

VACUUM PUMPS CATALOG



The Air of Trust

ANEST IWATA



Yokohama, Japan



Bad Wimpfen, Germany

Location of the company in Europe	Bad Wimpfen, Germany
Company headquarters	Yokohama, Japan
Signing of the company contract	May 1, 1926
Initial public offering	Tokyo Stock Exchange in 1973
Capital	approx. 25,000,000 EUR
Accounting period	April 1 - March, 31
Number of employees	approx. 1,800 (more than 60 % outside Japan)
Main business	<ul style="list-style-type: none">• Air compressors and associated products• Spray painting equipment• Vacuum pumps and associated products• Equipment for the application of liquids• Associated products and their installation

CONTENTS

Oil-free scroll vacuum pumps

Dry running scroll vacuum pumps



see page 4 – 9

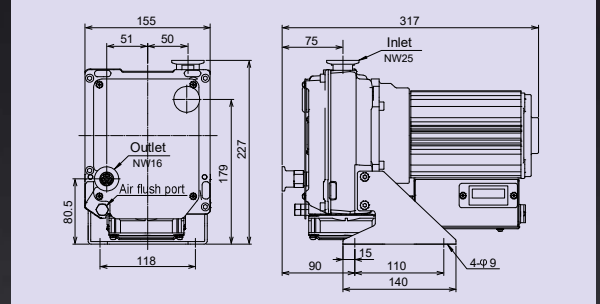
OIL-FREE SCROLL VACUUM PUMPS



ISP-50



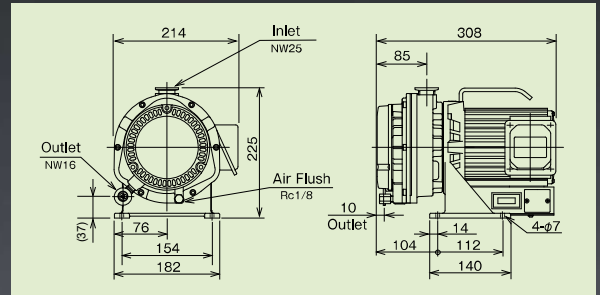
■ dimensions



ISP-90



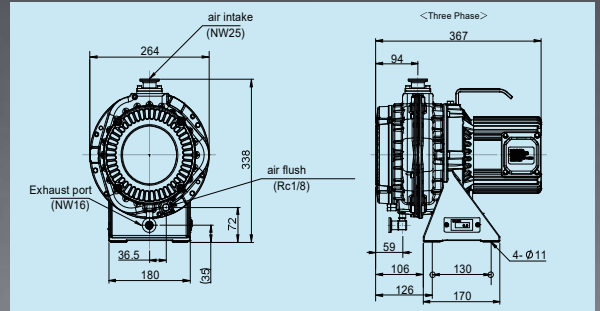
■ dimensions



ISP-250E



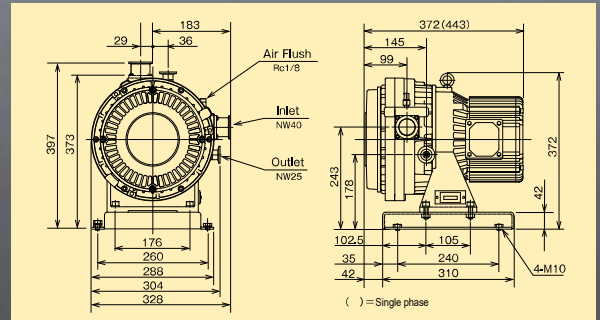
■ dimensions



ISP-500c



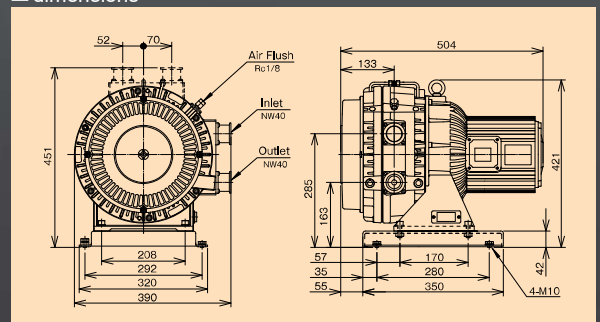
■ dimensions



ISP-1000E

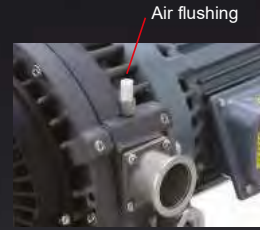
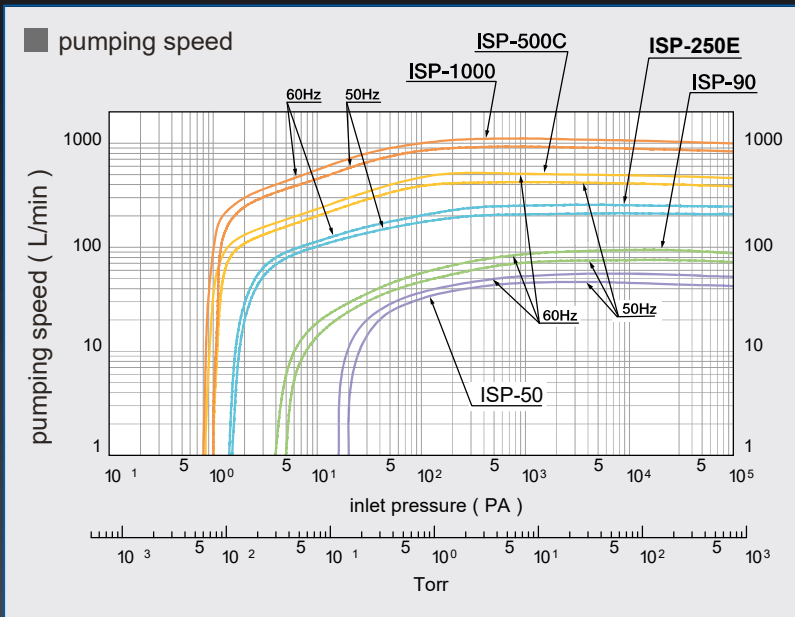
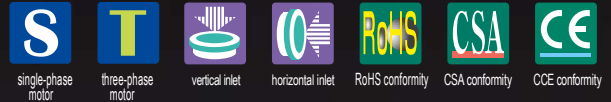


■ dimensions



Dimensions can be modified without prior notice if required because of design changes.

* RoHS stands for Restriction of Hazardous Substances.
 RoHS is also known as directive 2002/95/EC.
 * There is another NRTL Nationally Recognized Testing Laboratory that issues certifications found in the U.S.
