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For over 25 years, **Across International** has continued to be a leading laboratory equipment manufacturer and supplier for various industries across the world, from Tesla, NASA, GE, Lockheed Martin and countless universities, to small businesses in your own backyard. Founded in New Jersey, USA, Across International has also established a west coast center in Nevada, USA, and another in Victoria, Australia, to meet the ever growing needs of our customers. We pride ourselves in providing excellent customer service. If you ever have questions, comments, or concerns, we are just a call away at 888-988-0899. You may also e-mail us at info@acrossinternational.com.



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Compact Induction Heaters



IH15A 15kW Mid-Freq Induction Heater

IH series mid-frequency induction heaters are designed with mid working frequency between 30 and 80 KHz. Mid-frequency units are excellent for small part heating, diamond saw brazing, plumbing copper head welding, auto part heat treat, annealing of stainless steel containers, and many other applications.

In comparison with other types of induction heaters, mid frequency induction heaters are the simplest in terms of design and implementation. With their low cost of ownership, they are among the most popular and reliable machines. The 15kW models are especially popular for their large capacity affordable price, making them standard equipment in many factories, labs and workshops where 230V AC is available.



IHG06AC 6.6kW High-Freq Induction Heater

IHG series high-frequency induction heaters are designed with high frequency between 100 and 1100 KHz, they are among the latest developed products with unique technology and cover almost all kind of metal's heat treatment. These heaters are the unique tools for fine steel wire annealing; small precise shaft quenching and hard alloy saw blade blazing.



Saw blade brazing



Rivet heating



Welding mouth brazing



Local quenching



Aluminum-plastic pipe heating



Steel pipe heating



Annealing



Gear quenching



Magneto coil hot coating



Clutch quenching



Melting



Small steel rod heat treat



Welding



Sintering



Special tool quenching



IHL25 25kW Low-Freq
Induction Heater

IHL series low-frequency induction heaters are designed with low working frequency from 1 to 20 kHz. Low frequency heaters are great for a wide range of applications, including heat penetration, steel rod forging, pressing die tempering, pre-heating for welding, and melting batches of metal of 4 lbs and up. They are not limited to ferromagnetic materials, so nonferrous metals can be heated effectively as well. There are three major components to the system: the power supply, the compensating capacitor/transformer, and the induction coil/smelting crucible. Our heaters automatically adjust to the best resonant frequency in order to achieve the most efficient overall heating results, based on our customer's specific requirements for heat penetration, heating efficiency, and electromagnetic homogeneity.

Main Features

- Ease of use: Simply plug in the power and connect the water cooling system. Our simple set up instructions allow you to use the heater in as little as 15 minutes.
- Light weight, portable, instant heat, and up to 90% energy savings.
- Precise control with digital output, frequency, and current displays.
- Remote foot switch for safer operation.
- Dual automatic and manual operating modes.
- Optional graphite, MgO and SiO₂ crucibles available. (melting material decides crucible type, weight and size of the material decide crucible size).
- Custom coil design available (fixed coil or cable coil that is used like a wand).
- **ISO 9001:2008** registered manufacturer.



IHL15K 15kW Low-Freq
Induction Heater with Tilt-able Melter

Safety Features

- **Overvoltage protection:** Machine shuts down when input voltage is over 495V. Overvoltage light will turn on and buzzer will sound continuously. Alarm and light shut off automatically when voltage goes below 495V.
- **Overheat protection:** If the sensor detects that the heat radiator temperature is over 55°C, the machine will shut down, an overheat light will turn on and a buzzer will sound continuously. Increase water pressure or lower water temperature until alarm turns off by itself.
- **Overcurrent/malfunction protection:** Machine will shut down, indicator light turns on, and buzzer sounds continuously.
- **Low water pressure protection:** If water pressure goes below 29 PSI, the machine will shut down, water protection light will turn on, and buzzer will sound continuously.

Digital Temperature Controlled Circulating Water Chillers

We offer several different digital temperature controlled circulating water chillers, recommended for use with our IH series induction heaters. All of our chillers come equipped with built-in swivel casters. They also feature a steel tank and water pump for durability and rust-free operation. Two sets of water manifolds are included for immediate use.

Compatible Induction Units

- **WAC-1:** High frequency 4 kW, 6.6 kW. Mid frequency 15 kW, 25 kW. Low frequency 15 kW.
- **WAC-4:** High frequency 10 kW, 20 kW, 30 kW. Mid frequency 25 kW, 35 kW. Low frequency 25 kW, 35 kW.
- **WAC-6:** High frequency 20 kW, 30 kW, 40 kW. Mid frequency 35 kW, 45 kW. Low frequency 35 kW, 45 kW.
- **WAC-10:** High frequency 30 kW, 40 kW, 60 kW. Mid frequency 35 kW, 45 kW, 70 kW. Low frequency 35 kW, 45 kW, 70 kW.

Safety Features

- Over current protection
- Compressor delayed start
- Water pump overload protection
- Built-in fuse
- Over-voltage and under-voltage protection
- Abnormal operations alert
- Phase protection



WAC-1 digital temperature controlled water chiller

As always, we proudly back our units with a 1-year warranty, lifelong US based tech support, parts, and servicing.

Model	WAC-1	WAC-4	WAC-6	WAC-10
Input Power	110V, 60 Hz single phase	480V, 60 Hz three-phase		
Temp Range of Chilled Fluid	5 °C - 35 °C. It is best to use the chiller while ambient temperature is at or below 35 °C			
Chilled Fluid Flow	0.49 m ³ /hour	640 gallons per hour	1,000 gallons per hour	1,000 gallons per hour
Temperature Accuracy	+/- 2 °C	Programmable	Manual	Programmable

Induction Heater Specifications

	Model	Output (kW)	Input power	Output frequency (KHz)	Current (Amp)	Duty cycle	Cooling water pressure (psi)	Cooling water flow (gallon/min)	Timer range (Sec)	Breaker size (Amp)	Approx. Weight (Lb)
<i>High freq</i>	IHG04AC	4	220VAC 1-PH 50/60Hz	100-250	19	80%	29	0.5	1-99	25A 1-PH	38
	IHG06A1	6.6		100-500	30		29	0.8		40A 1-PH	45
	IHG06A3	6.6		600-1100	30		29	0.8		40A 1-PH	50
	IHG10	10		100-500	45		29	1.6		60A 1-PH	65
	IHG20	20	460VAC 3-PH 50/60Hz	50-250	25	100%	29	1.6	1-99.9	35A 3-PH	95
	IHG30	30		50-200	38		29	1.6		50A 3-PH	115
	IHG40	40		50-200	50		29	1.6		65A 3-PH	170
	IHG60	60		30-150	75		29	1.6		95A 3-PH	230
	IHG100	100		30-150	126		44	5.3		160A 3-PH	300
	IHG160	160		30-120	201			5.3		255A 3-PH	430
<i>Mid freq</i>	IH15A	15	220VAC 1-PH 50/60Hz	30-80	32	80%	29	1.3	1-99	40A 1-PH	40
	IH15AB	15			32			1.3		40A 1-PH	50
	IH25A	25	460VAC 3-PH 50/60Hz		19			1.3		25A 3-PH	60
	IH25AB	25			19			1.3		25A 3-PH	75
	IH35AB	35			44	1.6		55A 3-PH		145	
	IH45AB	45	50/60Hz		57	100%		1.6		57A 3-PH	195
	IH70AB	70			88			2.6		110A 3-PH	295
<i>Low freq</i>	IHL15	15	460VAC 3-PH 50/60Hz	1-20	19	100%	29	0.8	1-99.9	25A 3-PH	80
	IHL25	25			31			0.8		40A 3-PH	110
	IHL35	35			44		44	2.7		55A 3-PH	135
	IHL70	70			88			5.3		110A 3-PH	290
	IHL110	110			138			5.3		175A 3-PH	350
	IHL160	160			200			5.3		255A 3-PH	480
<i>For melting</i>	IHL15K	15	460VAC 3-PH 50/60Hz	1-20	19	100%	29	0.8	1-99.9	25A 3-PH	120
	IHL25K	25			31			0.8		40A 3-PH	160
	IHL35K	35			44		44	2.7		55A 3-PH	210
	IHL70K	70			88			5.3		110A 3-PH	360
	IHL110K	110			138			5.3		175A 3-PH	490
	IHL160K	160			200			5.3		255A 3-PH	700

Vacuum Tube Furnaces

TF series tube furnaces feature a chamber with **Mitsubishi** (Japan) high quality alumina fiber insulation and SiC heating elements. A dual-wall steel internal housing helps minimize heat loss to exterior surface. It can be used under vacuum and inert gas environments. This tube furnace is an ideal tool for scientific research use in research labs or universities. Gas flow is controlled by flow meter. A built-in computer interface allows full control from a PC.



