



AIRFUGE

AIR-DRIVEN ULTRACENTRIFUGE



ULTRACENTRIFUGE POWER FOR SMALL VOLUME SAMPLES

Dedicated applications include:

- Binding studies right on your workbench
- Lipoproteins
- Clarification of lipemic samples
- Proteomics
- Sample preparation for electron microscopy
- Soluble solid/total solids ratios for tomato canning applications

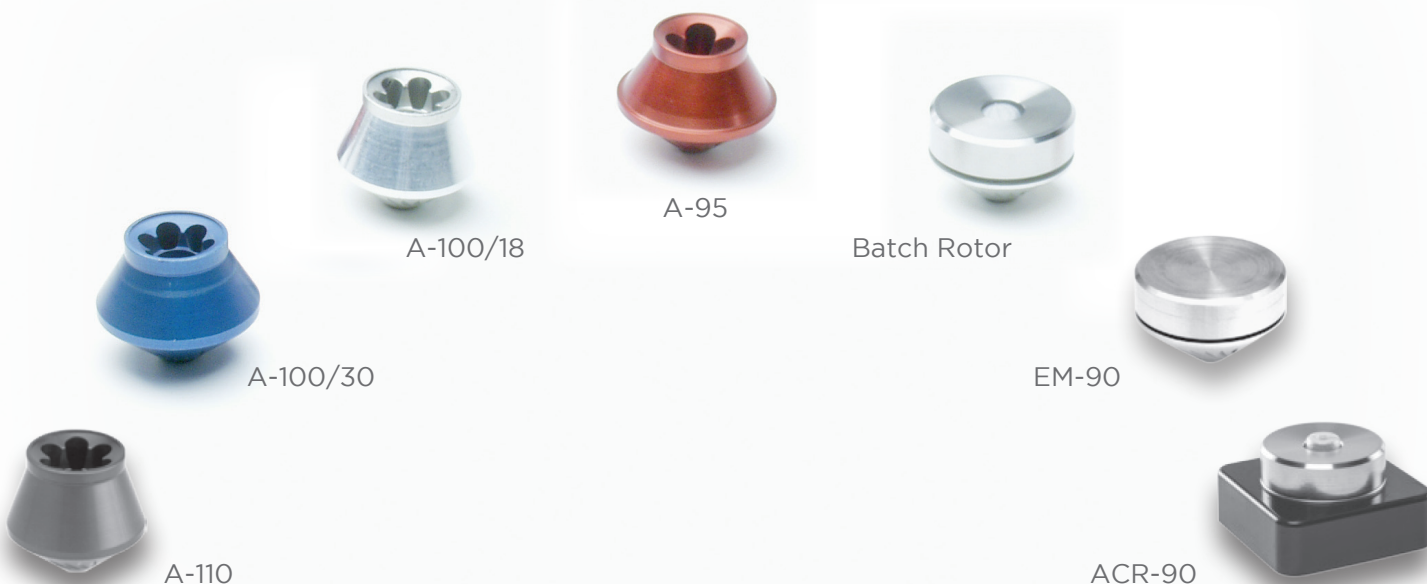


How it works:

The Airfuge is air turbine-driven and delivers results in a fraction of the time of larger units. The combination of high g-force and short path length results in remarkably short run times to produce results. Run time is shortened even further by rotor acceleration to full speed—110,000 RPM at 199,000 x g—as quickly as 30 seconds.

Airfuge rotors are driven by air pressure (42 psi required) from an ordinary laboratory air source or auxiliary compressor. The rotors spin almost friction-free on a cushion of levitating air, with speed controlled by regulating the air pressure. The air system allows the rotors to decelerate smoothly and helps minimize remixing of tube contents.

Runs can be timed from 0-300 minutes in 5 minute increments; a HOLD button can be used for longer runs. The speed is air-pressure regulated and braking is achieved by coasting, then friction braking by engagement of brake pin. The rotor operates at a temperature a few degrees above ambient.