 It is called CSA which originally stood for Canadian Standards Association.
 * The letters "CE" are the abbreviation of the French phrase "Conformité Européenne" which literally means "European Conformity".



Air flushing

Purpose of the air flushing:
 Pumping humid gas through the vacuum pump can cause condensed moisture to remain in the pump.
 This remaining moisture can cause a failure of the final pressure or pump.
 The air flushing process is necessary to pump out the remaining moisture.
 The air flushing process also restores the final pressure.

How do you choose?

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 changed to ISP-50-SV1; single-phase 100 V, ISP-50-SV2; single phase 200 V.

		oil-free scroll vacuum pumps				
		ISP-50	ISP-90	ISP-250E	ISP-500C	ISP-1000E
pumping speed (50 Hz)	L/min	50	90	250	500	1,000
	m³/h	3.0	5.4	15.0	30.0	60.0
final pressure (50 Hz)		20	5	1,6	1	1
		2.0 × 10 ⁻¹	5.0 × 10 ⁻²	1.6 × 10 ⁻²	1.0 × 10 ⁻²	1.0 × 10 ⁻²
motor power	kW	0.1	0.15	0.4	0.6	1.4
voltage	single phase	AC 100 V, AC 200 V, AC 230 V				100, 115, 200, 230 (with temperature protection)
	three-phase	-	-	200,208,230,380,450,460		
noise level	dB (A)	48 (57 with air flushing)	52 (57 with air flushing)	58 (66 with air flushing)	60 (68 with air flushing)	67 (74 with air flushing)
weight	single phase	12	14	25	44	-
	three-phase	-	-	23	38	68
leak tightness	Pa · m³/S	≤ 1 x 10 ⁻⁷		≤ 1 x 10 ⁻⁵		
water vapor capacity	g/Tag	3 (with air flushing)	5 (with air flushing)	25 (with air flushing)		
air flushing	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

