

# OILFREE SCROLL VACUUM PUMPS

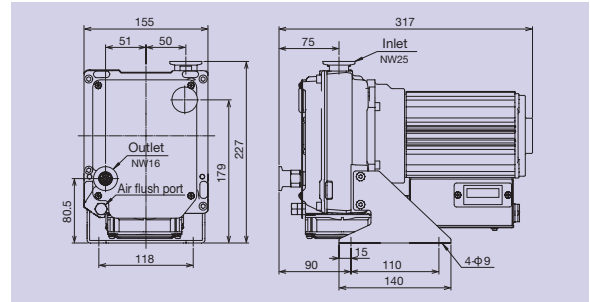


*The Air of Trust*

## ISP-50



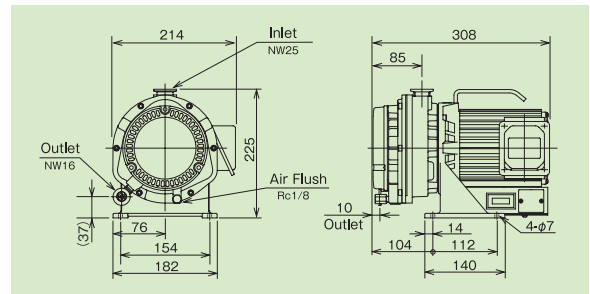
### ■ Dimensions



## ISP-90



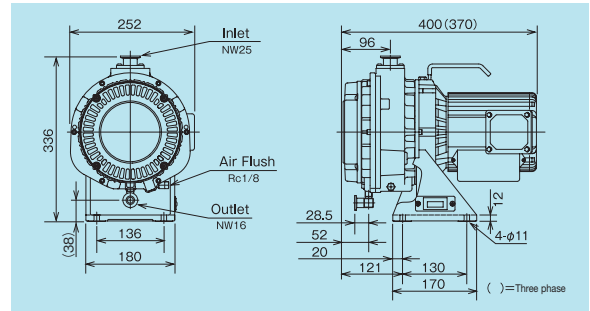
### ■ Dimensions



## ISP-250C



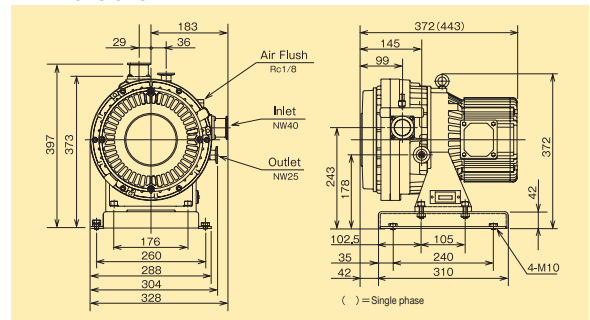
### ■ Dimensions



## ISP-500C



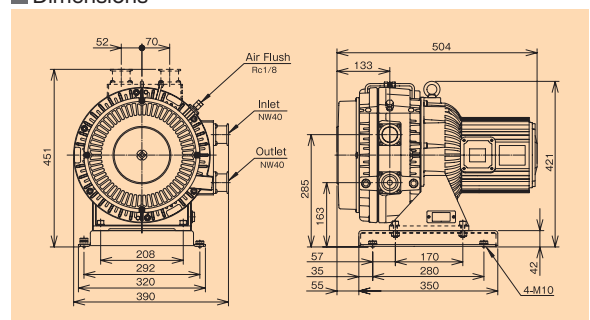
### ■ Dimensions



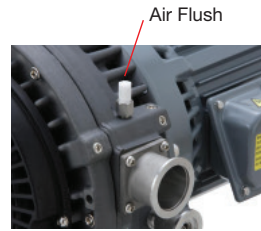
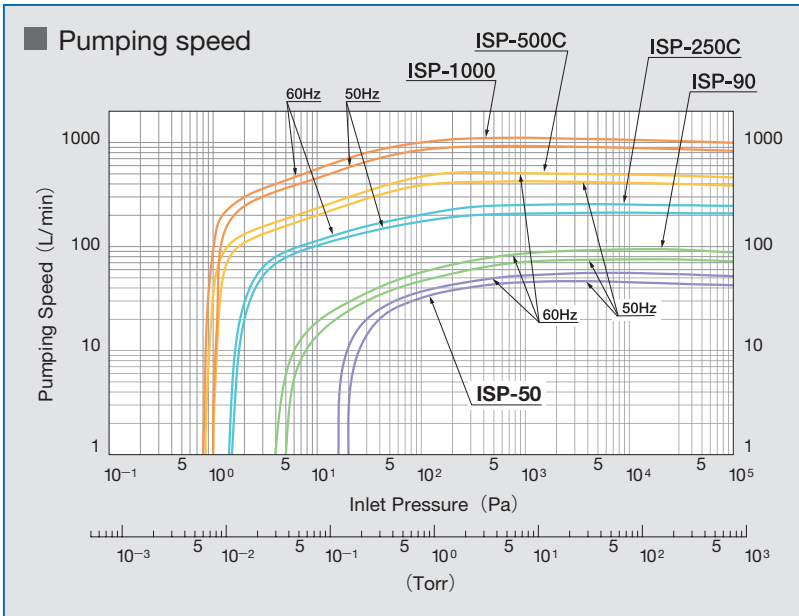
## ISP-1000E



### ■ Dimensions



# DRY SCROLL VACUUM PUMP



## Air Flush

**Purpose of Air Flush**  
Pumping of humid gas by vacuum pump can cause condensed moisture to remain in pump. This remaining moisture can cause failure to ultimate pressure or pump. Air Flush operation is necessary to remove remaining moisture inside. Air Flush operation also recovers ultimate pressure.

## How to select

ISP-500C-T-V

- 500= Pumping Speed of vacuum pump
- T= Three phase
- V= Vertical Inlet
- S= Single phase
- H= Horizontal Inlet

The model name of ISP-1000 is ISP-1000-TVA/THA, ISP-50 is change to ISP-50-SV1; single phase 100V, ISP-50-SV2; single phase 200V

