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Esco offers the best choice for high performance and superior quality centrifuge— Versati™ centrifuges. It is equipped with maintenance-free motors, a durable mechanism, and an intelligent Versati™ microprocessor control system that offers extreme reliability and safety. Versati™ centrifuges have a robust versatility covering micro centrifuge and low-to-high speed general-purpose centrifuge with a variety of rotors, adapters, and accessories to fit all your application needs.

Our micro centrifuge models— MCV (ventilated) and MCR (refrigerated) stand out with their outstanding features. Both have a maximum speed of 15,000 rpm (21,380 x g), a maximum volume capacity of 44 x 1.5/ 2.0 ml, and can accommodate 12 x 5 ml reaction tubes or 4 x 8 PCR strips per run. Additionally, our micro ventilated centrifuge has a hematocrit rotor that can accommodate 24 capillaries per run. Esco Versati<sup>TM</sup> centrifuges' compact design saves space in your lab and its low noise performance is preferred in any working area. The refrigerated model's powerful refrigeration system keeps samples at a



# DISTINCT CONTROL PANEL AND INTELLIGENT VERSATI™ MICROPROCESSOR CONTROL SYSTEM

- Big rotary knob and buttons, convenient for rotation and operation.
- Large LCD screen with a clear indication of running condition including rotor, speed, time, etc.
- The operation panel is waterproof that 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 capacity up to 21380 x g for MCV/MCR, 21382 x g for TCV, and 24320 x g for TCR.
- As many as six rotors with a wide range of capacity for MCV, five rotors for MCR, and eleven rotors for TCV/TCR to meet all your needs.



Versati™ Tabletop Centrifuge TCV-1500 and TCR-1500



INTEGRATED DESIGN OF INTERIOR CENTRIFUGE CHAMBER

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



Versati<sup>™</sup> Micro Centrifuge MCV-88 and MCR-88



temperature of as low as 4°C during a continuous run at 21380 x g.

For tabletop centrifuge models, Esco Versati™ Tabletop Ventilated Centrifuge (TCV) and Tabletop Refrigerated Centrifuge (TCR) also excel among the same level of products with their versatility, running features, and easy handling. It can act as different type of centrifuge to meet all your application needs—centrifuge for DNA precipitations, high-capacity and low-to-high speed general-purpose centrifuge for cell application. Both have available fixed-angle and swing-bucket rotors with a maximum capacity of up to 6 x 250 ml (for fixed-angle rotor) and 4 x 250 ml (for swing-bucket rotor). In addition, both have an available microtiter plate rotor with maximum capacity of up to 6 plates. The tabletop ventilated centrifuge maximum speed and rcf is 15,000 rpm (21,382 x g) while the tabletop refrigerated centrifuge maximum speed and rcf is 16,000 rpm (24,320 x g).

# **SAFETY LID LOCK**

- Motor-driven lid lock ensures safety and reliability.
- The lid can be opened only when the rotor stops and the speed indicator is 0.
- Smooth, automatic, and electromagnetic lid 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 ensures no interference to radio equipment.
- Low noise and smooth operation with superior mechanism design.
- Prolongs the lifespan and saves maintenance costs.