TF1400 1400°C
Tube Furnace

- **Temperature controller:** Shimaden fp93, 40 programmable segments with +/- 1°C accuracy. (Made in Japan). Over-heat, power failure and thermocouple malfunction protection.
- **Heating elements:** SiC (1400°C), MoSi2 (1600°C, 1700°C)
- **Tube material:** High purity Al₂O₃ (99%) ceramic (Made in USA)
- **Vacuum flanges:** Stainless steel, with valves and pressure gauge
- **Refractory lining:** Al₂O₃ fiber alumina

Temperature (°C)	Dimensions (inch)	Output (kw)	Heating Zone (inch)	Tube Size (mm)
1400	16x10x21	2.5	11	Ø60×1000
1400, 1600, 1700	26x18x26	4	11	Ø60×1000
1400, 1600, 1700	26x18x26	4	11	Ø60×1000
1400, 1600	26x20x28	6	11	Ø100×1000

Split Tube Furnaces



STF1200 1200°C
Split Tube Furnace

STF series split tube furnaces are built with double layer steel casing with air cooling, two cooling fans inside the case keep the body temperature low. The tube can be sealed by stainless steel vacuum sealed flanges with pressure meter; it can be used under vacuum and inert gas condition. Built-in computer interface allows full control from a PC. Split cover allows quick cooling down for the tube. Optional vacuum pump available.

- **Temperature controller:** Shimaden fp93, 40 programmable segments, 6 sets of PID adjustment with +/- 1°C accuracy, over-heat, power failure and Thermocouple malfunction protection.
- **Heating elements:** Kanthal resistance wire (Made in Sweden)
- **Furnace chamber:** Al₂O₃ Fiber (Made in USA)
- **Tube material:** Quartz

Tube Size (mm)	Output (kw)	Voltage (v)	Heating Zone (inch)	Max Temp (°C)
Ø60×1000	2.5	220	18	1200
Ø100×1000	2.5	220	18	1200
Ø150×1000	2.5	220	18	1200
Ø200×1000	2.5	220	18	1200
Ø250×1000	2.5	220	18	1200

Vertical Tube Furnaces

Our **VTF1200** series vertical tube furnaces feature the famous **Kanthal** (Sweden) spiral wire coils as their heating elements. These heating elements are embedded in **Mitsubishi** (Japan) alumina fiber insulation. The temperature is controlled by a high precision temperature controller (Shimaden fp93) with an accuracy of +/-1 °C, with 40 programmable segments up to 1200°C. A double walled steel internal housing helps minimize heat loss to the exterior surface. The furnace tube is sealed by stainless steel vacuum sealing flanges that can be used under vacuum and other gas condition.

VTF1200 furnaces have a built-in interface to connect to a computer, allowing for remote control monitoring of the furnace. We provide connection cable, adaptor, and software that can be used to control the temperature and parameters of the furnace, all from your PC! You can also save or export test results. They are ideal tools for sintering all types of materials, great for labs or college scientific research use. All of our furnaces are **CE certified**.



VTF1200 1200°C
Vertical Tube Furnace

Features

- Compact, portable, lightweight design.
- Microprocessor based self-tuning PID control provides optimum thermal process with minimal overshoot.
- Multiple atmosphere processes in a single cycle are possible.
- Built-in ammeter and dual voltmeters for easy monitoring and troubleshooting.
- Long lasting K-type thermocouple.
- Built-in PC interface.
- Includes a set of stainless steel vacuum sealing flanges with valves and pressure meter.

Safety features

- Furnace overheat protection cuts off power when temperature is over the desired range.
- Thermocouple protection cuts off power when the thermocouple is broken or malfunctioned.
- Temperature variation protection cuts off power when the difference between actual temperature and target temperature exceeds the desired range.
- Power failure protection: Resumes furnace operation after the point of failure, when power is restored.

<i>Tube Size (mm)</i>	Output (kw)	Voltage (v)	Heating Zone (inch)	Max Temp (°C)
<i>Ø60×1000</i>	2.5	220	17	1200
<i>Ø80×1000</i>	2.5	220	17	1200
<i>Ø100×1000</i>	2.5	220	17	1200

Muffle & Controlled Atmosphere Furnaces



CF1600 1600°C Muffle Furnace

CF series muffle furnaces feature a chamber with **Mitsubishi** (Japan) high quality alumina fiber insulation and molybdenum silicide (MoSi₂) heating elements. A double walled steel internal housing helps minimize heat loss to exterior surface. Furnace operation is controlled by a robust **Shimaden** (Japan) 40-segment digital controller with built-in RS485 digital communications port and USB adaptor, allowing the user to connect to a PC for remote control and monitoring of the furnace. You can also save or export test results.

- **Temperature controller:** Shimaden fp93, 40 programmable segments with +/- 1°C accuracy. Over-heat, power failure, and thermocouple malfunction protection.
- **Heating elements:** Kanthal resistance wire (1100°C), SiC (1300°C), MoSi₂ (1600°C)
- **Furnace chamber:** Al₂O₃ alumina fiber (Made in USA)

Chamber Size (inch)	1100°C Output	1400°C Output	1600°C Output
6 x 6 x 6	-	4 kw	-
12 x 8 x 8	3.5 kw	8 kw	7 kw
16 x 12 x 12	10 kw	13 kw	13 kw

GCF series controlled atmosphere furnace chambers have a polished stainless steel interior and the famous **Kanthal** (Sweden) heating elements installed. A double walled steel internal housing helps minimize heat loss to exterior surface. Furnace operation is controlled by **Shimaden** (Japan) 40-segment digital controller with built-in RS485 digital communications port and USB adaptor, allowing the user to connect to a PC for remote control and monitoring of the furnace. You can also save or export test results. All of our furnaces are **CE compliant**.

- **Temperature controller:** Shimaden fp93, 40 programmable segments, 6 sets of PID adjustment with +/- 1°C accuracy. Over-heat, power failure and thermocouple malfunction protection.
- **Heating elements:** Kanthal resistance wire (1100°C), SiC (1300°C), MoSi₂ (1600°C).
- **Furnace chamber:** Al₂O₃ alumina fiber (Made in USA)
- **Working environment:** Air, N₂, H₂ (wet or dry), Ar, NO₂, CO, CO₂, O₂, He, Ne, rough vacuum, etc.



GCF1600 1600°C 12x8x8" Controlled Atmosphere Furnace

Chamber Size (inch)	1100°C Output	1300°C Output	1600°C Output
6 x 6 x 6	-	4 kw	-
12 x 8 x 8	4 kw	7 kw	8 kw
16 x 12 x 12	9 kw	12 kw	13 kw
20 x 16 x 16	9 kw	-	-

Crystal Substrates & Targets

We carry a wide variety of crystal substrates, wafers, tubes, and targets, which can be customized for any application. Customizations we offer include sizing, thickness, miscuts, and number of polished sides.



Coating Wafers	Ceramic Substrates	Tubes
GaN on sapphire	AlN	Sapphire
Pt/Ti/SiO ₂ /Si	Al ₂ O ₃ 96%	Ruby
Sapphire	YSZ	

Crystal Substrates

Al	InP	LiTaO ₃	SiC	YAG
Al ₂ O ₃	InSb	Mg	SiO ₂	YSZ
BaF ₂	KBr	MgAl ₂ O ₄	SOI Si + SiO ₂ + Si	ZnO
CaF ₂	KCl	MgF ₂	SrLaAlO ₄	ZrO ₂ : Ga
Cu	KTa _(1-x) Nb _(x) O ₃	MgO	SrTiO ₃	
GaN	LaAlO ₃	NaCl	SrTiO ₃ : Fe	
Ge	LiAlO ₂	NdGaO ₃	SrTiO ₃ : Nb	
GGG	LiF	PMN-PT	TiO ₂ rutile	
InAs	LiNbO ₃	Si	YAIO3	