Trade name		Oil-free Scroll Vacuum Pump				
Model		ISP-50	ISP-90	ISP-250C	ISP-500C	ISP-1000E
Pumping speed (50 Hz)	L/min	50	90	250	500	1000
	m <sup>3</sup> /h	3,0	5,4	15,0	30,0	60,0
Ultimate pressure (50Hz)	≦ Pa	20	5	1,6	1	1
	≦ mbar	2,0 × 10 <sup>-1</sup>	5,0 × 10 <sup>-2</sup>	1,6 × 10 <sup>-2</sup>	1,0 × 10 <sup>-2</sup>	1,0 × 10 <sup>-2</sup>
Motor power	kW	0,1	0,15	0,4	0,6	1,4
Voltage	Single phase	AC100V, AC200V, AC 230V		100,115,200,230 (with thermal protector)		-
	Three phase	-	-	200,208,230,380,450,460		
Noise level	dB(A)	48 (at air flush 57)	52 (at air flush 57)	58 (at air flush 66)	60 (at air flush 68)	67 (at air flush 74)
Weight	Single phase	12	14	25	44	-
	Three phase	-	-	23	38	56
Leak tightness	Pa • m/s	≦ 1 × 10 <sup>-7</sup>	≦ 1 × 10 <sup>-5</sup>			
Water Vapor Capacity	g/day	3 (at air flush)	5 (at air flush)	25 (at air flush)		
Air flush	L/min	4	9	10		
Inlet connection	NW	25			40	
Outlet connection	NW	16			25	40
Cooling system		air-cooled				
Ambient temperature	°C	5~40				10~40

● Ultimate pressure is measured as total pressure. Noise is measured in an anechoic room.

