

Versati™



Versati™ Tabletop Centrifuge Models: TCV-1500 and TCR-1500



Versati™ Micro Centrifuge Models: MCV-88 and MCR-88

Centrifuge

Best Choice for High Performance and Superior Quality 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™

MCV and MCR • TCV and TCR • Centrifuge

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

- CO₂ Incubators with Cooling System
- CO₂ Incubators with Stainless Steel Exterior
- CO₂ 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
- CO₂ Incubators
- IVF Workstation
- Anti-Vibration Table
- CO₂ / O₂ 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

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 micro centrifuge 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, MCV and refrigerated MCR stand out with excellent features and versatility. MCV and MCR 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.



DIVERSE CHOICES OF ROTORS

- Made of aluminum alloy.
- Automatic rotor recognition function (for TCV/TCR only) minimizes the need for manual settings.
- Powerful motor provides high RCF (Relative Centrifugal Force) up to 21380g for MCV/MCR and 24321g for TCV/TCR.
- As many as 7 rotors with wide range of capacity for MCV/MCR and 11 rotors for TCV/TCR 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™ Tabletop Centrifuge TCV-1500 and TCR-1500



Versati™ Micro Centrifuge MCV-88 and MCR-88

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

For tabletop centrifuge, TCV and refrigerated model TCR 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. TCV and TCR 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.



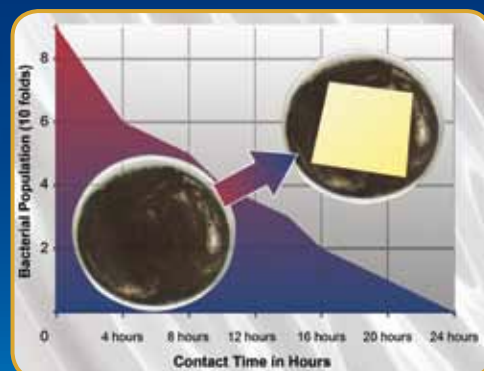
MAINTENANCE-FREE, BRUSHLESS MOTOR

- 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

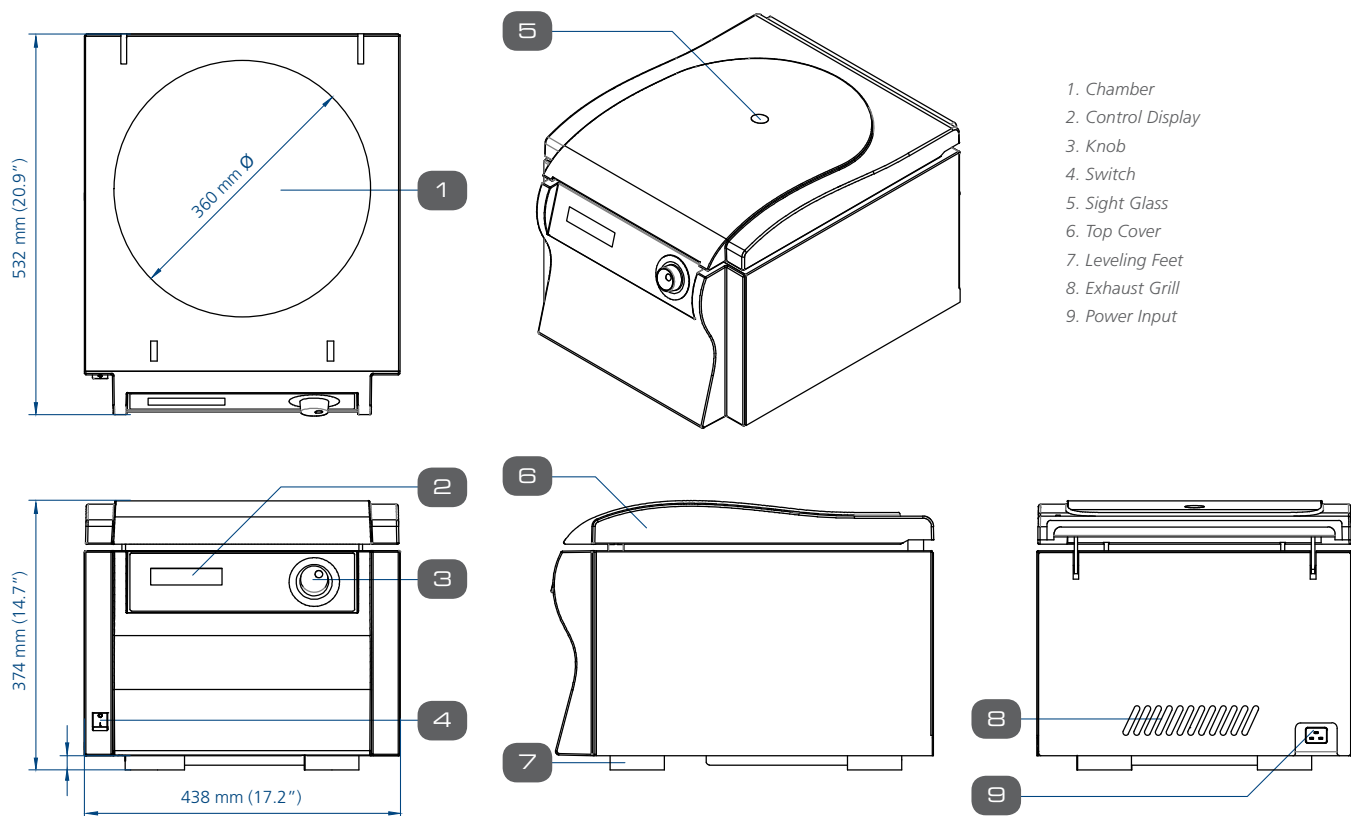
- External surfaces are powder coated Esco ISOCIDE™ to eliminate 99.9% of surface bacteria within 24 hours of exposure. This technology ensures relatively aseptic condition.
- Ensures healthier, safer and cleaner lab environment.