Targets with Customizable Size and Thickness

Al	Bi _(1-x) Sm _(x) FeO ₃	Fe	LuMnO ₃	NdAlO ₃	SrCuO ₂	W
Ag	Ce	Fe-Sc	La _{1.875} Sr _{0.125} CuO ₄	Nd ₂ CuO ₄	Sm ₂ O ₃	WO ₃
Au	Cr	FeTiO ₃	LaTiO ₃	NdScO ₃	SrMnO ₃	Y
Al ₂ O ₃ / ZnO	CaMnO ₃	Ga ₂ O ₃	La _(1-x) Sr _(x) MnO ₃	Ni	Sr _{0.6} Ca _{0.4} CuO ₂	Yb
B	CaRuO ₃	GeO ₂	La _(1-x) Ca _(x) MnO ₃	Nb ₂ O ₅	Sn	YSZ
Bi	CaCu ₃ Ti ₄ O ₁₂	GdScO ₃	LaCoO ₃	PbTiO ₃	Si	Y ₂ O ₃
BiFeO ₃	Ca _{0.3} Ba _{0.7} TiO ₃	Gd ₂ TiO ₅	LaFeO ₃	PbZr _(x) Ti _(1-x) O ₃	SrO	Yb ₂ O ₃
BaTiO ₃	CeO ₂	Gd ₂ Zr ₂ O ₇	LuFeO ₃	PrAlO ₃	SrFeO ₃	YBCO
BiYO ₃	CoFe ₂ O ₄	HfO ₂	LaGaO ₃	PrBa ₂ Cu ₃ O ₇	Sr _{0.5} Ba _{0.5} Nb ₂ O ₆	YMnO ₃
BaBiO ₃	CuO	HoBa ₂ Cu ₃ O ₇	La ₂ CuO ₄	Pr _(1-x) Ca _(x) MnO ₃	Sc ₂ O ₃	Zr
BaSnO ₃	Cr ₂ O ₃	In ₂ O ₃	LaSrFeO ₃	RuO ₂	SrSnO ₃	ZnO
BaZrO ₃	Dy ₂ O ₃	ITO	Mg	Ru	SiO ₂	ZnS
Ba _(1-x) Sr _(x) TiO ₃	DyScO ₃	KNbO ₃	MgO	Sc	SrZrO ₃	ZnO / MnO ₂
BaO	DyBa ₂ Cu ₃ O ₇	K _{0.5} Na _{0.5} NbO ₃	MoO ₃	SrTiO ₃	Ti	ZnCr ₂ O ₄
BaFe ₁₂ O ₁₉	ErMnO ₃	Lu ₂ O ₃	MoS ₂	SrRuO ₃	TiO ₂	
BaPbO ₃	Er ₂ O ₃	LaMnO ₃	Mo	ScMnO ₃	Ta ₂ O ₅	
	Eu ₂ Ti ₂ O ₇	LaAlO ₃	NiFe ₂ O ₄	SmScO ₃	TbMnO ₃	

PQ-N Gear-Drive Planetary Ball Mills

PQ-N series planetary ball mills are designed for mixing, homogenizing, fine grinding, mechanical alloying, cell disruption, small volume high-tech material production and even colloidal grinding. They are the ideal dry/wet milling tool for acquiring research samples with high efficiency and low noise. These ball mills can also grind samples in vacuum environment when used with our vacuum jars. PQ-N ball mills are used successfully in virtually all industry and research sectors. The main fields of applications are agriculture, biology and biotechnology, ceramics and glass, chemicals, construction materials, environmental research, medicine, mineralogy and metallurgy –just to name a few!



PQ-N04 4x100ml
Planetary Ball Mill

These planetary ball mills have four grinding stations arranged on the sun wheel of the planetary ball mill. When this rotates, the grinding balls inside the jars are subject to superimposed rotational movements, known as **Coriolis Forces**. The difference in speeds between the grinding balls and jars produce an interaction between frictional and impact forces, which release high dynamic energies. The minimum granularity of the final product can be as small as 0.1 micron. A wide range of grinding jars and different materials are available.

Grinding methods

- **Single direction, no timed stop** (ie. samples need long time milling, nonstop)
- **Single direction, timed stop** (ie. samples need to be milled one direction for 10 hours before the machine shuts down itself automatically)
- **Bidirectional, timed stop** (ie. samples need to run clockwise for 1.5 hours, then counter-clockwise for another 1.5 hours and so on, for 15 hours, before the machine shuts down itself)
- **Single direction with paused interval, timed stop** (ie. samples need to run for 0.5 hour, then pause for 1 hour, then run for another 0.5 hour in same direction and pause for another 1 hour, for 10 cycles before auto shuts down)
- **Bidirectional with paused interval, timed stop** (ie. samples need to run clockwise for 0.8 hour, pause for 0.5 hour, then run counter-clockwise for 0.8 hour, for 20 cycles, before it auto stops)

Specifications

- **Maximum feeding capacity:** 3/4 capacity of the milling jar (including milling balls)
- **Power:** 110V or 220V 50/60Hz single phase
- **Rotation speed:** **0.4L:** 0-600 rpm, **2L:** 0-580 rpm **4L:** 0-530 rpm **12/20L:** 0-440 rpm
- **Sun wheel vs milling jars speed ratio:** 1:2 (0.4L, 2L, 4L) 1:1.9 (12/20L)

<i>Model</i>	<i>Power</i>	<i>Specs</i>	<i>Compatible Non-Vacuum Jars</i>	<i>Compatible Vacuum Jars</i>	<i>Max Jar Qty</i>
PQ-N04	110v or 220v, 50/60Hz single phase	0.4L	50ml - 100ml	50ml	4
PQ-N2	110v or 220v, 50/60Hz single phase	2L	250ml - 500ml	100ml - 250ml	4
PQ-N4	220v 60Hz single phase	4L	500ml - 1000ml	250ml - 500ml	4
PQ-N12	480v 60Hz three phase	12L	1L - 3L	1L - 2L	4
PQ-N20	480v 60Hz three phase	20L	3L - 5L	2L - 3L	4

High Energy Ball Mills

Also known as shaker mills or mixer mills; the **VQN** high energy ball mill is a compact, high speed vibrating ball mill that is ideal for quickly making small quantities of powder samples. They have high impact energy, created by three different dimensional movements (rotation, vibration and oscillation). The inertia of the grinding balls causes them to impact with high energy against the sample material in the jar, effectively pulverizing it. The movement of the grinding jar combined with the movement of the balls results in the intensive mixing of the sample. The degree of mixing can be increased by using smaller grinding balls. For example, if many very small balls are used, biological cells can be disrupted.

VQ-N ball mills can be used in either dry or wet environments for samples such as solids, suspended liquids, and pastes different sizes. These are great machines for making small quantity sample in material and chemical research labs.

Features:

- Quick, efficient pulverization and homogenization
- High sample throughput due to short grinding time
- Large range of grinding jars available
- Loss-free wet grinding due to leak-proof grinding jars

Specifications:

- Discharging granularity: 0.1 micron minimum
- Oscillation frequency: 1,200 rpm
- Timing range: 999 seconds
- Power: 110V/220V 50/60Hz single-phase
- Watt: 180W
- Machine dimensions: 18 x 15 x 12"
- Shipping dimensions: 23 x 18 x 17"
- Weight: 45 lb
- One 80ml stainless steel jar included



VQ-N 80ml
High Energy Ball Mill

Milling jars in different materials

Type	Stainless Steel	Agate	Alumina	Nylon	Teflon	Zirconium Oxide	Vacuum Stainless Steel	Vacuum Jacket	Regular Jacket
50ml	-	A	A	A	A	A	-	A	A
80ml	A	-	-	-	-	-	A	-	-

A (available) - (not available)

Digital Microscopes with HD LCD Screens



MS4 Microscope

Tired of peering into the tiny eyepieces of a traditional microscope? Carrying a laptop with your microscope to a presentation or setting up the complicated software on your PC? The answer is our revolutionary microscopes with HD resolution (1280x800) LCD screens. They free you from the fatigue, nausea, dizziness, myopia or blurred vision caused by working for a long time through traditional eyepieces. They allow you to view and share your work with your group thru the built-in 9 inch screen, output to a PC or projector thru a USB/HDMI cable, and record high resolution snapshots or videos on an SD card thru the built-in slot. Great for schools, universities or research labs.