## Applications

### Synchrotron Facility

Evacuation units for beamlines in Synchrotron and Accelerator Facilities



### High Vacuum Pumping System

Roughing pump for Turbo Molecular Pump and Mechanical Booster Pump



- Sputtering equipment, Vacuum deposition equipment, Ion plating equipment
- Gas recovery devices
- Vacuum equipment
- Leak detectors
- Device handling system

- Surface modification, Electron beam process
- Vacuum furnace, Heat treatment furnace
- Laboratory use
- Vacuum packaging machine
- Others

## DVSL-100C



Single Phase Motor



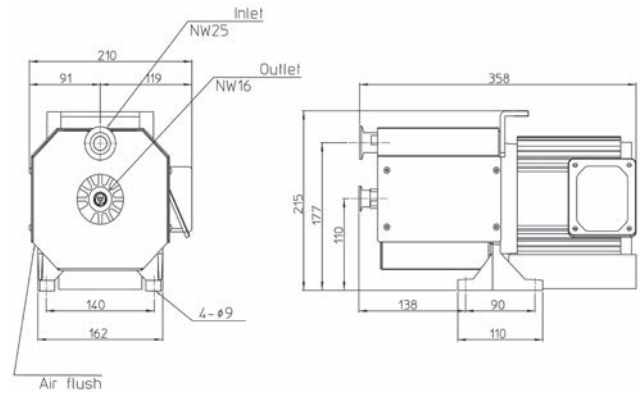
RoHS Conformity



CSA Conformity



CE Conformity



## DVSL-500E/501E



Three Phase Motor



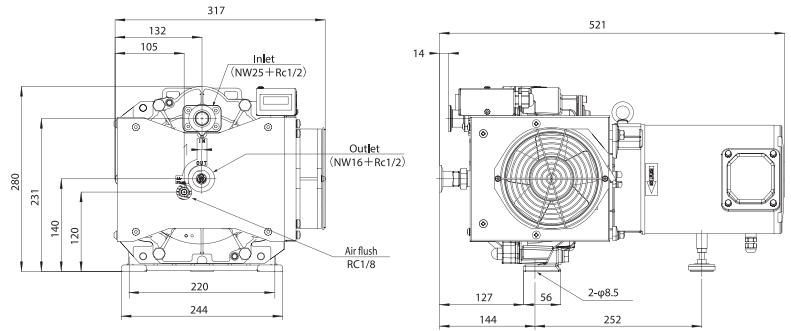
RoHS Conformity



CSA Conformity



CE Conformity



## DVSL-501E-HC



Three Phase Motor



RoHS Conformity



CE Conformity



Introducing the HC model with increased durability in DVSL series! It lasts three-times longer than the standard model, thanks to the specialized finishing which is applied to the sliding surface. It is highly recommended to end-users who process water vapor frequently.

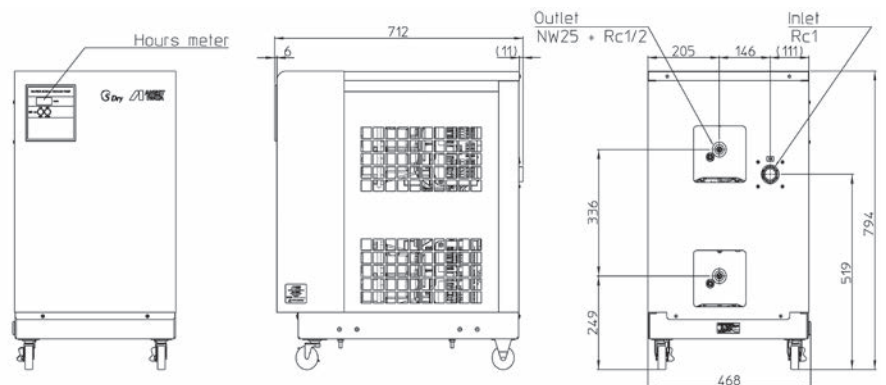
■ Product dimensions are the same as the DVSL-501C.