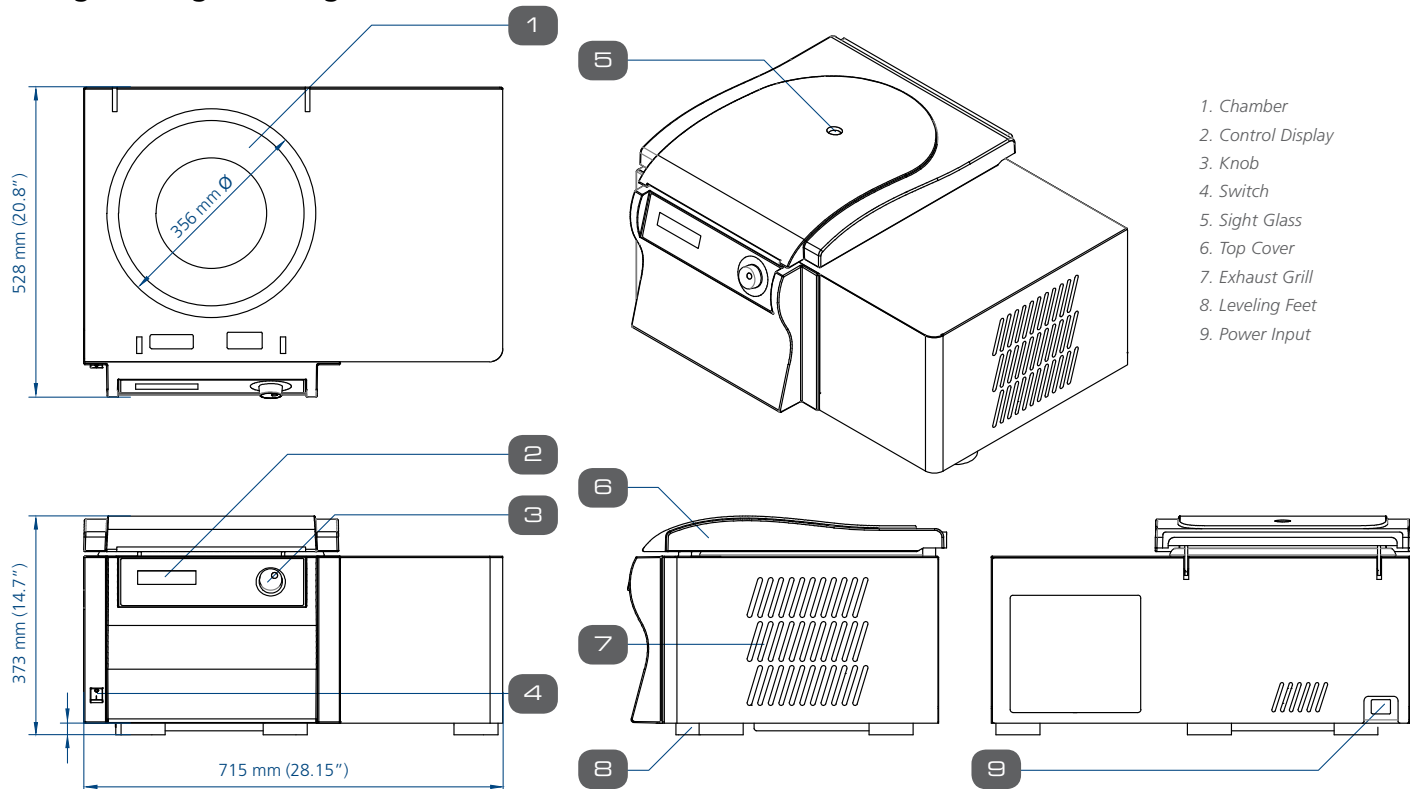
ESCO

WORLD CLASS. WORLDWIDE.