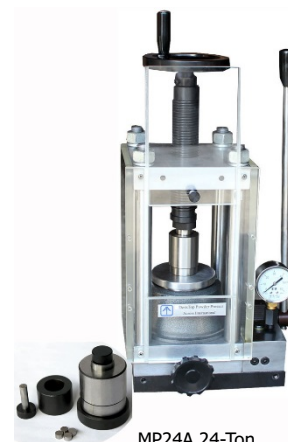
MG23 Microscope

Model	MS4	MG23
LCD Screen	9 inches with 1280x800 HD resolution	
Application	Biological and Stereo	Stereo
Camera	4 Mega pixels	5 Mega pixels
Video Resolution	720p at 30 FPS	
Biological Objectives	4X / 10X / 20X / 40X	—
Digital Magnification	8X	
Total Magnification	100X – 1280X	12X -76X
Photo/Video Playback	Yes	
Data Output	AV, USB and HDMI	USB and HDMI
Storage	SD card	
External Interface	PC / TV / Projector	
Measurement	Crosshair	
Positioning	Crosshair / Arrow pointer	
Crosshair coordinate color	Black / White / Red / Blue / Green	
Focusing System	Coaxial coarse / Fine focus system	
Stage	Double layers mechanical stage	
Condenser	Sliding-in condenser NA1.25	
Illumination	Transmitted / Reflected / Coaxial light	Adjustable 4-direction circular illumination system
Exposure and White Balance	Manual / Automatic	
Menu Language	English / Korean / Japanese / Russian / French / German / Arabic / Latin / Spanish	
Power	110-230VAC 50/60Hz single phase	

Manual Laboratory Pellet Presses

MP series desktop manual pellet presses can press up to 40 metric tons. They are frequently used in material and chemistry research laboratories to prepare compound samples or pellets. These pellet presses feature a built-in hydraulic pump and are great for operation in a glove box under oxidizing and other inert gas atmospheres.

- High reliability with auto return function
- Achieve pressure in short amount of time
- Safe and very easy to operate
- Quick die release
- Great press holding capability



<i>Model</i>	Dimensions (inch)	Weight (lb)	Pressure (ton)	Operation Mode	Max Working Space (inch)	Hydraulic Cylinder Travel (mm)
MP24A	11 x 8 x 18	75	24	Manual	4 x 4 x 5.5	0-25
MP40	13 x 8 x 22	120	40	Manual	6.1 x 4 x 6.7	0-25

Heated Presses

New from Across International, the 2016 Ai **HandPress**, **SwingPress**, **AirPress**, and **HydroPress** heated presses are designed with ease of operation in mind. These presses are ideal for samples requiring constant pressure and even heating. The aluminum heating platens ensure an even transfer of heat, and allow the surface of the platens to be quickly and easily cleaned for the next use. We offer a variety of presses, including hand operated, air compressed, and electric.

Features

- Easy loading and unloading capabilities
- Digital timer and alarm
- Dual heating platens for increased temperature stability
- Dual LCD temperature controllers, displays in Fahrenheit or Celsius



<i>Model</i>	HandPress-0302	HydroPress-0302	SwingPress-0403	SwingPress20-0403	AirPress-0302
<i>Power</i>	110V 60Hz , 1100 watts	110V 60Hz , 1000 watts	110V 60Hz , 1100 watts	110V 60Hz , 800 watts	110V 60Hz , 1100 watts
<i>Heated Platens</i>	3 x 2"		4 x 3"		
<i>Pressure</i>	1,000 lbs / 167 PSI	4,370 lbs / 728 PSI	22,000 lbs / 1,833 PSI	44,000 lbs / 3,667 PSI	4,110 lbs
<i>Air Compressor</i>	Not required to operate.				Requires a compressor with 1/2" connection (not included).
<i>Platen Details</i>	Solid aluminum with individual temperature controllers (top and bottom)				
<i>Temp Range</i>	Ambient to 480 °F / 250 °C				

All of our Ai heated presses include a 90 day warranty. Important: AirPress units do not include an air compressor.

Ultrasonic Homogenizers

Ultrasonic homogenizers are used to disrupt tissues and cells through cavitation and ultrasonic waves. The titanium alloy tip rapidly vibrates, causing bubbles in the surrounding solution to rapidly form and collapse. This creates shear and shock waves which tear apart cells and particles.

These machines are recommended for homogenization and lysis of laboratory samples that do not require traditional grinding techniques for processing. Sonication can be used for the production of nanoparticles, such as nanoemulsions, nanocrystals, liposomes and wax emulsions, as well as for wastewater purification, degassing, extraction of plant oil, extraction of anthocyanins and antioxidants, production of biofuels, crude oil desulphurization, cell disruption, polymer and epoxy processing, adhesive thinning, and many other processes.

Features

- 7" color touch screen controller
- Built-in temperature probe
- Corrosion-resistant titanium alloy probe (PH value 3-10)
- Programmable power and timing features
- Frequency and sample temperature display
- Sound enclosure reduces noise from high-powered sound waves
- Large viewing window for monitoring samples while processing
- A variety of optional, easy-to-swap ultrasonic probes are available
- Compact and lightweight with plug and play design; no assembly required



U10 1-Quart Ultrasonic Homogenizer

<i>Model</i>	U10	U15
<i>Power</i>	110V 60Hz 1-PH , 550 watts	110V 60Hz 1-PH , 650 watts
<i>Capacity</i>	1 quart / 1,000 mL	1.5 quarts / 1,500 mL
<i>Duty Cycle</i>	5-10 mins of rest is recommended after 30-60 mins of continuous operation	
<i>Included Probe</i>	15mm diameter tip made of titanium alloy	
<i>Probes Available</i>	10 mm, 15 mm, or 25 mm diameter tip	



A wide variety of titanium alloy tips are available.

Digital Forced Air Convection Drying Ovens

FO series desktop forced air ovens use a microcontroller to enhance temperature precision, accuracy and uniformity. The memory function saves you time by retaining all of your settings when the power is down and will resume previous oven operation once powered on again. An alarm can be set to trigger when the current temperature is outside of the desired range, or when the actual working temperature is not within the desired setup range.



FO-19053 1.9 Cu Ft
Forced Air Drying Oven

- Built-in temperature calibration with 1 to 9999 minutes timer capability.
- Corrosion resistant stainless steel interior with double glazed observation window.
- Overheat protection automatically cuts power when temperature is over limit, or if the sensor fails.

Model	FO-19013	FO-19023	FO-19053
Power	110V/60Hz single phase		
Temperature Range	50°C - 200°C		
Temperature Uniformity	±1°C		
Alarm Range	±5°C		
Output	500 watts	500 watts	800 watts
Chamber Dimensions (inch)	10x10x10	12x11x11	17x15x14
Machine Dimensions (inch)	21x17x17	24x20x18	28x22x21
Chamber Capacity (Cu Ft)	0.5	0.9	1.9



FO-19140 4.8 Cu Ft
Forced Air Drying Oven

FO series bench top forced air ovens use digital micro-computer to control its temperature, thus enhance precise temperature accuracy and uniformity. Memory function saves you time from setting the oven every time, it also memorizes all you settings when power is down, and resumes previous oven operation when power comes back up. Alarm can be set when actual working temperature is not within desired setup range. Timer ranges from 1 to 9999 minutes.

- Larger chamber size, higher maximum temperatures.
- Built-in temperature calibration.
- Gentle downward flow along chamber interior provides less disruption to sample materials.
- Air circulation and heating can be operated separately.

Model	FO-19040	FO-19070	FO-19140	FO-19240	FO-19440	FO-19640
Power	110V/60Hz single-phase			220V/60Hz single-phase		480V/60Hz three-phase
Output	1000 watts	1500 watts	2000 watts	2500 watts	3500 watts	6400 watts
Alarm Range	±5°C					
Uniformity	±1°C					
Temperature Range	50°C - 300°C					
Chamber Size (inch)	14x12x14	18x14x18	22x16x22	24x20x30	27x26x35	31x31x39
Machine Size (inch)	20x21x26	24x23x30	27x27x34	30x27x42	33x32x50	38x39x52
Chamber Capacity (Cu Ft)	1.5	2.5	4.8	8	14.5	22

Digital Vacuum Drying Ovens

AccuTemp 1.9 Cu Ft Vacuum Oven



AccuTemp series vacuum ovens are the #1 award-winning brand in vacuum systems. They greatly minimize the drying time for various materials, all while providing excellent temperature uniformity inside the chamber. A vacuum environment will also lower the boiling point for liquids, which is great for heat sensitive material processing. The option of adding white, UV, and amber LED lighting is available for these units, making it easy to view and monitor samples inside of the chamber.

The spacious 3.2, 7.5 and 16 cu ft **AccuTemp** vacuum ovens feature our internal shelf heating technology. Each of these built-in shelves has its own heating, in-shelf temperature sensor, and PID controller. With our low proportional controllers, the result is perfect temperature uniformity, accuracy, and ultra-fast heating rates.