● Numbers and values are comparison to our current products and reference only. Results are varied depending upon application and condition of use.

## DVSL-1002E



Three Phase Motor

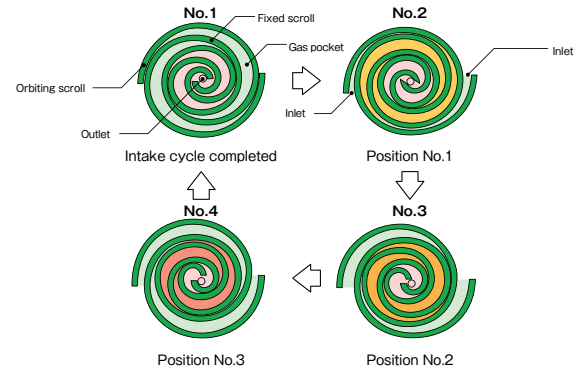
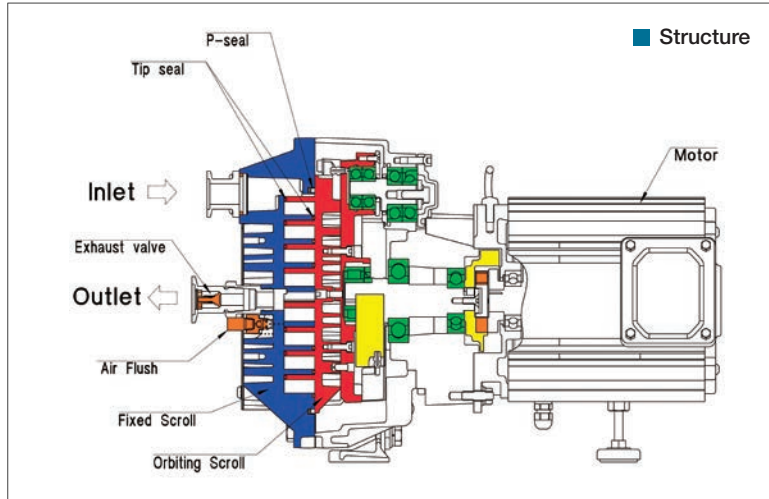


# DRY SCROLL VACUUM PUMP

Excellence in continuous operation between atmosphere and vacuum and in displacing water vapor.

## Application

- Vacuum Chuck
- Vacuum Transport
- Vacuum Forming
- Cryopump Regeneration
- Leak Test
- Roughing for TMP
- Deaerator
- Gas Substitution
- Vacuum Drying
- Vacuum Packing



## Principle of compression

As the orbiting scroll orbits as shown in the illustration from No.1 position to No.4 position, crescent shaped gas pockets are gradually reduced. At the last stage, compressed gas is exhausted through the center port.

## Air Flush

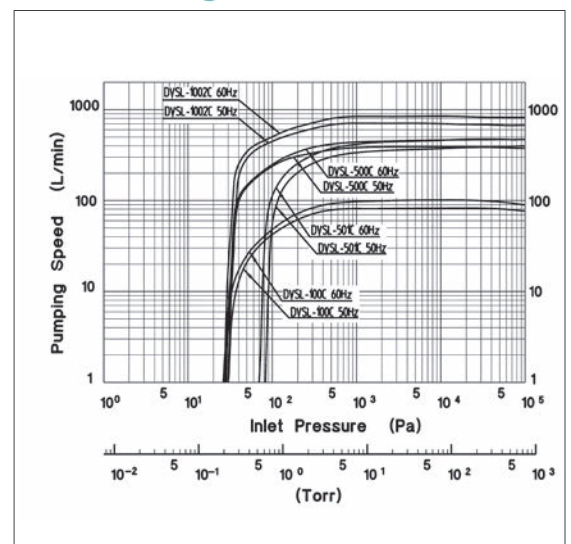
### Purpose of Air Flush

Pumping of humid gas by vacuum pump can cause condensed moisture to remain in pump. This remaining moisture can cause failure to ultimate pressure or pump. Air Flush operation is necessary to pump remaining moisture inside the pump. Air Flush operation does not only pump remaining moisture but also recovers ultimate pressure.