# 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.
- Provides healthier, safer, and cleaner lab environment.

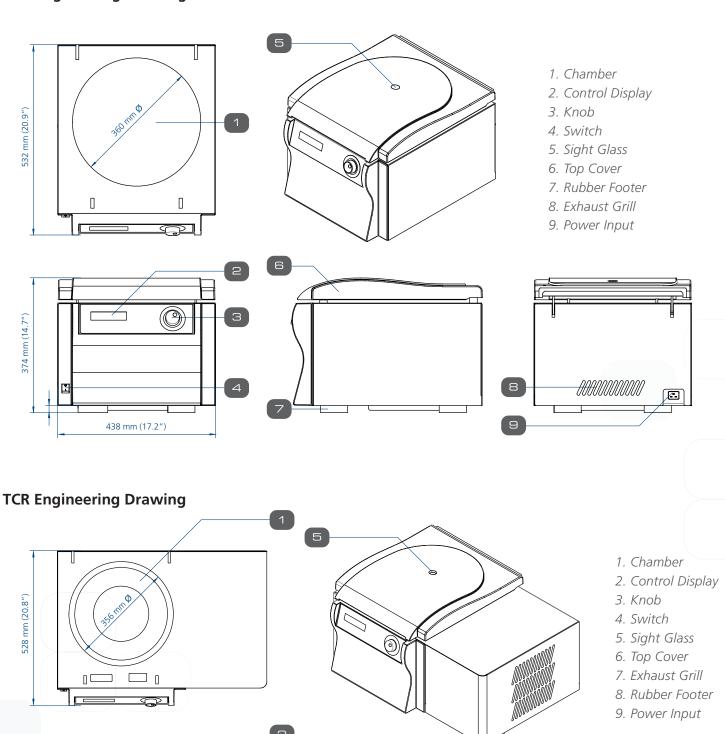




# **TCV Engineering Drawing**

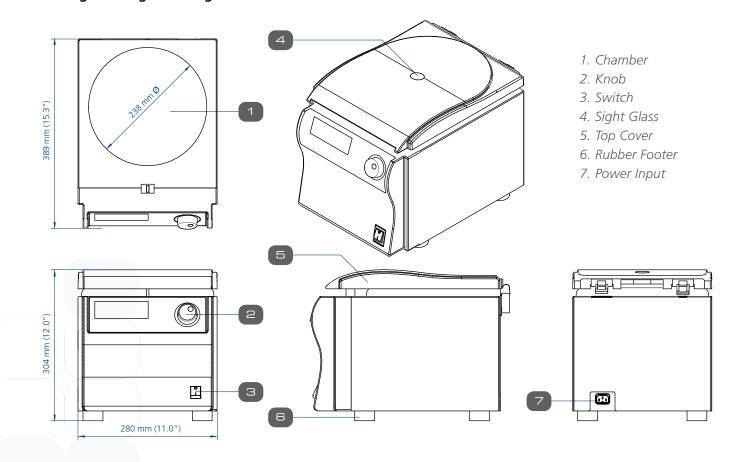
373 mm (14.7")

715 mm (28.15")

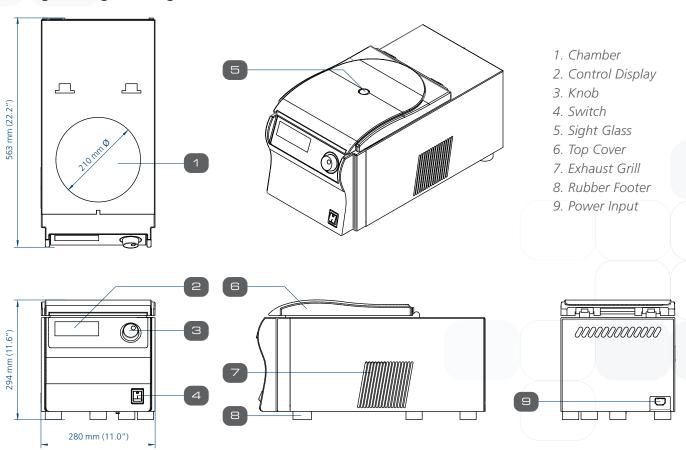


9

# **MCV Engineering Drawing**



# **MCR Engineering Drawing**



# **Versatile and Outstanding Features**

Based on German manufacturing technology, especially in motor and rotor design, Versati<sup>™</sup> 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

- A powerful combination of motor and rotor results in high-speed capacity up to 15000 rpm/21,380 x g for MCV / MCR, 15000 rpm/ 21382 x g for TCV, and 16000 rpm/ 24320 x g for TCR.