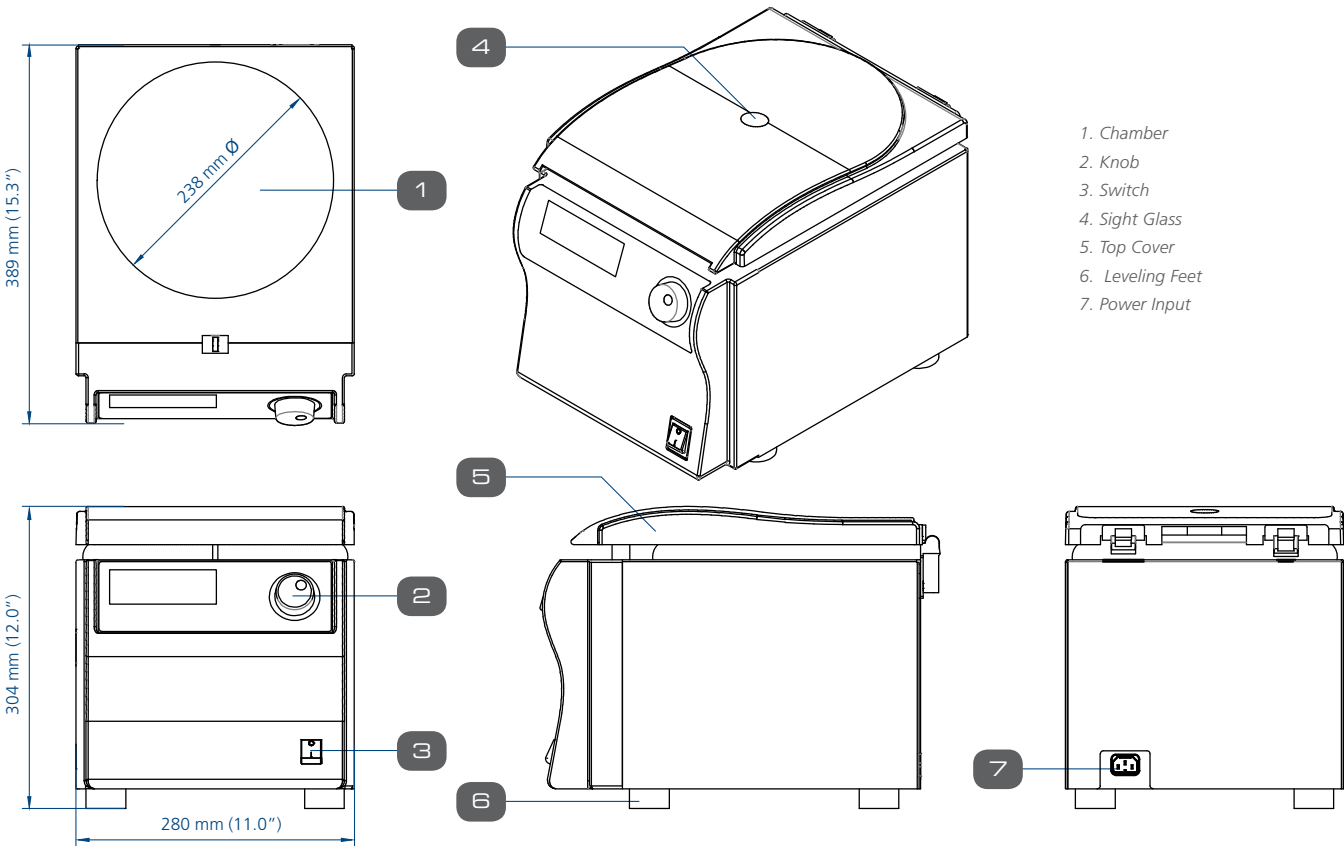
TCV Engineering Drawing



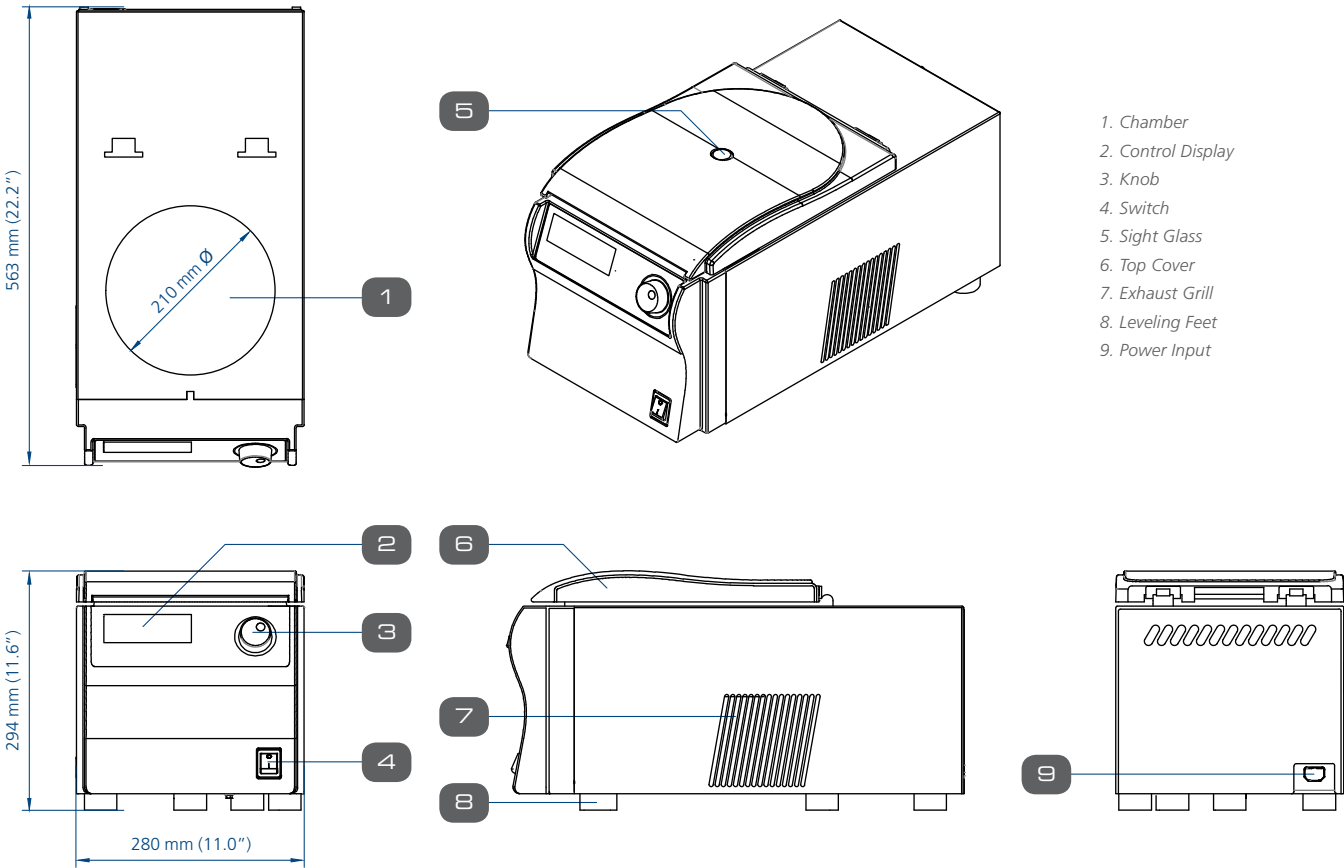
TCR Engineering Drawing



MCV Engineering Drawing



MCR Engineering Drawing



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 MCV / MCR and 16000 rpm/24321 x g for TCR and 15000 rpm/ 21382 x g for TCV.

- **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 MCV / MCR, and from the minimum of 24 x 1.5 ml / 2 ml to the maximum of 6 x 250 ml for TCV / TCR.

- **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 MCR and TCR)

- **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 TCV 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.

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.