## Specifications

Trade name		Oil-free Scroll Vacuum Pump			
Model		DVSL-100C	DVSL-500E	DVSL-501E	DVSL-1002E
Pumping speed (50 Hz)	L/min	100	430	430	845
	m <sup>3</sup> /h	6,0	25,8	25,8	50,7
Ultimate pressure (50Hz)	≦ Pa	50	30	100	30
	≦ mbar	$5,0 \times 10^{-1}$	$3,0 \times 10^{-1}$	$1,0 \times 10^{-0}$	$3,0 \times 10^{-1}$
Motor power	kW	0,3	0,9	0,9	2,4
Voltage	V	Single phase 100,115,200,230	-	-	-
		Three-phase	200,208,230,380,400,415,460		200,220
Noise level	dB(A)	≦ 62 (at air flush 65)	≦ 64 (at air flush 69)		≦ 69 (at air flush 74)
Weight	Kg	Single phase 15	-	-	-
		Three-phase	-	36	118
Water vapor	g/day	100 (at air flush)	250 (at air flush)		500 (at air flush)
Air flush	L/min	5 (at air flush)	10 (at air flush)		20 (at air flush)
Inlet connection	NW	NW25 (with Rc 3/8)	NW25 (with Rc 1/2)		Rc 1
Outlet connection	NW	NW16 (with Exhaust valve)			NW25 (with Exhaust valve)
Cooling system		air-cooled			
Ambient temperature	°C	5-40			
Back-up material		Fluorine rubber	Silicon rubber	Fluorine rubber	Silicon rubber

## Pumping speed



• Pumping speed of DVSL-501C-HC is the same as the DVSL-501C.

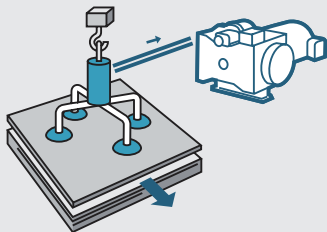
# VACUUM EQUIPMENT APPLICATIONS

Vacuum equipment of Anest Iwata are utilized in various applications.

01

## Pick and Place [DVSL/GVS]

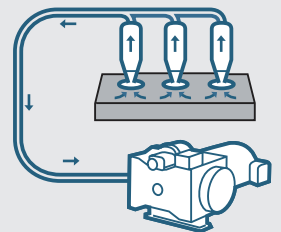
Conveying workpiece and utilizing a pressure difference with suction pad.



02

## Vacuum Chuck [DVSL/GVS]

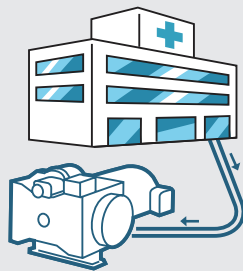
Chucking a workpiece by pressure difference. Suitable for distorted surface, soft, thin film and small objects.



03

## Medical [ISP/DVSL/GVS]

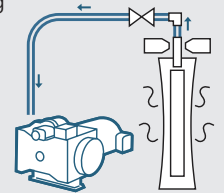
Used for various applications. Cancer therapy system, Sterilization and aspirator in the hospital etc.



04

## Vacuum drying [DVSL/GVS]

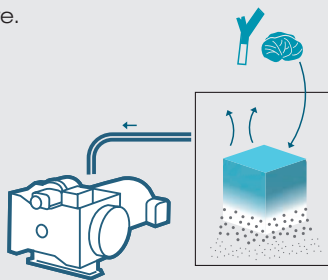
Removing unnecessary components from the work (workpiece) using vacuum pressure. It is used for delicate material against heating and complex shape. For example ... Removing washing water from mechanical parts, Removing absorbed water molecular from resin pellets, and centrifugal system for chemicals etc.