Features

- Third generation PID controller with built-in temperature calibration.
- Adjustable gas backfill capability with needle valve and vent port, perfect for creating inert gas environments or reintroducing air back into the chamber at a controlled rate.
- Aluminum shelving for the best thermal conductivity.
- Consistent, stable temperature accuracy of ± 1 °F.
- Large, dual layer observation window with 1/2" tempered safety glass.
- 3" thermal insulation, preventing heat loss from the chamber.
- A built-in vacuum check valve prevents vacuum oil backflow.
- Easy to clean stainless steel interior with exceptional **durability**.



AccuTemp 16 Cu Ft Vacuum Oven

Model	AccuTemp-09	AccuTemp-19	AccuTemp-32	AccuTemp-75a	AccuTemp-160
Power	110V or 220V 50/60Hz single phase		110V 60Hz single phase	110V or 220V 50/60Hz single phase	220V 50/60Hz single phase
Temperature Range	Ambient to 480 °F				
Temperature Uniformity	$\pm 7\%$ of set point	$\pm 6\%$ of set point	± 1 °F accuracy		
Warm-up to 100 °F	60 minutes		35 minutes	45 minutes	
Output	1200 watts	1500 watts			3000 watts
Shelf	8 removable (4 included)	10 removable (5 included)	3 built in, max 6	5 built in, max 10	6 built in, max 12
Heating	3-sided	4-sided	Each built-in shelf can be individually heated to a unique temperature.		
Chamber Dimensions (inch)	12x12x11	16.5x14.5x14	18x18x18 divided into three sections	22x23.5x25 divided into five 22x23.5x4.5 sections	25.5x30.5x35.5 divided into six 25.5x30x5 sections
Unit Dimensions (inch)	28x32x65	28x20x21.75	30.5x24x29	35x31x38	33x36x53
Chamber Size (Cu Ft)	0.9	1.9	3.2	7.5	16.0

Elite Digital Vacuum Drying Ovens

The newly designed **Elite** series vacuum ovens feature a 5-sided jacketed heating system, evenly distributing heat for exceptional temperature uniformity. A built-in over-temp dial provides enhanced protection, making these ovens ideal for thermal-sensitive heating processes. These ovens quickly and efficiently achieve an industry best 3% temperature uniformity across all shelves. An extra uniformity port can be adjusted, allowing for more precise control compared to other vacuum ovens.

The option of adding white, UV, and amber LED lighting is available for these units, making it easy to view and monitor samples inside of the chamber.



Elite 4.4 Cu Ft Vacuum Oven

Features

- Microcomputer PID temperature controller.
- 5-sided chamber jacketed heating system, providing exceptional temperature uniformity.
- Adjustable gas backfill capability with needle valve and vent port, perfect for creating inert gas environments or reintroducing air back into the chamber at a controlled rate.
- Built-in over-temperature dial for temperature protection.
- The most efficient target temperature warm-up times.
- Temperature uniformity port, allowing for closer regulation of temperature uniformity.
- Best in class 2-year, no-cost warranty.

<i>Model</i>	E10	E23	E44	E76
<i>Power</i>	110V 50/60Hz single phase		110V or 220V 50/60Hz single phase	220V 50/60Hz single phase
<i>Temperature Range</i>	Ambient to 250 °C			
<i>Temperature Uniformity</i>	± 3% of set point			
<i>Warm-up to 100 °F</i>	25 minutes	30 minutes	35 minutes	45 minutes
<i>Output</i>	1100 watts	1500 watts	3000 watts	4500 watts
<i>Shelf</i>	4 removable	5 removable	6 removable	3 built in, max 9
<i>Heating</i>	Jacketed, 5-sided heating surrounding the chamber			
<i>Chamber Dimensions (inch)</i>	11.8x11.8x11.8	15.7x15.7x15.7	19.7x19.7x19.7	22x23.5x25 divided into three 22x23.5x7
<i>Machine Dimensions (inch)</i>	22x20x30.5	27x25x34.7	32x29.5x41	35x31x38
<i>Chamber Capacity (Cu Ft)</i>	1.0	2.3	4.4	7.6

Vacuum Cold Traps

In vacuum applications, a cold trap is a device that condenses all vapors except the permanent gases into a liquid or solid. The most common objective is to prevent vapors being evacuated from an experiment from entering a vacuum pump where they would condense and contaminate it.

Pumps that use oil either as their working fluid (diffusion pumps), or as their lubricant (mechanical rotary pumps), are often the sources of contamination in vacuum systems. Placing a cold trap at the mouth of such a pump greatly lowers the risk that oil vapors will back stream into the vacuum chamber.

The **T40** Across International vacuum cold trap is suitable for a wide range of applications.



T40 Vacuum Cold Trap

T1 cold trap features:

- No need for dry ice or liquid nitrogen.
- Finely polished type 304 stainless steel interior.
- Pyrex® glass traps with 3/8" hose barb vacuum connections.
- Mess-free, easy set-up and installation.

Model	T40
Power	110V 60Hz 1-PH 6A or 220V 60Hz 1-PH 3A
Output	660 watts
Temperature Range	Ambient to -40° F
Reservoir Volume	0.9 gallons (3.5 liters)
Vacuum connection	3/8" hose barb
Trap Volume	300 mL (x2)
Coolant	Antifreeze or ethyl alcohol (recommended)



T1 Vacuum Cold Trap

T1 cold trap features:

- Utilizes dry ice for optimal efficiency
- Comes with a scissor jack for easy removal of the collection flask
- Easy to clean all glass construction
- No electrical requirements
- Easy set up
- Free six feet 3/8" white premium food grade silicone vacuum tubing (\$40 value) included

The **T1** cold trap measures 6 x 10 x 28" when fully assembled.

Rotary Evaporators

A rotary evaporator is a device used in chemical laboratories for the efficient, gentle removal of solvents from samples by evaporation. Rotary evaporation is most often used to separate solvents with low boiling points, such as n-hexane or ethyl acetate, from compounds which are solid at room temperature and pressure. However, careful application also allows removal of a solvent from a sample containing a liquid compound, if there is minimal co-evaporation (azeotropic behavior), and a sufficient difference in boiling points at the chosen temperature and reduced pressure.

Model	SE05	SE13	SE26	SE53	SE130
Power	110V 50/60Hz single phase		220V 50/60Hz single phase		
Rotation Motor Power	25 watts	40 watts	300 watts	250 watts	
Evaporating Flask	2 liter	5 liter	10 liter	20 liter	50 liter
Receiving Flask	1 liter	3 liter	5 liter	10 liter	20 liter
Rotation Speed	10-180 RPM	10-140 RPM	10-130 RPM		10-110 RPM
Condenser	Vertical with dual-spiral glass tubing		Main & auxiliary triple-circulating cold traps, vertical		
Evaporating Speed	20 ml/minute	0.5-1.0 gal/hour	0.75-1.5 gal/hour	1.32-2.9 gal/hour	2.4-4 gal/hour
Number of Heaters	One		two	Three	
Maximum Lifting Distance	4 inches	6 inches	4 inches	7.5 inches	9 inches

Features

- Solvent-resistant PTFE and Viton gaskets ensuring long time operation.
- Specialized motor with compact intermeshed worm and worm gear provide precise, vibration-free operation.
- Modular design (individual rotary and water bath modules) for easy future upgrade.
- Easy multi-level manual evaporating flask lifting with lock.
- Operate visually and easily with digital speed and temperature display.
- PID temperature controller for accurate temperature control.
- One year warranty and life time US-based parts and service support.



SE05
0.5 Gallon Rotary Evaporator



SE130
13 Gallon Rotary Evaporator

Glass Reactors



Across International R-series glass reactors are designed for synthetic reaction of different types of materials in a controlled temperature and vacuum environment. Each reactor features adjustable stirring speeds and a constant pressure feeding funnel that allows you to add material to the vessel at a uniform and controlled speed. The built-in condenser makes it possible to recover some materials, also at a controlled rate of speed.