• The final pressure is measured as total pressure. Noise is measured in an anechoic chamber.
 Dimensions can be modified without prior notice if required because of design changes.

applications

Synchrotron facilities

Transport units for beam pipes in synchrotron and accelerator facilities



High vacuum pumping systems

Backing pump for turbo molecular pump and mechanical booster pump



- sputtering equipment, vacuum separation systems, ion plating facilities
- gas recovery devices
- vacuum equipment
- leak detectors
- equipment handling systems

- surface modifications, electron beam processes
- vacuum furnaces, heat treatment furnaces
- use in laboratories
- vacuum packaging machines
- and more

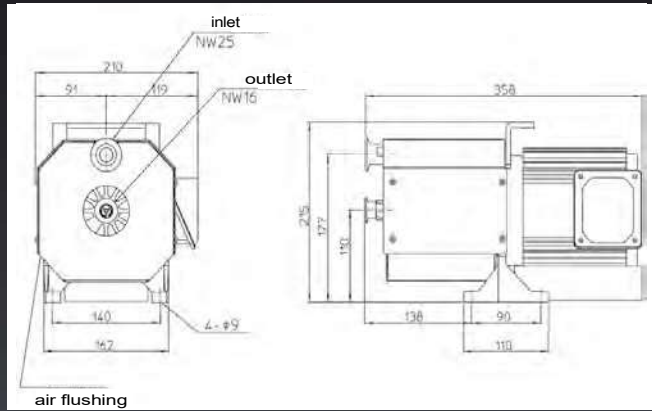
DRY SCROLL VACUUM PUMPS



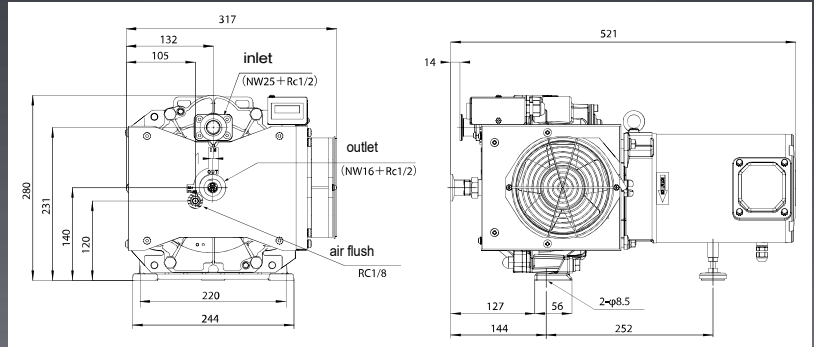
* RoHS stands for Restriction of Hazardous Substances.
RoHS is also known as directive 2002/95/EC.
* There is another NRTL Nationally Recognized Testing Laboratory that issues certifications found in the U.S.
It is called CSA which originally stood for Canadian Standards Association.
* The letters "CE" are the abbreviation of the French phrase "Conformité Européenne" which literally means "European Conformity".



DVSL-100C



DVSL-500E/501E



DVSL-501E-HC

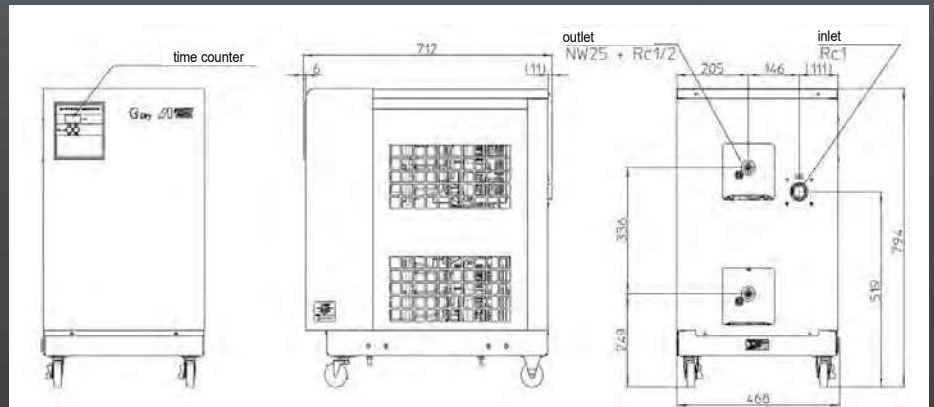


We have introduced the HC model with a longer durability in the DVSL series.