05

## Vacuum-freeze drying [DVSL/GVS]

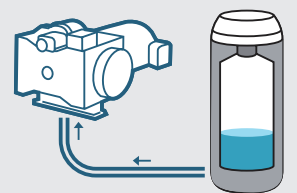
Sublimating frozen work under vacuum pressure. For example ... instant coffee, dry food, etc.



06

## Vacuum heat insulation [DVSL/GVS]

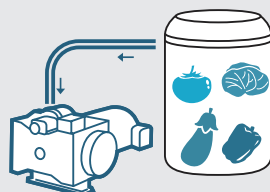
Vacuum is suitable for heat-insulation as it doesn't cause heat conduction. For example ... Vacuum heat insulation sheet, thermos etc.



07

## Vacuum impregnation [DVSL/GVS]

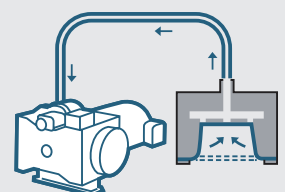
Penetrating the seasoning to groceries using a vacuum pressure. The mechanical components are utilized to infiltrate the adhesive.



08

## Vacuum Forming [DVSL/GVS]

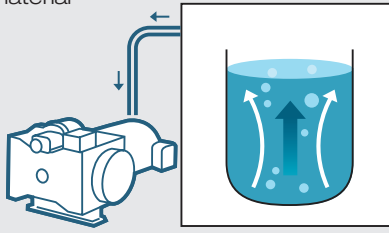
Using a vacuum pressure to the molding resin materials.



09

## Degassin [DVSL/GVS]

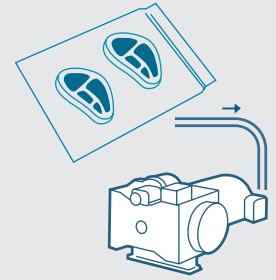
Contained gases are sucked from the material using a vacuum pressure.



10

## Vacuum packaging [DVSL/GVS]

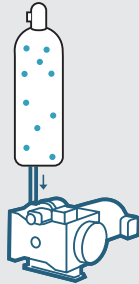
Sucking the air from the sealed bag to prevent deterioration of the food and workpiece.



11

## Gas recovery devices [ISP/DVSL/GVS]

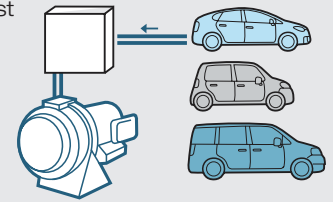
Make it easier to fill the gas to the container which is under vacuum pressure. It is also used to recover the gases, which are the rare gas and the effective gas to the environment (ISP series).



12

## Exhaust gas inspection [ISP]

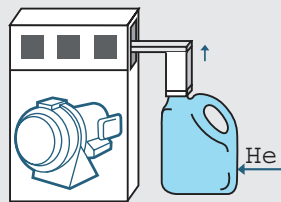
It is used for the inspection of particulate contained in the exhaust gas of automobiles.



13

## Leak detectors [ISP/DVSL/GVS]

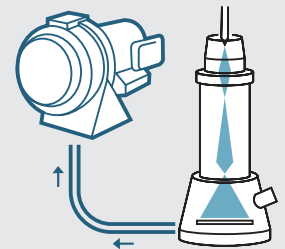
Checking the leakage of containers by pressure change during the certain time under the vacuum pressure. Leak tight pump is needed for Helium leak tester to prevent the influence of background (ISP series).



14

## Electron microscope [ISP]

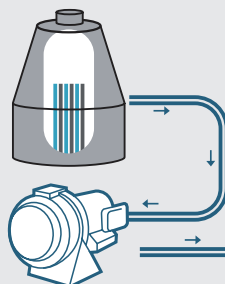
The vacuum pressure is needed in the chamber when the sample is scanned by shot electron beam.



