Capacity	4 x 15 ml Conical	5 x 10 ml	8 x 1.5 ml
Total Number of Tubes per Rotor	24	30	48
Adapter Bore	17 mm $\varnothing$ rim (0.7" $\varnothing$ )	16 mm $\varnothing$ (0.6" $\varnothing$ )	11 mm $\varnothing$ (0.4" $\varnothing$ )
Length (min / max)	120 mm (4.7")	80 mm (3.1")	40 mm (1.6")



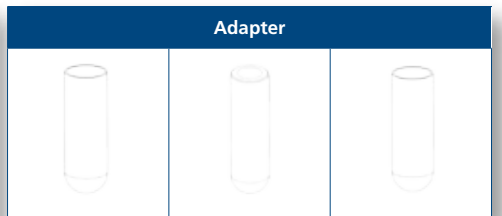
FIXED-ANGLE ROTOR	
Model No.	VST-ROT-017
Item Code	6380030
Number of Tubes and Tube Capacity	6 x 50 ml
Acceleration in Seconds	48 / 446
Deceleration in Seconds	49 / 1323
Length	95 / 115 mm (3.7" / 4.5")
Angle	26°
Maximum Radius	84 mm (3.3")
Maximum Bore ( $\varnothing$ mm)	29 mm $\varnothing$ (1.1" $\varnothing$ )
Maximum RCF	15871 x g
Maximum Speed	13000 rpm
Temperature at maximum Speed	5°C



- Has the capacity to centrifuge samples with medium volume; samples under 50 ml
- Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20 mins)

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Adapter Model No.	VST - ADP - 034	VST - ADP - 033	VST - ADP - 036
Item code	6380060	6380061	6380064
Number of Tubes and Tube Capacity	1 x 15 ml	1 x 16 ml	1 x 30 ml
Total Number of Tubes per Rotor	6		
Adapter Bore	17 mm $\varnothing$ (0.7" $\varnothing$ )	18 mm $\varnothing$ (0.7" $\varnothing$ )	25 mm $\varnothing$ (1.0" $\varnothing$ )
Length (min / max)	100/105 mm (3.9"/4.1")	100/105 ; 116/125 mm (3.9" / 4.1" ; 4.7" / 4.9")	92 / 95 mm (3.6" / 3.7")



FIXED-ANGLE ROTOR	
Model No.	VST-ROT-018
Item Code	6380031
Number of Tubes and Tube Capacity	20 x 10 ml
Acceleration in Seconds	54 / 512
Deceleration in Seconds	47 / 1439
Length	80 mm (3.1")
Angle	30°
Maximum Radius	98 mm (3.9")
Maximum Bore	16 mm $\varnothing$ (0.6" $\varnothing$ )
Maximum RCF	15779 x g
Maximum Speed	12000 rpm
Temperature at Maximum Speed	0°C



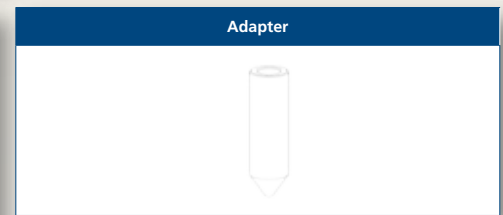
- Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20 mins)

FIXED-ANGLE ROTOR	
Model No.	VST-ROT-019
Item Code	6380032
Number of Tubes and Tube Capacity	10 x 50 ml
Acceleration in Seconds	115 / 753
Deceleration in Seconds	72 / 2395
Length	118 mm (4.6")
Angle	38°
Maximum Radius	13 mm (0.5")
Maximum Bore	29 mm $\varnothing$ (1.1" $\varnothing$ )
Maximum RCF	13115 x g
Maximum Speed	9500 rpm
Temperature at Maximum Speed	4°C

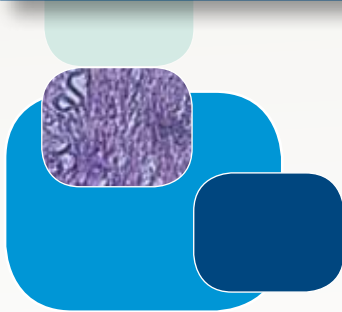


• Rotor, cap, buckets/adapters are autoclavable (max. 121°C, 20 mins)

Adapter Model No.		VST - ADP - 037
Item Code		6380063
Number of Tubes and Tube Capacity		1 x 15 ml conical
Total Number of Tubes per Rotor		10
Adapter Bore		17 mm $\varnothing$ (0.7" $\varnothing$ )
Length (min / max)		121 - 97 / 116 mm (4.7 - 3.8 / 4.6")



TECHNICAL SPECIFICATION								
Model	M22-MB-8	M22-MB-9	M22R-MB-8	M22R-MB-9	T1000-MB-8	T1000-MB-9	T1000R-MB-8	T1000R-MB-9
Maximum Relative Centrifugal Force	21380 x g				21382 x g		24321 x g	
Max. Relative Centrifugal Force Swing-bucket Rotor					4500 x g			
Maximum Speed	15000 rpm						16000 rpm	
Maximum Volume	44 x 1.5 / 2.0 ml				6 x 250 ml			
Rotor Options	7		6		11			
Speed Range	200 - 15000 rpm				200 - 15000 rpm		200 - 16000 rpm	
Acceleration / Deceleration Rates	10 / 10							
Programs Storage	99							
Temperature Control Range	Ambient		-20°C to +40°C		Ambient		-20°C to 40°C	
Time Set Range	59 min 50 sec / in 10 seconds increments							
Dimensions (W x H x D)	280 x 410 x 300 mm (11.0" x 16.1" x 11.8")		280 x 560 x 310 mm (11.0" x 22.0" x 12.2")		440 x 530 x 360 mm (17.3" x 20.9" x 14.2")		720 x 540 x 380 mm (28.3" x 21.3" x 15.0")	
Weight	17 Kg (37.5 lbs)		35 Kg (77.2 lbs)		52 Kg (114.6 lbs)		77 Kg (169.8 lbs)	
Electrical Configuration	270 W 230 VAC, 50/60 Hz	280 W 115 VAC, 50/60 Hz	500 W 230 VAC, 50/60 Hz	560 W 115 VAC, 50/60 Hz	530 W 230 VAC, 50/60 Hz	520 W 115 VAC, 50/60 Hz	785 W 230 VAC, 50/60 Hz	850 W 115 VAC, 50/60 Hz



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