Thanks to the special finishing of the sliding surfaces, its durability is three times longer than the standard model. We particularly recommend this model to end users who frequently work with steam.

- The dimensions of the product are the same as those of DVSL-501C.
- The figures and values represent comparisons with our current products and are for reference purposes only. The results vary depending on the application and conditions of use.

DVSL-1002E



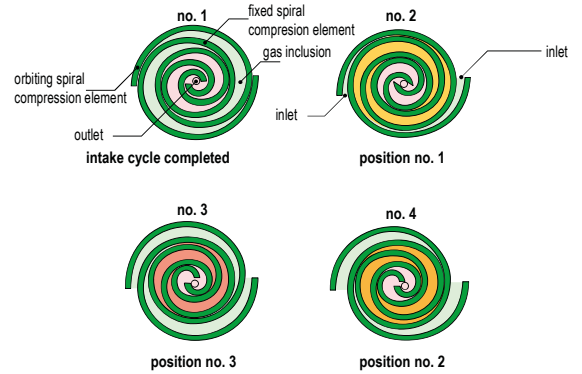
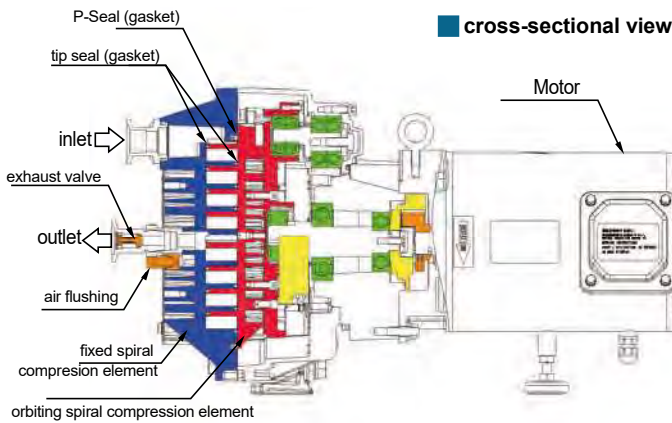
Dimensions can be modified without prior notice if required because of design changes.

OIL-FREE SCROLL VACUUM PUMPS

Excellent in continuous operation between atmosphere and vacuum and in the displacement of water vapor.

Application

- vacuum clamping device
- vacuum transportation
- vacuum forming
- cryogenic pump regeneration
- leak test
- pre-vacuum for TMP
- degasser
- exchange of gases
- vacuum drying
- vacuum packaging



Principle of compression

As the orbiting spiral compression element moves from position 1 to position 4, as shown in the figure, the size of the crescent-shaped compression chambers is gradually reduced. This causes the air contained in them to compress. This air is then discharged through the central air outlet.

Air flushing

Purpose of air flushing

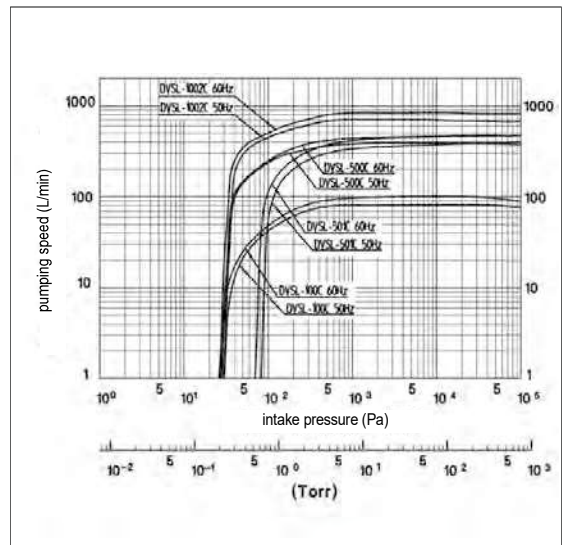
Pumping humid gas through the vacuum pump can cause condensed moisture to remain in the pump. This remaining moisture can cause the final pressure or pump to fail. The air flushing process is necessary to pump the remaining moisture out of the pump. The air flushing process not only pumps the remaining moisture out of the pump, but also restores the final pressure.