15

## Vacuum heat treatment [ISP]

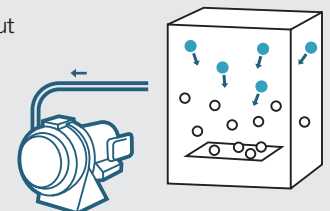
Preventing the oxidation and removing absorbed gas for heat treatment under the vacuum pressure.



16

## Sputterin [ISP]

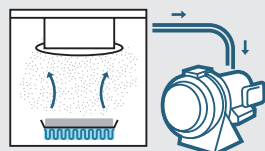
Deposit metal on a surface by using fast ions to eject particles out of it from a target.



17

## Evapolution deposition [ISP]

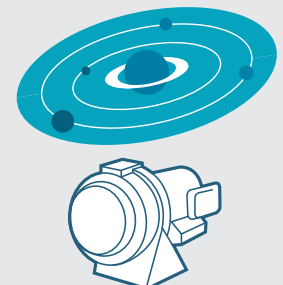
Deposit metal on a surface by heating a target in vacuum chamber.



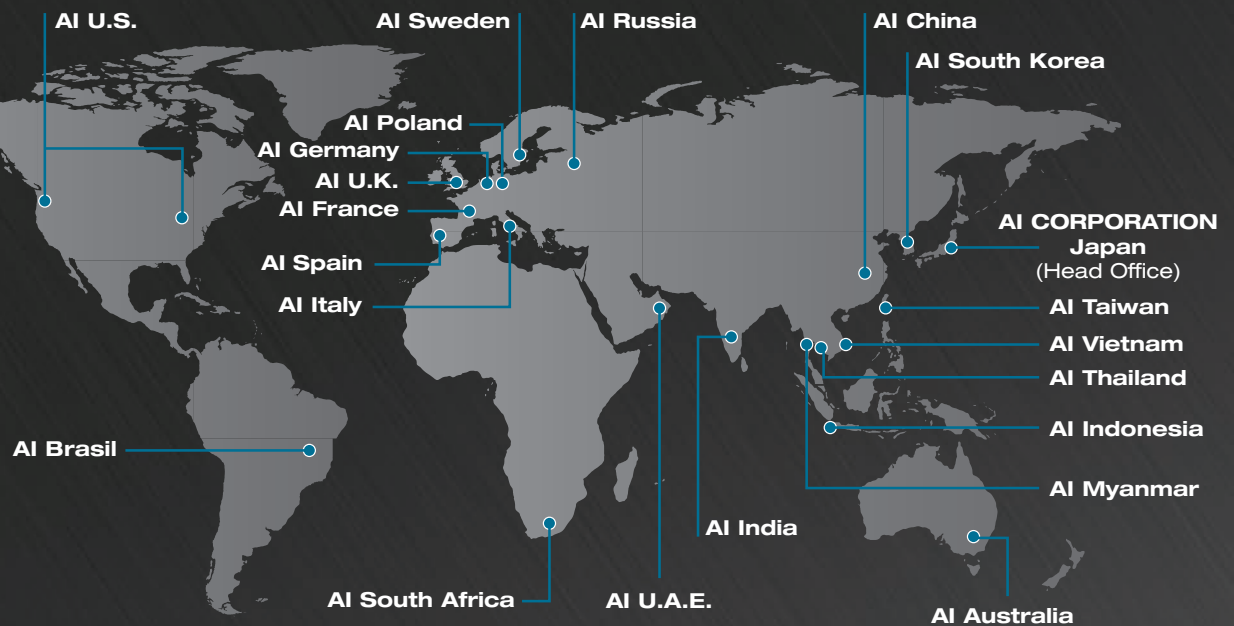
18

## Accelerator • Synchrotron [ISP]

By creating clean vacuum condition, we are supporting world's cutting-edge technologies such as accelerator and particle physics.



# ANEST IWATA GLOBAL NETWORK



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