AIRFUGE ROTORS AND APPLICATIONS



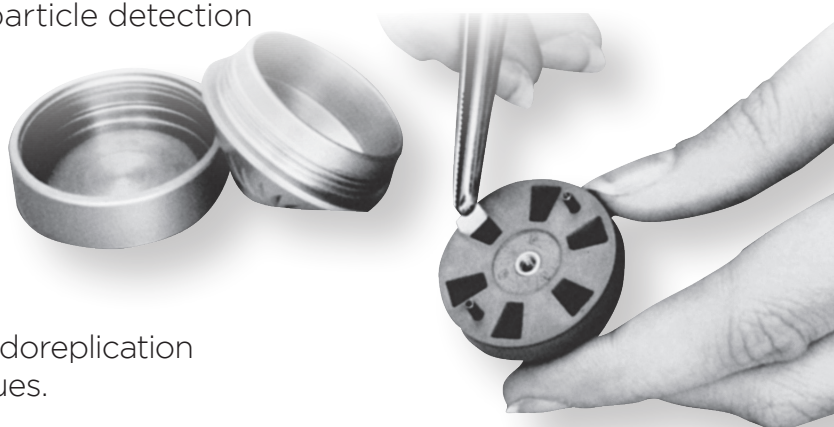
Rotor Name	Cat. No.	Max. Speed	Rel. Centrifugal field at Max. Speed and rMax	Pressure at Max. Speed	Rotor Capacity	K-Factor at Max. Speed
ACR-90 Chylomicron Rotor	341260	90,000 RPM \pm 5,000 RPM (with 2.4 mL or 3.5 mL liner)	107,000 \times g (2.4 mL Liner) 122,000 \times g (3.5 mL Liner)	210 kPa (30 psig)	Liner volume: 2.4 mL or Liner volume: 3.5 mL	39 (2.4 mL Liner) 45 (3.5 mL Liner)
	Application: This rotor can generate centrifugal forces to clarify lipemic sample serum by flotation of the chylomicrons after 10 minutes of centrifugation. The sample is carried in disposable polyethylene liners that fit into the cavity of the rotor base. The 3.5 mL Liner yields about 2.6 mL of clarified serum, and the 2.4 mL Liner yields about 1.4 mL.					
A-95 Fixed Angle Rotor	347595	95,000 RPM \pm 5,000 RPM	178,000 \times g	207 kPa (30 psig)	4 \times 450 μ L	19
	Application: This rotor can generate centrifugal forces to pellet subcellular components or to isolate microsomal fractions and plasma membranes. It can also be used to clarify small volumes of lipemic serum by flotation of the chylomicrons.					
Batch Rotor	347833	90,000 RPM	132,000 \times g	207 kPa (30 psig)	2 mL or 7 mL	8 at max. fill volume 2 mL 55 at max. fill volume 7 mL
	Application: The Batch rotor can be used to pellet particles from a single large sample. This rotor allows to spin sample volumes of 2 to 7 mL. A common application is the rapid processing of fruit paste.					
A-110 Fixed Angle Rotor	347596	110,000 RPM \pm 5,000 RPM	199,000 \times g	207 kPa (30 psig)	6 \times 180 μ L	9
	Application: To pellet subcellular components or to isolate microsomal fraction and plasma membranes. It can also be used to clarify small volumes of lipemic serum by flotation of the chylomicrons.					
A-100/18 Fixed Angle Rotor	347593	95,000 RPM \pm 5,000 RPM	149,000 \times g	207 kPa (30 psig)	6 \times 175 μ L	12
	Application: To pellet subcellular components or to isolate microsomal fraction and plasma membranes. It can also be used to clarify small volumes of lipemic serum by flotation of the chylomicrons.					
A-100/30 Fixed Angle Rotor	347594	92,000 RPM \pm 5,000 RPM	167,000 \times g	207 kPa (30 psig)	6 \times 240 μ L	19
	Application: With less reorientation of the contents, this rotor is ideal for sedimentation-equilibrium experiments for molecular weight determination. This rotor can also be used to clarify small volumes of lipemic serum by flotation of the chylomicrons.					
EM-90 Electron Microscopy Rotor	Nominal Tube Volume per Cell					
	347844	90,000 RPM \pm 4,000 RPM	118,000 \times g	207 kPa (30 psig)	0.06 mL for 3 mm cell 0.1 mL for 5 mm cell	19

Electron Microscopy Rotor

The Electron Microscopy Rotor uniformly sediments particles for detection and counting by electron microscopy techniques. A dilute suspension of material is placed in the sector cells of the rotor and pelleted directly onto the chosen microscope support. This direct method of ultracentrifugation eliminates the virus recovery step necessary with the indirect method, increasing the sensitivity of virus particle detection as much as 50 to 1000-fold.

This technology, requiring minimal preparation time, is simple, rapid and safe. And the rotor is small enough to be immersed in a biological fixative for disinfecting.

The Electron Microscopy Rotor prepares virus particles for counting using either pseudoreplication or thin-section electron microscopy techniques.



The Airfuge is a compact, turbine-driven, benchtop ultracentrifuge, capable of accelerating rotors up to 110,000 RPM in as little as 30 seconds.

This unique ultracentrifuge uses no vacuum or high-speed bearings. The rotor is supported and turned by streams of air.

Specifications

Max. Speed:	110,000 rpm +/- 5,000 rpm
Max. Force:	199,000 x g
Max. Capacity:	4 x 450 µL
Drive:	Air turbine drive
Air pressure at ultracentrifuge for routine operation:	30 psi (210 kPa)
Accel. Time:	30-60 seconds
Decel. Time:	2.5-5.5 minutes
Speed Control:	Air-pressure regulation
Speed Readout:	By conversion of air pressure reading from instrument gauge. An optional Digital Speed Readout Accessory (347592) is available.
Braking System:	Coasting, then frictional braking by engagement of brake pin.
Temperature Range:	Rotor temperature is a few degrees above ambient.
Timer:	0-300 minutes in five-minute increments, HOLD for longer runs.
Dimensions:	280 x 380 x 200 mm / 11 x 15 x 8 in (W/D/H)
Weight:	10.4 kg (23 lbs)

Part Numbers

Description

340400	Airfuge Ultracentrifuge, 120 V, 60 Hz
347854	Airfuge Ultracentrifuge, 120 V, 60 Hz with Digital Tachometer
340401	Airfuge Ultracentrifuge, 220V, 50Hz
347855	Airfuge Ultracentrifuge, 220V, 50Hz with Digital Tachometer

Air and power requirements: To perform to specifications, an air source with an air flow rate of 3.5 cubic feet per minute (0.0016 m³/s) at 42 psi (290 kPa) is required. The unit is equipped with six feet (1.83m) of flexible air hose and attaches to a standard 1/4 in. (6.35 mm) male hose connector. A filter is supplied to avoid contamination by removing oil and water from compressed air. Power requirements are 120 V, 60 Hz, or 220 V, 50 Hz.

Ordering Information: Airfuge air-driven ultracentrifuge includes connecting hose and air filter. Order rotors and accessories separately.



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