specifications

trade name		oil-free scroll vacuum pumps			
model		DVSL-100C	DVSL-500E	DVSL-501E	DVSL-1002E
pumping speed (50 Hz)	L/min	100	430	430	845
	m ³ /h	6.0	25.8	25.8	50.7
final pressure (50 Hz)		50	30	100	30
		5.0 × 10 ⁻¹	3.0 × 10 ⁻¹	1.0 × 10 ⁻⁰	3.0 × 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)				
weight	Kg				
	single phase	15	-	-	-
	three-phase	-	36	-	118
water vapor	g/Tag	100 (with air flushing)	250 (with air flushing)	500 (with air flushing)	
air flushing	L/min	5 (with air flushing)	10 (with air flushing)	air	
inlet connection	NW	NW 25 (mit Rc 3/8)	NW 25 (mit Rc 1/2)	Rc 1	
outlet connection	NW	NW 16 (with outlet valve)	NW 25 (with outlet valve)		
cooling system		air-cooled			
ambient temperature	°C	5 ~ 40			
protection material		flur rubber	silicone rubber	flur rubber	silicone rubber

Dimensions can be modified without prior notice if required because of design changes.

suction volume flow rate



• the pumping speed of DVSL-501C-HC is identical to that of DVSL-501C.

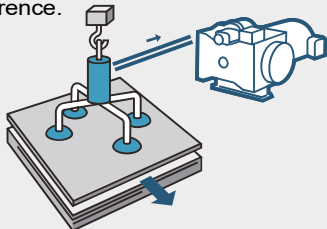
APPLICATIONS OF VACUUM SYSTEMS

ANEST IWATA vacuum pumps are used in various applications

01

Pick and place [DVSL]

A workpiece is lifted, conveyed and placed with a suction cup due to the pressure difference.

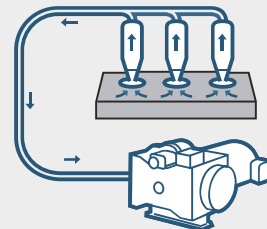


02

Vacuum clamping device [DVSL]

A workpiece is clamped using the pressure difference.

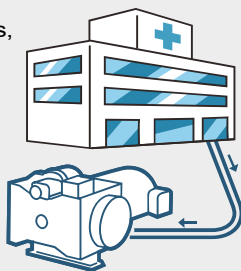
This application is suitable for deformed surfaces as well as soft, thin films and small objects.



03

Medicine [ISP/DVSL]

There are numerous applications in the medical field, such as cancer therapy systems, sterilization and suction.



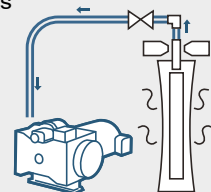
04

Vacuum drying [DVSL]

Dirt particles on a workpiece are removed by vacuum pressure.

This process is used for heat-sensitive materials with complex shapes, such as the removal of washing water from mechanical parts and the molecular removal of absorbed water from resin pellets.

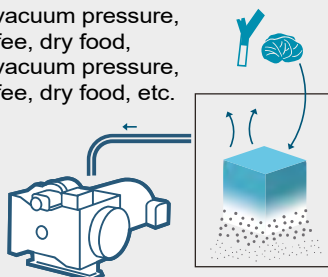
Among other things vacuum drying is also used in a centrifugal system for chemicals.



05

Vacuum freeze drying [DVSL]

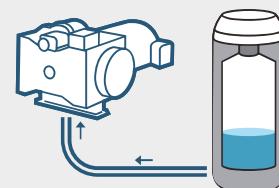
This application is used for sublimated, frozen products under vacuum pressure, for example instant coffee, dry food, etc. frozen parts under vacuum pressure, for example instant coffee, dry food, etc.