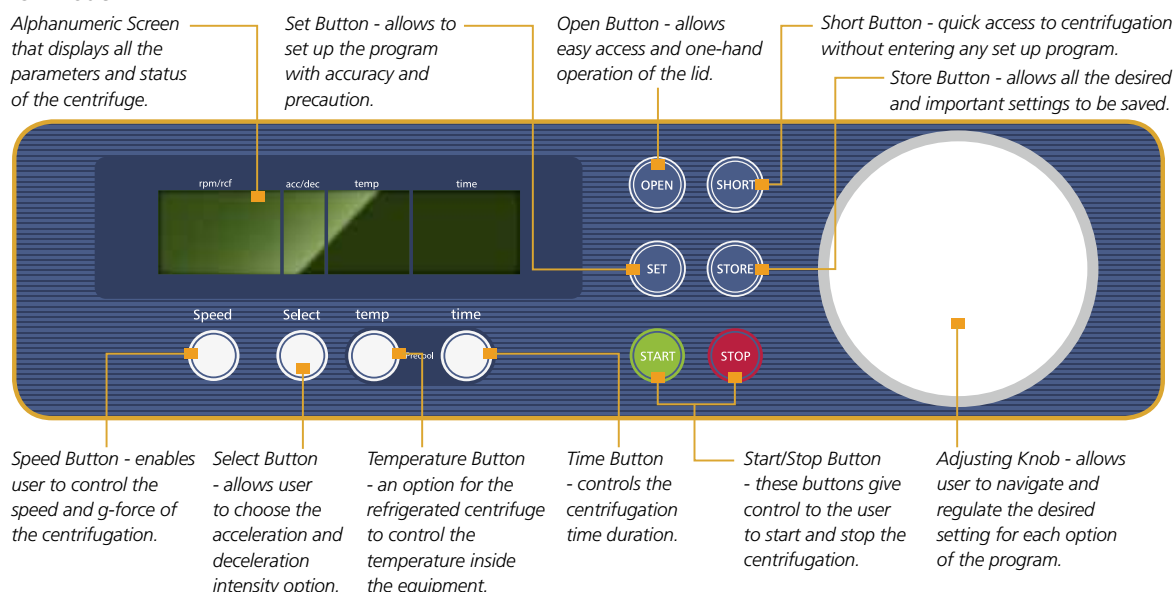
- **Safety Standards Followed**

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

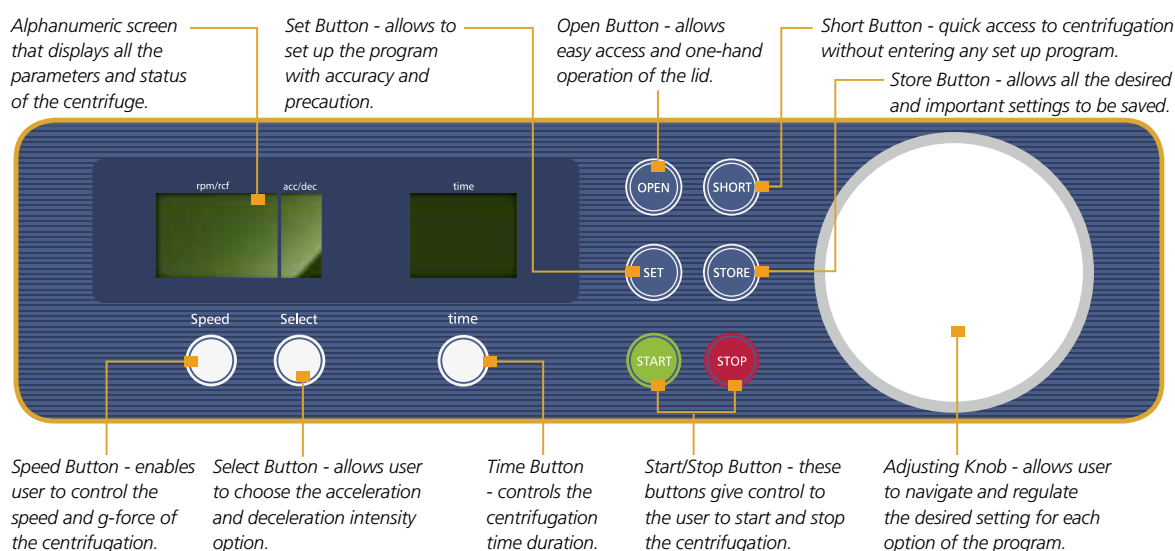
Humanization Designed Ecourage™ Controller

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.

MCR / TCR Model:



MCV / TCV Model:



• Smartdrive™ Rotor Auto Recognition

- Interchangeable rotors can be automatically recognized (for TCV / TCR only) 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.

ESCO

WORLD CLASS. WORLDWIDE.

Guide to Models, Micro Centrifuge					
MCV - 88 - 8					
Model	Code	Centrifuge Capacity	Code	Electrical Supply	Code
Micro Centrifuge Ventilated	MCV	Maximum Sample Capacity (ml)	88	230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9
Micro Centrifuge Refrigerated	MCR			230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9

MCV / MCR High Speed Micro Centrifuge for up to 15,000 rpm

Designed to accelerate your routine sample preparation processes.

ORDERING INFORMATION		
Model Code	Item Code	Description
MCV - 88 - 8	2220001	Micro Centrifuge Ventilated 230 VAC, 50/60 Hz
MCV - 88 - 9	2220002	Micro Centrifuge Ventilated 120 VAC, 50/60 Hz
MCR - 88 - 8	2220003	Micro Centrifuge Refrigerated 230 VAC, 50/60 Hz
MCR - 88 - 9	2220004	Micro Centrifuge Refrigerated 120 VAC, 50/60 Hz

Guide to Models, Tabletop Centrifuge					
TCV - 1500 - 8					
Model	Code	Centrifuge Capacity	Code	Electrical Supply	Code
Tabletop Centrifuge Ventilated	TCV	Maximum Sample Capacity (ml)	1500	230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9
Tabletop Centrifuge Refrigerated	TCR			230 VAC 50/60 Hz	8
				120 VAC 50/60 Hz	9

TCV / TCR High Speed Tabletop Centrifuge for up to 16,000 rpm

Ideal for multi-purpose centrifugation at high-speed.

ORDERING INFORMATION		
Model Code	Item Code	Description
TCV-1500-8	2220005	Tabletop Centrifuge Ventilated 230 VAC, 50/60 Hz
TCV-1500-9	2220006	Tabletop Centrifuge Ventilated 120 VAC, 50/60 Hz
TCR-1500-8	2220007	Tabletop Centrifuge Refrigerated 230 VAC, 50/60 Hz
TCR-1500-9	2220008	Tabletop Centrifuge Refrigerated 120 VAC, 50/60 Hz

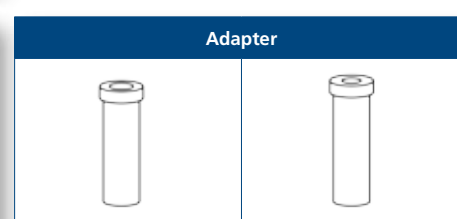
Rotors and Adapters for Centrifuges MCV and MCR