<i>Model</i>	R10	R20	R50	R100
<i>Electrical Requirements</i>	110V 60Hz 1-PH, 90W		110V 60Hz 1-PH, 140W	110V 60Hz 1-PH, 250W
<i>Vessel Capacity</i>	10L / 2.6 gallons	20L / 5.3 gallons	50L / 13 gallons	100L / 26 gallons
<i>Cooling/heating Capacity</i>	3L / 0.8 gallons	6L / 1.6 gallons	16L / 4.2 gallons	30L / 8 gallons
<i>Drain Port Ground Clearance</i>	15"	13"	12.5"	13.5"
<i>Unit Height (Fully Assembled)</i>	78"	80"	88"	98"
<i>Vacuum Level</i>	< 700 torrs			
<i>Temperature Range</i>	-110 °F to 400 °F			
<i>Agitator</i>	Anchor design, type-304 stainless steel reinforced PTFE structure			

Short Path Distillation

Short path distillation is often used for compounds which are unstable at high temperatures, or to purify small amounts of compound. The advantage is that the heating temperature can be considerably lower (at reduced pressure) than the boiling point of the liquid at standard pressure, and the distillate only has to travel a short distance before condensing. A short path ensures that little material is lost on the sides of the apparatus.



Clear2w turn-key 2L short path with Ai T1 cold trap, AutoVac vacuum controller, Welch pump and Polyscience chiller.

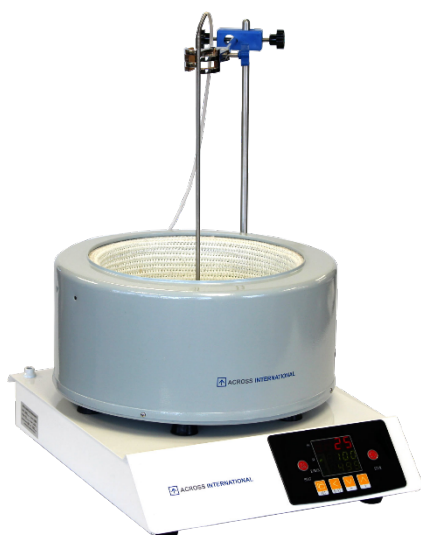
Short path distillation kit features

- Extra thick glassware for durability
- Vacuum jacketed vapor channel
- Glass material: high borosilicate glass 3.3

Digital Heating Mantles & Stirrers

The plug-and-play **DigiM-series** heating and stirring mantle comes standard with a large digital display for accurate control, plus easy temperature and rotation speed readings. Two sets of thermocouples allows you to detect the heating output and material temperatures.

Our short path equipment is **available in 2, 5, and 10 Liter** configurations. Digital vacuum controllers, spare glassware, and chillers are also available. Turn-key packages are available at www.acrossinternational.com! Contact us to discuss your short path needs with our highly skilled sales team.



DigiM5, 5L Heating Mantle & Stirrer

Compressor-Based Recirculating Chillers



C15 Chiller

Across International's outstanding line of recirculating chillers offer true thermostatic control, delivering unparalleled performance with exceptional reliability, as well as quiet operation and ease-of-use. A powerful force/suction pump provides constant flow rates, while the microprocessor PID controller delivers the most accurate temperature control, whether you need cooling or heating for your process. All of our chillers come with a one year warranty and our lifelong, outstanding technical support.



C30 Chiller

Features & Benefits

- No dry ice or liquid nitrogen needed for operation.
- Over-temperature protection.
- Compressor overload protection.
- Plug-and-play interface. No additional assembly required!

Specifications	C15-3	C20-7	C30-10	C30-17	C30-30	C-30-40
Power	110V 60Hz 1-PH		110V 60Hz 1-PH or 220V 60Hz 1-PH	220V 60Hz 1-PH		
Temperature Range	Ambient to -15° C	Ambient to -20° C	Ambient to -30° C			
Capacity	3 liters / 0.8 gallons	7.5 liters / 1.9 gallons	10 liters / 2.6 gallons	17 liters / 4.5 gallons	30 liters / 8 gallons	40 liters / 10.6 gallons
Pumping Speed	17 liters/min or 4.5 gal/min	20 liters/min or 5.3 gal/min				30 liters/min or 8 gal/min
Temperature Controller	Digital microprocessor PID in °C					
Temperature Accuracy	+/- 2° C					
Recommended Coolant	Ethyl alcohol					
Unit Dimensions	16 x 9 x 22" (WxDxH)	2 x 15.5 x 26" (WxDxH)	6.5 x 17 x 27" (WxDxH)	26.5 x 18 x 30.5" (WxDxH)	30 x 19.5 x 34" (WxDxH)	40 x 25 x 41" (WxDxH)
Suggested Rotary Evaporator	Ai SolventVap 2L		Ai SolventVap 5L	Ai SolventVap 10L	Ai SolventVap 20L or 50L	Ai SolventVap 50L

PolyScience Chillers

Across International is a proud authorized distributor for **PolyScience**. These powerful, low-temperature chillers are well matched for use with rotary evaporators, vacuum systems, spectrometers, and other analytical equipment.



Designed for high heat removal in demanding environments, **DuraChill® Chillers** provide robust and reliable temperature control for closed, external systems such as pilot plants, medical diagnostic equipment, metalworking lasers, and plastic molding machines. These chillers are suitable for a very wide range of applications.

Features

- Large, dual displays present temperature and pressure or flow rate simultaneously
- Compact, portable design takes up less floor space
- Cooling at ambient temperatures as high as 35°C
- Choice of pumps and compressor sizes
- User-adjustable temperature, pressure, and flow rate alarms
- External temperature tracking and communications capability (optional)

PolyScience DuraChill@ 13L -10°C Chiller

We carry a wide range of suitable PolyScience chillers, in addition to the DuraChill® line.

JULABO Chillers

Across International also proudly distributes JULABO chillers.



Julabo 30L -20°C Chiller

Made in Germany, **JULABO** recirculating coolers can handle virtually any cooling requirements in laboratories or industrial environments. Their efficiency makes them an environmentally-friendly and economical alternative to cooling with tap water. Compact models from JULABO are ideal for placement on or underneath a laboratory bench. JULABO offers several powerful models with up to 20 kW of cooling capacity for applications in industrial environments.

The **FL series** offers a new generation of chillers for routine cooling applications within the laboratory and industry. The temperature stability of the PID control is $\pm 0.5^\circ\text{C}$. All units can easily be cleaned and are provided with a splash water proof keypad with LED temperature indication. On the front of the units there is an RS232 interface as well as an alarm shutdown. The filling port is easily accessible placed on the top under a lift-up cover. Another hinged tray serves as a file for the operating manual or other documents

concerning the installation. The removable venting grid allows an easy cleaning of the condenser, the drain tap is easily accessible behind the grid. All models include an easily visible level indication. Another advantage is the venting slots are on the front and rear and therefore the units can be placed directly one beside the other, saving space.

Glacier Freezers

Introducing the newest Ai Glacier line of ultra-low freezers. These powerful freezers come with UL and CSA certification for easy integration into any lab. Capable of reaching temperatures as cold as -86°C , Ai Glacier freezers preserve samples using the latest in energy efficient technology.

The all new Ai Glacier 4 Cu Ft -86°C ultra-low freezer is designed for small labs that need a small number of products or sample storage.

Features

- Digital temperature display with microprocessor-based temperature controller.
- Tons of security features to protect you, your products, and the unit. Including but not limited to: Door lock, temperature alarms, power failure alarm, door open alarm, filter clogging alarm, and password protection.
- Built-in printer tells you exactly how long it takes to get to the target temperature.
- Stainless steel interior for clean operation, durability, and ease of maintenance.
- Dual silicon sealing gaskets for air-tight operation.
- 72-hour battery backup for controller, alarm and printer.



The Ai Glacier 18.3 Cu Ft & Ai Glacier 27.1 Cu Ft ultra-low freezers are perfect for large storage of sample and products.

Features

- Central control with large 7" touch screen LCD display provides you a graph of temperature vs time curve.
- Tons of security features to protect you, your products, and the unit. Including but not limited to: Door lock, temperature alarms, power failure alarm, door open alarm, filter clogging alarm, and password protection.
- Stainless steel interior for clean operation, durability, and ease of maintenance
- Dual silicon sealing gaskets for ultra-air tight operation
- 72-hour battery backup for controller
- USB interface for data export and storage

<i>Specifications</i>	<i>G04</i>	<i>G18</i>	<i>G27</i>
<i>Power Requirements</i>	110V 60H 1-Phase 950 watts 8.6A	110V 60H 1-Phase 1160 watts 10.5A	110V 60H 1-Phase 1250 watts 11.4A
<i>Temperature Range</i>	-10°C to -86°C		
<i>Cooling time to -86°C</i>	3.5 to 4 hours	8 hours	
<i>Controller</i>	Digital temperature display with microprocessor	Central control with large 7" touch screen LCD display	
<i>Access ports</i>	One	Two	
<i>Chamber</i>	17.75 x 19 x 20" (WxDxH)	23 x 27.25 x 49.5" (WxDxH)	36.5 x 27.5 x 51" (WxDxH)
<i>Shelf</i>	One	Three	

Rotary Vane Vacuum Pumps

EasyVac rotary vane (oil-based, “wet”) pumps are popular because they are inexpensive, efficient, and get the job done quickly. We proudly manufacture a wide variety of vacuum pumps that produce the perfect amounts of pressure for your experiments. The speed at which your vacuum pump is able to produce your desired purging pressure depends on your pump’s CFM rating. This higher the CFM rating on your pump, the faster it will be able to bring your vacuum oven to its optimal purging pressure.