06

Vacuum heat insulation [DVSL]

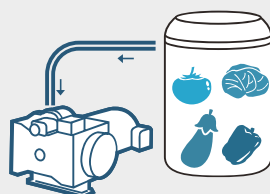
A vacuum is suitable for thermal insulation because it does not conduct heat, for example vacuum heat insulation foil, thermal vessels (Dewar vessels).



07

Vacuum impregnation [DVSL]

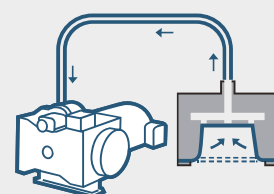
Using vacuum pressure, flavor enhancers can penetrate into food.



08

Vacuum forming [DVSL]

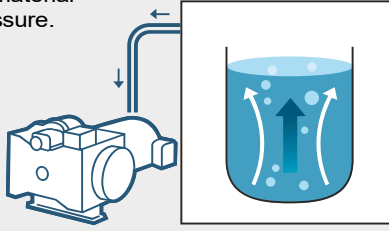
Vacuum pressure is used for molding resin materials.



09

Degassing [DVSL]

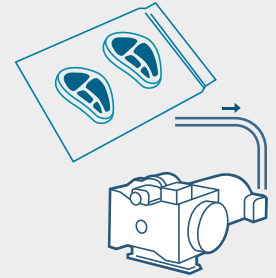
Contained gases are sucked out of the material using vacuum pressure.



10

Vacuum packaging [DVSL]

By extracting the air from the sealed pouch food is preserved longer.

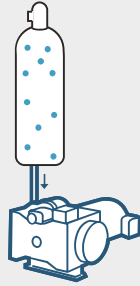


11

Gas recovery devices [ISP/DVSL]

They facilitate the filling of the gas into the container, which is under vacuum pressure.

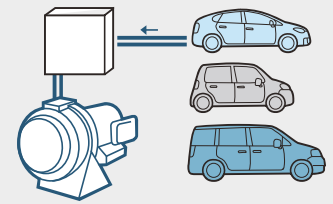
They are also used to recover gases, such as noble gases and the process gas in the environment. (ISP).



12

Exhaust emissions test [ISP]

This procedure is used for the inspection of particles in car exhaust fumes.



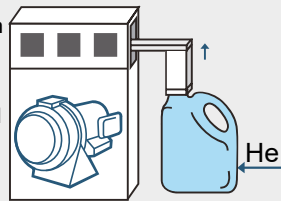
13

Leak detectors [ISP/DVSL]

Devices are checked for leaks.

This is done by changing pressure during a certain period of time under vacuum pressure.

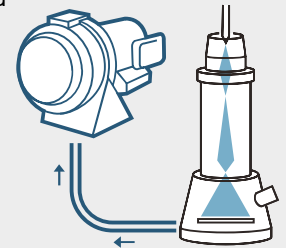
For helium leak testers, a leak-tight pump is required to prevent environmental influences.



14

Electron microscope [ISP]

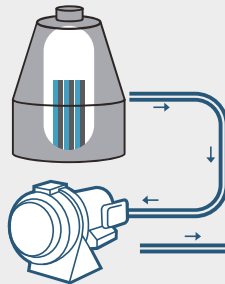
Vacuum pressure is required in the chamber when the sample is scanned by an electron beam.



15

Vacuum heat treatment [ISP]

This prevents oxidation and removes absorbed gas for heat treatment under vacuum pressure.

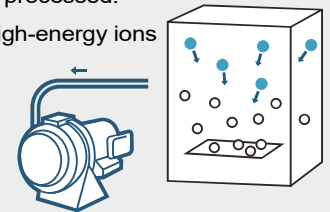


16

Sputtering [ISP]

During this process metal is deposited on the solid object to be processed.

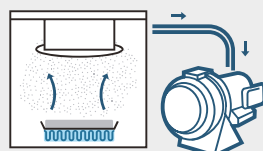
By bombardment with high-energy ions (mainly noble gas ions), atoms are released from the object, which then change into the gas phase.