FIXED-ANGLE ROTOR	
Model No.	VST-ROT-001
Item Code	1380005
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	21 / 152
Deceleration in Seconds	18 / 173
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	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)

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item Code	1380013	1380014
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")	

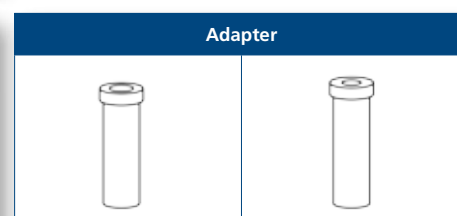


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-002
Item Code	1380006
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	21 / 151
Deceleration in Seconds	21 / 217
Length	40 mm (1.6")
Angle	45°
Maximum Radius	85 mm (3.4")
Maximum Bore	11 mm \varnothing (0.4" \varnothing)
Maximum RCF	21380 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	1380013	1380014
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")	

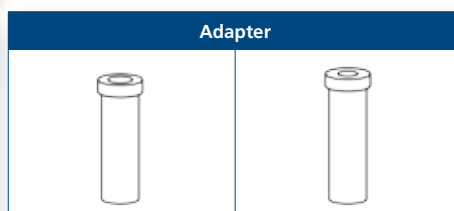


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-003
Item Code	1380007
Number of Tubes and Tube Capacity	30 x 1.5 / 2.0 ml
Acceleration in Seconds	29 / 235
Deceleration in Seconds	27 / 258
Length	11 mm (0.4")
Angle	40 °
Maximum Radius	94 mm (3.7")
Maximum Bore	11 mm ø (0.43" ø)
Maximum RCF	19153 x g
Maximum Speed	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	1380013	1380014
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	45 mm	

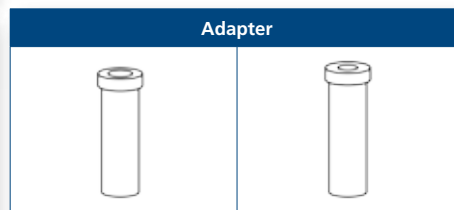


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-004
Item Code	1380008
Number of Tubes and Tube Capacity	44 x 1.5 / 2.0 ml
Acceleration in Seconds	18 / 136
Deceleration in Seconds	17 / 133
Length	11 mm (0.43")
Angle	45°
Maximum Radius	87 / 71 mm (3.4" / 2.8")
Maximum Bore	11 mm ø (0.43" ø)
Maximum RCF	17722 / 14463 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)

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item code	1380013	1380014
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	45 mm	

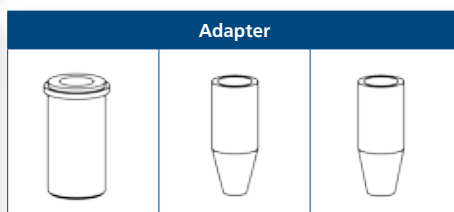


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-006
Item Code	1380010
Number of Tubes and Tube Capacity	12 x 5 ml
Acceleration in seconds	24 / 148
Deceleration in seconds	17 / 320
Length	48 mm (1.9")
Angle	45°
Maximum Radius	85 mm (3.3")
Maximum Bore	1.7 mm ø (0.07" ø)
Maximum RCF	19974 x g
Maximum Speed	14500 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	1380015	1380016	1380017
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 ø (0.43" ø)	12.6 mm ø (0.5" ø)	
Length	42 mm (1.7")	41 mm (1.6")	48 mm (1.9")



FIXED-ANGLE ROTOR	
Model No.	VST-ROT-007
Item Code	1380011
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	1380012
Capillaries	24
Acceleration in Seconds	15 / 120
Deceleration in Seconds	15 / 120
Angle	90°
Maximum Radius	93 mm (3.7")
Maximum RCF	14811 x g
Maximum Speed	12000 rpm



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

Rotors and Adapters for Centrifuges TCV and TCR

SWING-BUCKET ROTOR	
Model No.	VST-ROT-009
Item Code	1380022
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



- 4 x 250 ml bucket with flexible adapters enable high sample for testing
- Ideal for medical and biotechnology laboratories
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20 minutes)
- Rotor and lid are autoclavable (maximum of 121°C, 20 minutes)

PC - SCREW CAP	
Model No.	VST-ACS-009
Item Code	1380079



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

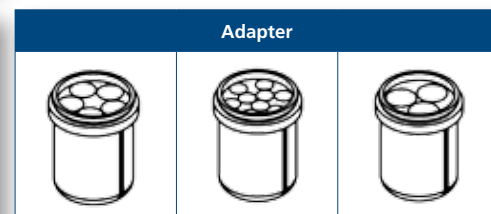
ESCO

WORLD CLASS. WORLDWIDE.

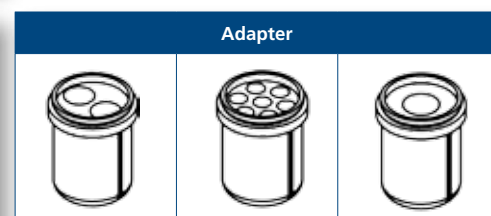
Adapter Model No.	VST - ADP - 006	VST - ADP - 007	VST - ADP - 008
Item code	1380033	1380034	1380035
Number of Tubes and Tube Capacity	1 x 250 ml	1 x 100 ml	3 x 50 ml
Total Number of Tubes per Rotor	4		12
Adapter Bore	62 mm \varnothing (2.4" \varnothing)	41 mm \varnothing (1.6" \varnothing)	29 mm \varnothing (1.1" \varnothing)
Length (min / max)	110 / 130 mm (4.3" / 5.1")	95 / 120 mm (3.7" / 4.7")	95 / 120 mm (3.7" / 4.7")
Radius Correction	8 mm (0.3")	6 mm (0.2")	4 mm (0.2")