#### Large Capacity

- Diverse specifications of rotors make capacity respectively ranges from 4 x 8 PCR strips (4 x 8 x 0.2 ml) to 44 x 1.5 / 2.0 ml for MCV / MCR, and from 24 x 1.5 ml / 2 ml to 4 x 250 ml (swing-out rotor), and 6 x 250 ml (angle rotor) for TCV / TCR.

#### • Incredible Flexibility

 A wide choice of easy and interchangeable rotors meets all your application needs using microliter, blood, and Falcon type conical tubes. A 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

 The compressor in Versati<sup>™</sup> centrifuges has strong power, which allows a fast cooling rate. The time cost can be as low as 10 mins when the temperature decreases from room temperature to 4°C.

# • Wide Range of Temperature

- Versati<sup>™</sup> centrifuges does 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 of TCR can be spun at maximum speed and still maintain -2°C.

# Fast Pre-cooling

 If the samples are temperature-sensitive, it is helpful to precool the centrifuge, the rotor, and eventually the buckets to the needed working temperature. Versati™ centrifuges provide fast precooling function (about 10 mins) that is maintained even when the centrifuge is not in use.

# **Superior Safety**

## • Genuine-Protec™ Safety Lid Design

- Lid with motor-driven design ensuring safety of users from accidental release of aerosols and probable misuse.

#### V-balance™ Weight Imbalance Protection

 Versati™ centrifuges are equipped with active weight imbalanceidentification system. In case the rotor is not equally loaded, the drive will turn off during acceleration and the rotor will then decelerate to a stop.

#### Overspeed Protection

- Equipped with a speed detection system. Once the speed exceeds the safety range, the alarm will sound off, and rotation is halted.

## Overtemperature Protection

- With an overtemperature alarm for the chamber, rotor, and frequency converter. Once an overtemperature is detected, the unit will stop running. This provides comprehensive protection which prolongs the life span of the centrifuge.

#### · Aerosol-tight and Autoclavable

 High-quality, extremely robust aluminum lid of 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.

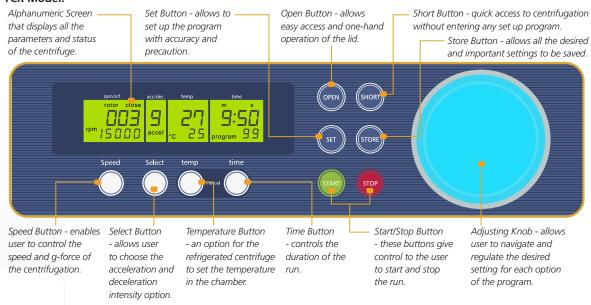
#### • Safety Standards Followed

 All models are manufactured according to international safety regulations such as IEC 61010, EN61010-1, EN61010-2-2, ISO 9001, and CE.

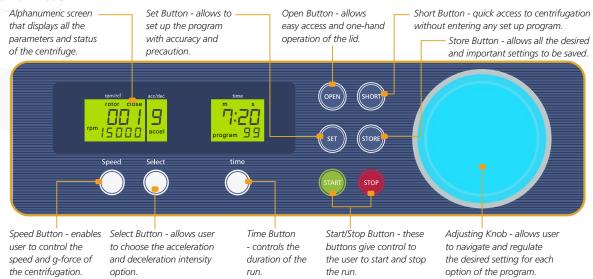
# **Humanization Designed Versati™ Controller**

Versati<sup>™</sup> centrifuges with bright back-lit LCD, 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<sup>™</sup> centrifuges enable the users to edit and store up to 99 programs with a combination of speed, centrifugal force, running time, temperature, acceleration/deceleration rate, radius correction, and rotor code 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.

## • Automatic Conversion between Speed and RCF

 Users can set either the rotor speed or the centrifugal force which is automatically converted by the system from one parameter to another for different requirements.

## • Acceleration/ Deceleration

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

#### • Notification System

- Once the run is complete, an audible alarm prompts users to take out samples. It has a total of ten different sounds to choose from.