The **SuperVac** commercial grade heavy duty dual-stage vacuum pumps will take your vacuum down to 0.3 micron in a matter of minutes. These pumps are designed for reliable, long time continuous operation. These pumps also feature an adjustable gas ballast, for purposefully pulling a slower, less deep vacuum when opened. This allows for dry air to go directly into the pump and dilute the vacuum pull. Because of the diverse range of vacuum levels the gas ballast offers, these pumps are great for labs with multiple vacuum level requirements.

Our **EasyVac** and **SuperVac** pumps come standard with all of the necessary fittings, as well as a high capacity exhaust oil mist filter, which also returns trapped pump oil back to the pump and makes the pump quieter to run.



EV9 Rotary Vane Vacuum Pump

Features:

- Adjustable gas ballast (SuperVac models).
- Built-in oil back-flow prevention check valve.
- Internal forced oil cycling system.
- All necessary fittings and filter included for immediate use.
- Exhaust filter with easy-to-change replaceable filter element.



SuperVac 11.3 cfm Dual-Stage Vacuum Pump

Model	EV2	EV7	EV9	SV5	SV11C	SV21C
<i>Pumping Rate</i>	1.8 CFM	7 CFM	9 CFM	5.6 CFM	11 CFM	21.2 CFM
<i>Vacuum Level Without Gas Ballast</i>	75 micron		3.75 micron	0.3 micron		
<i>Vacuum Level with Gas Ballast</i>	-			6 micron		
<i>Pumping Stages</i>	Single stage		Dual stage			
<i>Corrosion-Resistant</i>	-				Yes	
<i>Included Tubing</i>	Silicon food-grade tubing		Stainless steel bellow, clamps, and o-rings			
<i>Vacuum Connection</i>	3/8" hose barb		KF25			
<i>Filter</i>	Includes a stainless-steel filter with easy-to-replace filter element, KF25 clamp, and o-ring.					

Oil-Free Dry Scroll Vacuum Pumps



The **CleanVac** line of vacuum dry scroll pumps are completely oil-free with low ultimate pressures, low power consumption, low vibration, and low noise levels. They offer the ideal solution to maintaining a clean vacuum environment, while completely eliminating the need for time-consuming routine oil changes. Because of their air-cooled system, CleanVac pumps are free from installation restrictions.

CleanVac pumps come standard with an adjustable gas ballast, which allows for a purposefully less deep, slower vacuum level. The ballast also helps to keep moisture, solvents, and other contaminants from getting stuck in the pump. These incredible pumps feature the latest in tip seal technology, giving significantly longer life between tip seal changes. CleanVac pumps are designed for reliable long time continuous operation. As always, we proudly back our equipment with a one year manufacturer's warranty.

Features

- Adjustable gas ballast.
- Premium KF25 flexible stainless steel bellow with clamps and o-rings.
- Internal forced oil cycling system.
- All necessary fittings and filter included for immediate use.

<i>Model</i>	CV5	CV11	CV22
<i>Pumping Rate</i>	5.1 CFM	10.9 CFM	22.3 CFM
<i>Vacuum Level</i>	60 micron	19 micron	7.5 micron
<i>Noise Level</i>	< 57 dB(A)	< 61 dB(A)	< 63 dB(A)
<i>Included Tubing</i>	Stainless steel bellow, clamps, and o-rings		
<i>Vacuum Connection</i>	KF25 flange		

ULVAC Vacuum Pumps

Manufactured and imported directly from Japan, ULVAC DTC series diaphragm pumps feature integral forced-air cooling. They have two-stage PTFE diaphragms that are ideal for pumping corrosive gases and organic solvents. These pumps are oil-free, portable, and chemical-resistant, which means less maintenance and no more frequent and costly oil change, or cross contamination. Across International is the official dealer of ULVAC vacuum pumps. These pumps are made in Japan with one year warranty and technical support from ULVAC.



DTC-41, 1.6 CFM

Applications: Rotary evaporators, evaporating systems, vacuum concentrator, vacuum filtration, vacuum drying systems, medical/pharmaceutical equipment, centrifuge, and laser-gas circulation



DA-241, 9.2 CFM

Applications: Alcohol evaporation, vacuum chucks, wafer and tip handling devices, vacuum tweezers, medical appliances, printing equipment, automatic packing machines, optical appliances, semiconductor industry



GLD-201B, 8.5 CFM

Applications: Chemical, analyzer and laser systems, vacuum pumping systems, backing pumps for electronic microscopes, semiconductor equipment, sputtering equipment, vacuum evaporation equipment, vacuum drying, freeze drying

<i>Model</i>	ULVAC DTC-41	ULVAC DA-241	GLD-201B
<i>Pumping Rate</i>	1.62 CFM	9.2 CFM	8.5 CFM
<i>Ultimate Vacuum Level</i>	7.5 torr / 10 mbar	120 torr	5 micron
<i>Full Load Current</i>	1.1 amps	6.0 amps	7.9 amps
<i>Inlet/Outlet</i>	3/8" hose barb		KF25 / Threaded
<i>Electrical Requirements</i>	110V 60Hz 1-PH, 0.13 HP, 100 watts	110V 50/60Hz or 220V 50/60Hz 1-PH, 400 watts	110V 50/60Hz or 220V 50/60Hz 1-PH, switchable
<i>Certification</i>	CE, TUV		-

Edwards Vacuum Pumps



Edwards E2M28

- high ultimate vacuum
- rapid pumping speed
- 1yr. warranty included

The **Edwards E2M28** pump is a dual stage, direct drive, sliding vane pump. The pump is oil sealed and designed for reliable, long-term operation in both laboratory and industrial environments. The E2M28 is a freestanding unit with the drive provided through a flexible coupling by either a single-phase or three-phase (four-pole) motor. Renowned for its high ultimate vacuum, rapid pumping speed, quiet operation and ability to handle vapor, the E2M28 has become the industry standard for laboratory and light industrial applications.



The **Edwards nXDS10iC** is the next generation of completely oil-free and chemical resistant, dry scroll pumps. This pump features a 7.5 CFM vacuum speed and includes many key improvements on the legacy XDS pumps, including:

- Increased pumping speeds.
- Lower ultimate pressures.
- Lower power consumption.
- Lower noise volumes.
- Longer lasting tip seal technology.



The **nXDS20iC** is up to 20 times quieter than other pumps. Its intelligent control functions and up to five year service interval offer low cost of ownership, making it the small dry pump of choice for today's most advanced technologies.

Edwards nXDS20iC Features and Benefits:

- Chemical and corrosion resistant with Chemraz® internal valves and stainless steel fittings for extra protection from the pumped media
- Lubricant-free within the vacuum envelope and hermetically sealed means totally clean and dry vacuum to prevent cross contamination
- No atmosphere to vacuum shaft seals means bearings are completely isolated, which prevents process attack and means the bearings run cooler and last longer
- Simple single sided scroll arrangement combined with an innovative motor and bearing design allows for easy field service with a minimum of special tooling for low cost of ownership and maximum up-time
- Improved motor and drive efficiencies for reduced power and cost of ownership
- Advanced interface provides a variety of traditional, analogue and digital control methods enabling remote control/monitoring via USB, RS232 or RS485

Edwards RV-series pumps have become the industry standard for scientific primary pumping applications. RV pumps are uniquely capable of delivering high or low throughputs with high ultimate vacuum, making them ideal for a wide range of applications. The pumps have the unique ability to deliver excellent ultimate vacuum, with or without a gas ballast. This gives the user an unrivalled opportunity to select the optimum performance level of the pump, without compromising other aspects of their process.