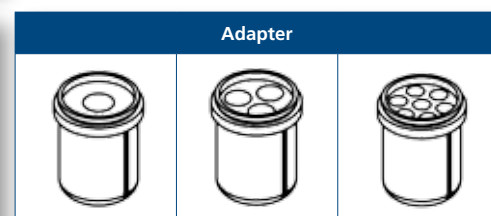
Adapter Model No.	VST - ADP - 009	VST - ADP - 010	VST - ADP - 011
Item code	1380036	1380037	1380038
Number of Tubes and Tube Capacity	5 x 25 ml	9 x 15 ml / 9 x 9 ml	3 x 50 ml
Total Number of Tubes per Rotor	20	36	12
Adapter Bore	24.5 mm \varnothing (1.0" \varnothing)	17 / 14 mm \varnothing (0.7" / 0.6" \varnothing)	29 mm \varnothing Conical (1.1" \varnothing)
Length (min / max)	110 / 130 mm (4.3" / 5.1")	76 / 115 mm (3.0" / 4.5")	100 / 120 mm (3.9" / 4.7")
Radius Correction	6 mm (0.2")	4 mm (0.2")	3 mm (0.1")



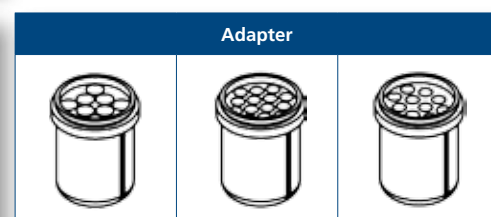
Adapter Model No.	VST - ADP - 012	VST - ADP - 013	VST - ADP - 014
Item code	1380039	1380040	1380041
Number of Tubes and Tube Capacity	2 x 50 ml	7 x 15 ml	1 x 50 ml
Total Number of Tubes per Rotor	8	28	4
Adapter Bore	29 mm \varnothing rim (1.1" \varnothing rim)	17 mm \varnothing (0.7" \varnothing)	34 mm \varnothing (1.3" \varnothing)
Length (min / max)	100 / 120 mm (3.9" / 4.7")	95 / 120 mm (3.7" / 4.7")	100 / 120 mm (3.9" / 4.7")
Radius Correction	4 mm (0.2")	6 mm (0.3")	



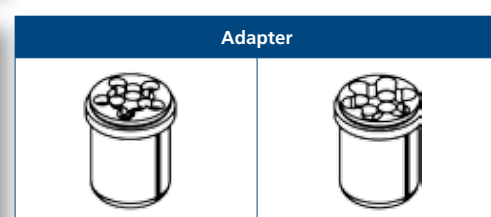
Adapter Model No.	VST - ADP - 015	VST - ADP - 016	VST - ADP - 017
Item code	1380042	1380044	1380043
Number of Tubes and Tube Capacity	1 x 50 ml	3 x 25 ml	7 x 15 ml
Total Number of Tubes per Rotor	4	12	28
Adapter Bore	29 mm \varnothing rim (1.1" \varnothing rim)	24.5 mm \varnothing (1.0" \varnothing)	17 mm \varnothing rim (0.7" \varnothing)
Length (min / max)	100 / 120 mm (3.9" / 4.7")	85 / 100 mm (3.3" / 3.9")	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	1380045	1380046	1380047
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	1380048	1380049
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	15 mm \varnothing (0.2" \varnothing)	11 mm \varnothing (0.4" \varnothing)
Length (min / max)	75 / 100 mm (3.0" / 3.9")	38 mm (1.5")
Radius Correction	4 mm (0.2")	1 mm (0.03")

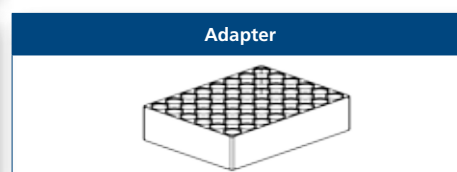


SWING-BUCKET ROTOR	
Model No.	VST-ROT-010
Item Code	1380023
Maximum Capacity	2 x 3
Acceleration in Seconds	43 / 452
Deceleration in Seconds	38 / 616
Maximum Loading Height	63 mm (2.5")
Maximum Loading Weight	310 g
Angle	0-90°
Maximum Radius	120 mm (4.7")
Maximum RCF	2720 x g
Maximum Speed	4500 rpm
Temperature at Maximum Speed	-3°C



- With adapter, a total of up to 48 x 6 1.5 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 - 023
Item Code	1380050
Number of Tubes and Tube Capacity	48 x 1.5 ml (2.0 ml)
Total Number of Tubes per Rotor	288

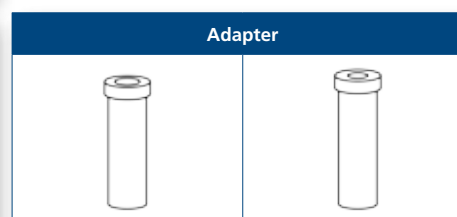


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-011
Item Code	1380024
Number of Tubes and Tube Capacity	24 x 1.5 / 2.0 ml
Acceleration in Seconds	25 / 251 (1.5 ml) 30 / 249 (2.0 ml)
Deceleration in Seconds	26 / 610 (1.5 ml) 27 / 635 (2.0 ml)
Length	40 mm (1.6")
Angle	45°
Maximum Radius	85 mm (3.3")
Maximum Bore	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	1380013	1380014
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	1380025
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)
- Aerosol - tight centrifugation

Adapter Model No.	VST - ADP - 001	VST - ADP - 002
Item code	1380013	1380014
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")	

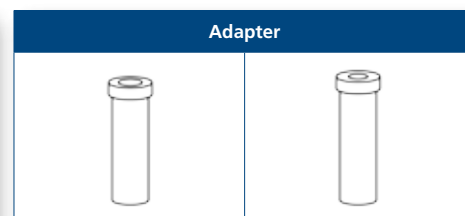
FIXED-ANGLE ROTOR	
Model No.	VST-ROT-013
Item Code	1380026
Number of Tubes and Tube Capacity	6 x 85 ml
Acceleration in Seconds	85 / 697
Deceleration in Seconds	70 / 2313
Length	113 mm (4.4")
Angle	38°
Maximum Radius	115 mm (4.5")
Maximum Bore	38 mm \varnothing (1.5" \varnothing)
Maximum RCF	15556 x g
Maximum Speed	11000 rpm
Temperature at Maximum Speed	6°C

Adapter Model No.	VST - ADP - 024	VST - ADP - 025	VST - ADP - 026
Item code	1380051	1380052	1380053
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")