#### • Automatic Switch of Temperature Types

 Versati™ centrifuges allow automatic conversions of degree Celsius and Fahrenheit.

#### • Real-Time Modification of Parameter

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

Guide to Models, Micro Centrifuge						
MCV - 88 - 8						
Model	Code	Centrifuge Capacity	Code	Electrical Supply	Code	
Micro Centrifuge Ventilated	MCV			230 VAC 50/60 Hz	8	
		Maximum Sample	00	120 VAC 50/60 Hz	9	
Micro Centrifuge Refrigerated	MCR	Capacity (ml)	88	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			230 VAC 50/60 Hz 8		
		Maximum Sample	1500	120 VAC 50/60 Hz	9	
Tabletop Centrifuge Refrigerated	TCR	Capacity (ml)	1500	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				

TECHNICAL SPECIFICATION										
Model		MCV-88-8	MCV-88-9	MCR-88-8	MCR-88-9	TCV-1500-8	TCV-1500-9	TCR-1500-8	TCR-1500-9	
Item Code		2220001	2220002	2220003	2220004	2220005	2220006	2220007	2220008	
External Dimensions (W x D x H)			280 x 389 x 304 mm (11" x 15" x 12")		280 x 563 x 294 mm (11" x 22" x 11.5")		438 x 532 x 374 mm (17" x 21" x 15")		715 x 528 x 373 mm (28" x 20.7" x 15")	
Maximum Relative Centrifugal Force			21380 x g			21382 x g			20 x g	
Maximum Relative Centrifugal Force Swing-bucket Rotor						3780 x g				
Maximum Speed			15000 rpm				0 rpm	16000 rpm		
Maximum Volume			44 x 1.5	1.5 / 2.0 ml 6 x 250			50 ml	50 ml		
Rotor Options		(	5		5	1		11		
Speed Range			200 - 15000 rpm			200 - 15000 rpm 200 - 16000 rpm				
Acceleration / Deceleration Rates			10/10			10/10				
Programs Storage			99			99				
Temperature Range		Amb	Ambient -20°C to +40°C		Aml	bient	-20°C to 40°C			
Time Set Range				99 hrs 59 mins	/ 59 min 50 s in 1	min / 10s increme	nts / continuous			
Maximum Noise Level (Depending on the rotor)		≤ 62 dB(A)		≤ 59 dB(A)		≤ 68 dB(A)		≤ 64 dB(A)		
Construction	Main Body	Electrogalvanized steel with Isocide <sup>T</sup>				™ antimicrobial powder-coated finish				
Construction	Chamber	Plastic ABS			Stainless steel,			l, grade 304		
Electrical Configuration		270 W 230 VAC, 50/60 Hz	280 W 120 VAC, 50/60 Hz	500 W 230 VAC, 50/60 Hz	560 W 120 VAC, 50/60 Hz	530 W 230 VAC, 50/60 Hz	520 W 120 VAC, 50/60 Hz	785 W 230 VAC, 50/60 Hz	850 W 120 VAC, 50/60 Hz	
Net Weight		17 kg (37 lbs)		35 kg (77 lbs)		49 kg (108 lbs)		73 kg (161 lbs)		
Shipping Weight		22 kg (49 lbs)		40 kg (88 lbs)		56 kg (123 lbs)		80 kg (176 lbs)		
Shipping Dimension (W x D x H)		650 x 670 x 550 mm (25.6" x 26.4" x 21.7")		410 x 680 x 400 mm (16.1" x 26.8" x 15.7")		720 x 860 x 690 mm (28.3" x 33.9" x 27.2")		830 x 650 x 580 mm (32.7" x 25.6" x 22.8")		
Shipping Volume, Maximum		0.24 m³ (8.5 ft³)		0.11 m³ (3.9 ft³)		0.42 m³ (14.8 ft³)		0.31 m³ (10.9 ft³)		

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