17

Vapor phase deposition [ISP]

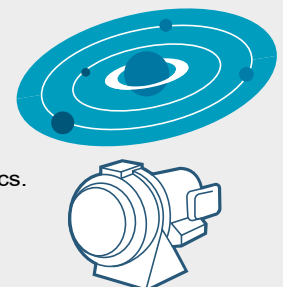
During this process metal is deposited on the surface of the part to be processed; the part is heated in the vacuum chamber.



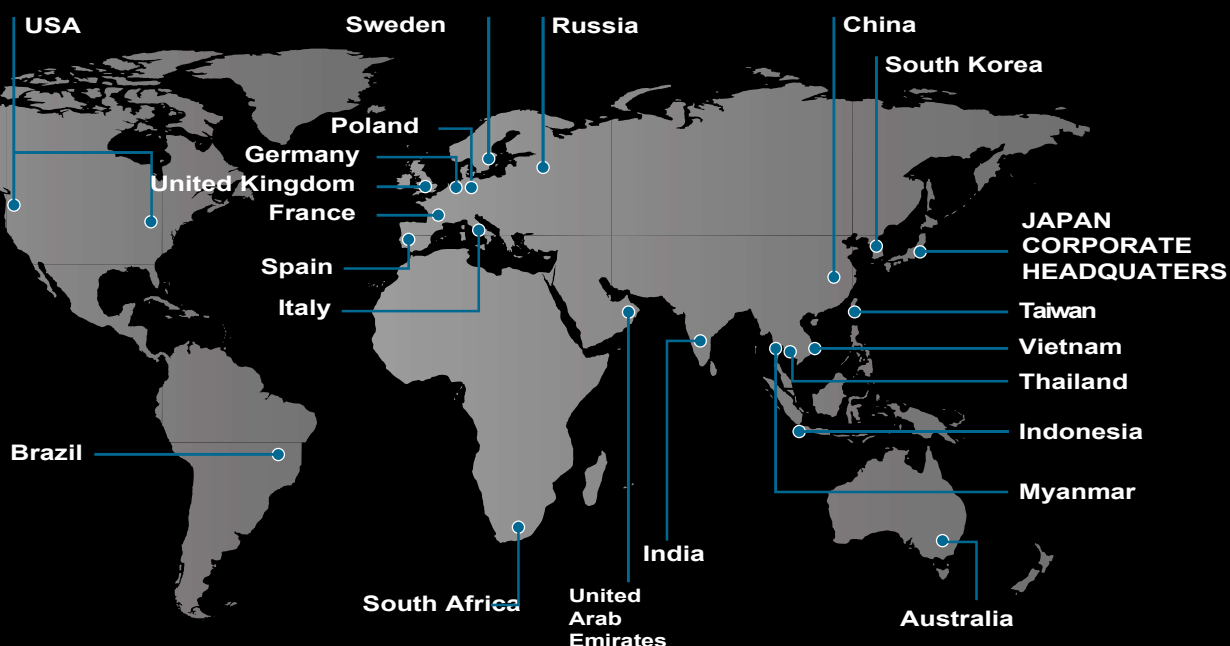
18

Particle accelerators • synchrotrons [ISP]

By creating a clean state of vacuum, we are part of the world's state-of-the-art technologies such as accelerator and particle physics.



ANEST IWATA GLOBAL NETWORK



ANEST IWATA EUROPE GmbH

Am Stahlbügel 2 - D-74206 Bad Wimpfen - Germany
Tel. +49 (0) 7063 933 670 - Fax +49 (0) 7063 933 6719
Website: <https://www.anest-iwataat.com/>
E-mail: info@anest-iwataat.com

Headquarters in Japan:

ANEST IWATA Corporation

3176, Shinyoshida-cho, Kohoku-ku,
Yokohama 223-8501, Japan
aijhonbu@anest-iwata.co.jp

Distributed by:



The data and information given in this catalog are not binding.
The manufacturer reserves the right to make changes without prior notice.
Published by: ANEST IWATA EUROPE GmbH, April 2021