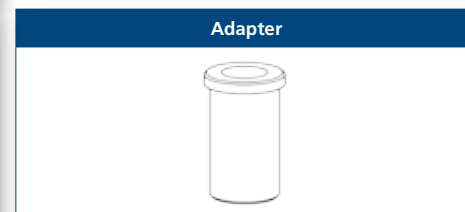
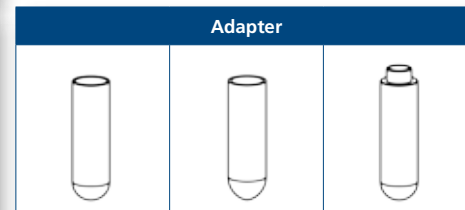
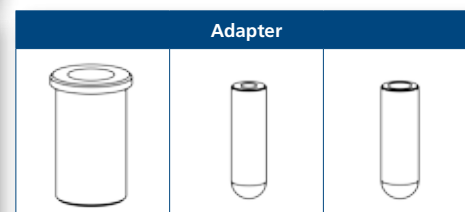
Adapter Model No.	VST - ADP - 027	VST - ADP - 028	VST - ADP - 031
Item code	1380054	1380055	1380058
Number of Tubes and Tube Capacity	1 x 50 ml	1 x 50 ml conical	1 x 15 ml conical
Total Number of Tubes per Rotor	6		
Adapter Bore	29 mm \varnothing rim (1.1" \varnothing rim)		17 mm \varnothing (0.7" \varnothing)
Length (min / max)	105 mm (4.1")	118 mm (4.6")	120 mm (4.7")

Adapter Model No.	VST - ADP - 032
Item Code	1380059
Number of Tubes and Tube Capacity	1 x 16 ml (2.0 ml)
Total Number of Tubes per Rotor	6
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	1380027
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

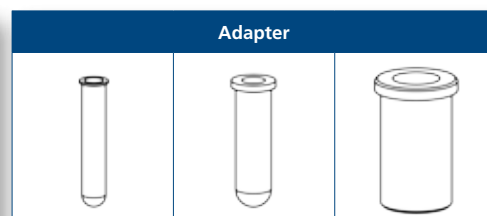


- Offer 7 different adapters suitable with tubes of 15, 30, 50, 85 ml
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20mins)



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

Adapter Model No.	VST - ADP - 029	VST - ADP - 030	VST - ADP - 032
Item code	1380056	1380057	1380059
Number of Tubes and Tube Capacity	1 x 7 ml	1 x 5 ml (RIA)	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")

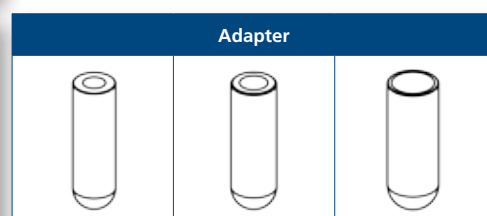


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-015
Item Code	1380028
Number of Tubes and Tube Capacity	4 x 85 ml
Acceleration in seconds	60 / 506
Deceleration in seconds	49 / 1745
Length	113 mm (4.4")
Angle	30°
Maximum Radius	92 mm (3.6")
Maximum Bore	38 mm \varnothing (1.5" \varnothing)
Maximum RCF	14807 x g
Maximum Speed	12000 rpm
Temperature at max. speed	5°C

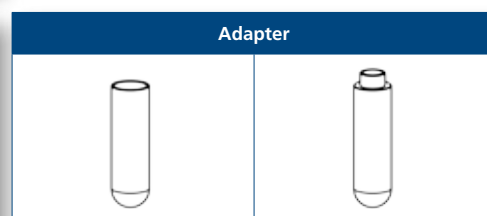


- Applicable for samples of medium capacity such as bacterial culture
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20 mins)

Adapter Model No.	VST - ADP - 025	VST - ADP - 026	VST - ADP - 027
Item code	1380052	1380053	1380054
Number of Tubes and Tube Capacity	1 x 15 ml	1 x 30 ml	1 x 50 ml
Total Number of Tubes per Rotor	4		
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")



Adapter Model No.	VST - ADP - 028	VST - ADP - 031
Item code	1380055	1380058
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	1380029
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

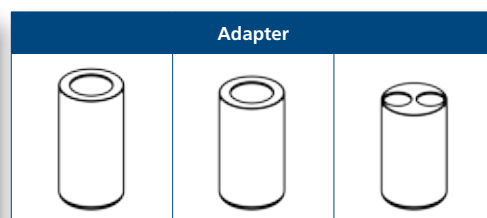


- Has the biggest volume among all the rotors. Suitable to centrifugate samples with big volumes
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20 mins)

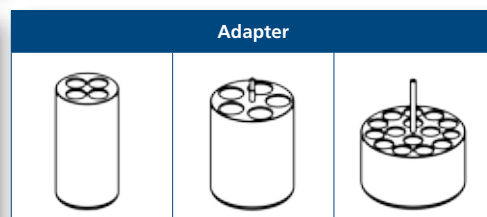
ESCO

WORLD CLASS. WORLDWIDE.

Adapter Model No.	VST - ADP - 038	VST - ADP - 039	VST - ADP - 040
Item code	1380065	1380066	1380067
Number of Tubes and Tube Capacity	8 x 1.5 ml	5 x 10 ml	4 x 15 ml conical
Total Number of Tubes per Rotor	48	30	24
Adapter Bore	11 mm \varnothing (0.4" \varnothing)	16mm (0.6")	17 mm \varnothing (0.7" \varnothing)
Length (min / max)	40 mm (1.6")	80 mm (3.1")	120 mm (4.7")



Adapter Model No.	VST - ADP - 041	VST - ADP - 042	VST - ADP - 043
Item code	1380068	1380069	1380070
Number of Tubes and Tube Capacity	2 x 30 ml	1 x 50 ml	1 x 50 ml conical
Total Number of Tubes per Rotor	12	6	6
Adapter Bore	26 mm \varnothing rim (1.02" \varnothing)	29 mm \varnothing (0.4" \varnothing)	29 mm \varnothing (0.4" \varnothing)
Length (min / max)	92 mm (3.6")	103 mm (4.1")	118 mm (4.6")