RV8 Features and Benefits:

- 6.9 CFM vacuum speed.
- Quiet operation (48 dBA 50Hz).
- Fast acting inlet valve for system protection.
- Oil-tight with printed gaskets, effective shaft seals.
- Free KF25 flexible stainless steel bellow, clamps, and centering rings set.
- One year manufacturer’s warranty and technical support from Edwards.

Edwards RV8 Dual-Stage Pump



XDS46iC 35 CFM Vacuum Pump

XDS scroll pumps have become industry standard when dry pumping is essential, proving to be a robust and clean vacuum pump solution in a range of applications and processes.

The C variant has been modified so that it is more suitable for use on vapor handling processes and may be used in some applications using corrosive substances. The C version is fitted with Chemraz® internal valve pads and stainless steel exhaust port.

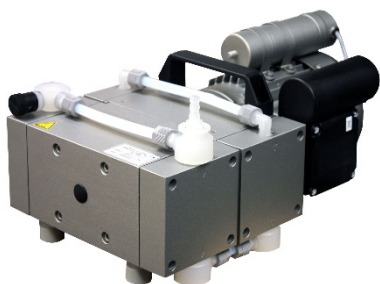
Features and Benefits:

- Lubricant-free within the vacuum envelope and hermetically sealed means a totally clean and dry vacuum to prevent cross contamination.
- No atmosphere to vacuum shaft seals means bearings are completely isolated, this prevents process attack and enable the bearings to run cooler and last longer.
- No oil to change eliminating cost of contaminated oil disposal.
- Simple single sided scroll design allows maintenance to be done in minutes for low cost of ownership and maximum up-time.
- Inverter drive for consistent pumping speeds worldwide.



XDS35iC 25 CFM Vacuum Pump

Welch Vacuum Pumps



Welch-2052 Vacuum Pump

Across International is proud to be an authorized dealer for Welch vacuum pumps, manufactured in the USA.

The **Welch-2052** is a high capacity, chemical duty vacuum pump that is oil-free, chemical resistant, and portable. It features a quad-stage, dry diaphragm with an ultimate vacuum pressure of 1.5 Torr at a rate of 2.3 CFM.

For processes requiring a slower vacuum rate, look no further than the compact **Welch-2042**. At our most gentle pumping rate of 1.2 CFM, these compact pumps are great when paired with rotary evaporators, small vacuum ovens, centrifugal concentrators, or when working with harsher solvents and chemicals.

Both the **2052** and **2042 Welch** models include a one year warranty and technical support direct from Welch. A free 3/3/8" premium food grade silicone vacuum tubing (\$19.99 value) is also included with the purchase of any Welch pump.



Welch-2042 Vacuum Pump



Welch 2163B-01
Vacuum Pump

The **Welch 2163B-01** is a high capacity full chemical-resistant, 8-head, oil-free dry diaphragm vacuum pump with all-aluminum contact surfaces and deep vacuum capability. Oil-Free, portable, full chemical-resistant, means less maintenance and no more frequent and costly oil change, or cross contamination.

The new **ChemStar Dry** series is Welch's revolutionary new dry vacuum solution for demanding deep vacuum chemical process needs. This automated system easily handles your most challenging vacuum applications while saving both time and expense. ChemStar Dry's integrated

multistage pumping mechanism is software driven and fully chemical resistant. They are all PTFE/Kalrez, oil-free, portable, and full chemical-resistant pump with deep vacuum capacity, they can eliminate cold-trapping, messy oil maintenance, and the threat of oil contamination to your sample. Handle even high chemical vapor loads for simple, efficient deep vacuum. ChemStar Dry excels where no dry vacuum pump has before – the first practical alternative to oil-seal rotary vane pumps.



Welch ChemStar Dry Vacuum Pump

Agilent Vacuum Pumps

Agilent IDP dry scroll pumps are oil-free, compact, quiet, high performance vacuum pumps. IDP pumps use a single-sided scroll design that allows for a straightforward 15-minute maintenance procedure with simple tools. Large pumping speeds and compact sizes are ideal for many applications in the research, analytical instrument, and laboratory markets.

IDP pumps are hermetic, with the motor and all bearings completely isolated from the vacuum path. This design extends the bearing life and provides clean, dry vacuum to the application. An inlet isolation valve is available as an integral option that adds no additional height to the pump. The IDP-10 uses an inverter driven motor, which provides uniform vacuum performance at all global frequencies and input voltages. Its uniform global performance and compact size make it an ideal choice for analytical instruments and industrial OEMs.



The **Agilent IDP-3** dry scroll pump is an innovative, compact, high-performance, oil-free vacuum pump that is suitable for a wide variety of applications. It is the smallest scroll pump made for general vacuum applications, which makes it easy to integrate into OEM systems, and it weighs only 21 pounds (9.5 kg). Yet with a pumping speed of 2.1 cfm (60 L/min) and a very low base pressure of 250 milli Torr, it is the highest-performing dry pump in its class.



The **Agilent IDP-7** dry scroll pump is a compact, high performance, oil-free vacuum pump, delivering large pumping speed capacity and simple maintenance. Capable of pump at a rate of 5.4 CFM.



The **Agilent IDP-15** dry scroll pump is designed for extremely quiet (<50dBA) and low vibration operation, delivering a peak pumping speed of 9 cfm at 60Hz. With a single-sided scroll design it offers fast, easy yearly maintenance and low cost of ownership. This pump is rated for 9 CFM.

Agilent pumps are warranted and serviced by Agilent vacuum technologies.

Harvest Right Scientific Freeze Dryers

For the first time ever, a high quality laboratory unit is available in a high capacity table top model at an affordable price. The perfect addition to any business or laboratory. Customize the freeze dry process to fit your specific needs.

Control the temperature and pressure of the product you are freeze drying. For use in commercial and scientific applications.



Features

- Operation allows for recipe customization (up to 10 Thermal Treatment and 12 Drying steps)
- Heater temperature is user adjustable. Freeze dry cycles occur at user defined vacuum pressure
- Easy to use. Just press start and the freeze dryer will beep when finished.
- Commercial grade vacuum pump
- Full-color 4.3" diagonal touch-screen display
- 4-liter ice condensing capacity
- Designed and made in the USA

HR-Standard-SCI Freeze Dryer with Vacuum Pump

Model	HR-Standard-SCI	HR-Large-SCI
<i>Electrical Requirements</i>	110V 60Hz 1-PH, 20A	220V 60Hz 1-PH, 20A
<i>Trays</i>	4 included @ 7.5 x 18 x 0.75" (W x L x H)	5 included @ 9 x 20.5 x 0.75" (W x L x H)
<i>Temperature Range</i>	-46 °C	
<i>Vacuum Level</i>	3 micron	
<i>Unit dimensions</i>	20 x 25 x 30" (W x D x H)	22.5 x 25.5 x 32.5"
<i>Vacuum Pump</i>	7 CFM JB	
<i>Certification</i>	CSA Certified	
<i>Warranty</i>	1 year limited warranty direct from Harvest Right	

Accessories

	 <p>Pancake coil</p>	 <p>Vertical coil</p>	 <p>SiO₂ crucible</p>	 <p>Crucible tongs</p>	 <p>Water chiller</p>	 <p>Graphite crucible</p>
	 <p>Alumina tube</p>	 <p>Quartz tube</p>	 <p>Quartz boat</p>	 <p>Flow meter</p>	 <p>Heating element</p>	 <p>Silicone o-rings</p>
	 <p>Alumina crucible</p>	 <p>Turbo pump</p>	 <p>Vacuum flange kit</p>	 <p>Thermal blocks</p>	 <p>Fuse</p>	 <p>Gloves</p>
	 <p>Zirconium oxide</p>	 <p>Tungsten carbide</p>	 <p>Nylon</p>	 <p>Teflon</p>	 <p>Agate</p>	 <p>Alumina</p>
	 <p>Stainless steel</p>	 <p>Jars for high energy ball mills</p>	 <p>Grinding balls</p>	 <p>Jar clamp</p>	 <p>Agate / Zirconia mortar & pestle</p>	 <p>Agate / Zirconia mortar & pestle</p>
	 <p>Vacuum pump filter</p>	 <p>Steel mobile cart</p>	 <p>Pan shelf</p>	 <p>Digital vacuum gauge</p>	 <p>Door gasket</p>	 <p>KF25 to 3/8" adapter</p>
	 <p>KF25 bellow</p>	 <p>Pump service kit</p>	 <p>Pump oil</p>	 <p>Silicon vacuum tubing</p>	 <p>Dry scroll pump</p>	 <p>Oil vane pump</p>

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