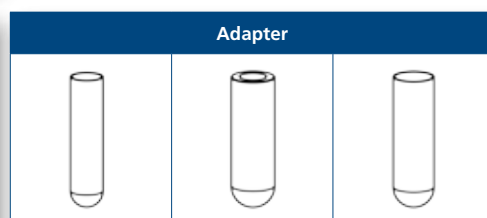


FIXED-ANGLE ROTOR	
Model No.	VST-ROT-017
Item Code	1380030
Number of Tubes and Tube Capacity	6 x 50 ml
Acceleration in Seconds	48 / 446
Deceleration in Seconds	49 / 1323
Length	95 / 115 mm (3.7" / 4.5")
Angle	26°
Maximum Radius	84 mm (3.3")
Maximum Bore (\varnothing mm)	29 mm \varnothing (1.1" \varnothing)
Maximum RCF	15871 x g
Maximum Speed	13000 rpm
Temperature at maximum Speed	0°C



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

Adapter Model No.	VST - ADP - 034	VST - ADP - 033	VST - ADP - 036
Item code	1380061	1380060	1380064
Number of Tubes and Tube Capacity	1 x 16 ml	1 x 15 ml / conical	1 x 30 ml
Total Number of Tubes per Rotor	6		
Adapter Bore	18 mm \varnothing (0.7" \varnothing)	17 mm / 17.5 mm (0.7")	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	1380031
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



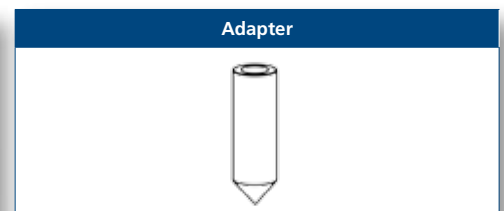
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20 mins)

FIXED-ANGLE ROTOR	
Model No.	VST-ROT-019
Item Code	1380032
Number of Tubes and Tube Capacity	10 x 50 ml Falcon
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 ø (1.1" ø)
Maximum RCF	16023 x g
Maximum Speed	10500 rpm
Temperature at Maximum Speed	4°C



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

Adapter Model No.	VST - ADP - 037
Item Code	1380063
Number of Tubes and Tube Capacity	1 x 15 ml / conical
Total Number of Tubes per Rotor	10
Adapter Bore	17 mm ø (0.7" ø)
Length (min / max)	121; 97 / 116 mm (4.7 - 3.8 / 4.6")

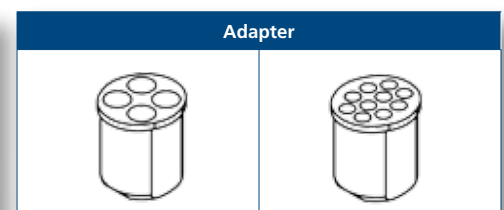


SWING-BUCKET ROTOR	
Model No.	VST-ROT-020
Item Code	1380105
Number of Tubes and Tube Capacity	16 x 50 ml ; 40 x 15 ml
Acceleration in Seconds	Level 0 = 34s / Level 9 = 316s
Deceleration in Seconds	Level 0 = 36s / Level 9 = 316s
Angle	0-90°
Maximum Radius	166 mm (6.6")
Maximum RCF	3735 x g
Maximum Speed	4500 rpm
Temperature at Maximum Speed	2°C



- Medium volume 4 x 250 ml bucket with adapter
- Rotor, cap, buckets/adapters are autoclavable (maximum 121°C, 20 mins)

Adapter Model No.	VST - ADP - 044	VST - ADP - 045
Item Code	1380107	1380106
Number of Tubes and Tube Capacity	4 x 50 ml	10 x 15 ml
Total Number of Tubes per Rotor	16	40
Adapter Bore	30 mm ø (1.2" ø)	17 mm ø (0.7" ø)
Length (min / max)	118 mm (4.6")	120 mm (4.7")



TECHNICAL SPECIFICATION

Model	MCV-22-8	MCV-22-9	MCR-22-8	MCR-22-9	TCV-1500-8	TCV-1500-9	TCR-1500-8	TCR-1500-9
Maximum Relative Centrifugal Force	21380 x g				21382 x g		24321x 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 D x H)	280 x 389 x 304 mm (11.0" x 15.3" x 12.0")		280 x 563 x 294 mm (11" x 22.2" x 11.6")		438 x 532 x 374 mm (17.2" x 20.9" x 14.7")		715 x 528 x 373 mm (28.2 " x 20.8" x 14.7")	
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



ART Equipment
Biological Safety Cabinets
CO₂ Incubators
Cold Storage
Compounding Pharmacy Equipment
Containment / Pharma Products
Ductless Fume Hoods
Lab Animal Research Products
Laboratory Fume Hoods
Laboratory Incubators
Laboratory Ovens
Laminar Flow Cabinets
PCR Cabinets
PCR Thermal Cyclers
Powder Weighing Balance Enclosures

The Esco Group of Companies is a global life sciences tools provider with sales in over 100 countries. The group is active in lab equipment, pharma equipment and medical devices. Manufacturing facilities are located in Asia and Europe. R&D is conducted worldwide spanning the US, Europe and Asia. Sales, service and marketing subsidiaries are located in 12 major markets including the US, UK, Singapore, Japan, China and India. Regional distribution centers are located in the US, UK, and Singapore.

Life Science • Chemical Research • Assisted Reproductive Technology (ART) • Pharmaceutical Equipment • General Equipment

ESCO

WORLD CLASS. WORLDWIDE.

Esco Micro Pte. Ltd. • 21 Changi South Street 1 • Singapore 486 777
Tel +65 6542 0833 • Fax +65 6542 6920 • mail@escoglobal.com
www.escoglobal.com

Esco Technologies, Inc. • 903 Sheehy Drive, Suite F, Horsham, PA 19044, USA
Toll-Free USA and Canada 1-877-479-3726 • Tel 215-441-9661 • Fax 484-698-7757
eti.sales@escoglobal.com • www.escolifesciences.us

Esco Global Offices: Bahrain | Bangladesh | China | India | Indonesia | Italy | Japan | Malaysia
Philippines | Russia | Singapore | South Africa | South Korea | Thailand | United Kingdom | USA | Vietnam