



Proudly offering the Anest Iwata Dry Scroll Pumps



The Anest Iwata oil-free ISP scroll vacuum pump is "The Original."

Anest Iwata was the first manufacturer to bring scroll vacuum pumps to the vacuum market. With over 16 years of field experience and more performance hours than all its competitors combined, the ISP series scroll vacuum pumps are the premium choice for clean pumping technology. Anest Iwata continues to be the industry leader in Scroll Pump Technology, ensuring the problem-free operation that you've come to expect with Anest Iwata.



THE ORIGINAL

Features

- Oil-Free
- Improved Sealing Design
- Improved Water handling
- Patented Air-Purge Circuit
- Latest "C" Design Revision
- Air Cooled
- Integrated Hour Meter

Applications

- Sputtering Systems
- Vacuum Coating Systems
- Helium Leak Detection Systems
- Vacuum Furnace Systems
- Laboratory Applications
- Electron Beam Processes
- Space simulation
- SEM (Scanning Electron Microscope)

Technical Comparison

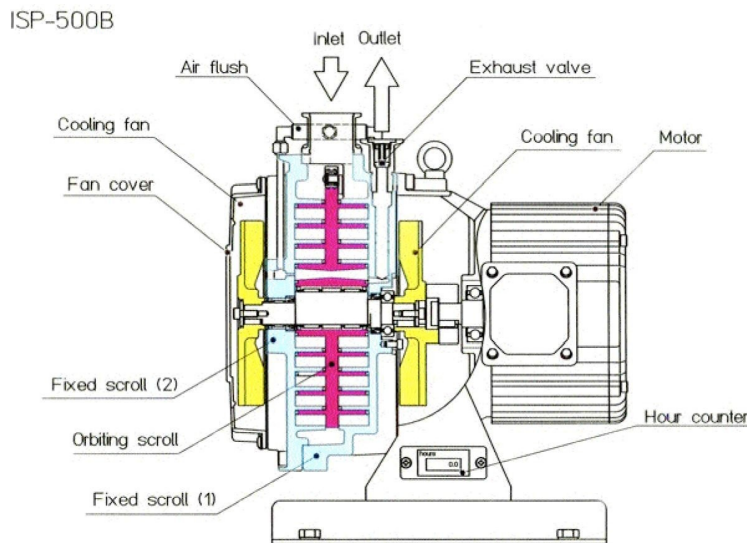
Anest Iwata ISP and Varian PTS Scroll Pumps



Anest Iwata is the original manufacturer of oil-free scroll vacuum pumps and holds key patents on their inherently balanced design. In recent years competitors have tried to copy the Anest Iwata design with “look a likes” but because of the patent constraints these “look a like” scroll pump designs have significant problems such as premature tip seal wear, decreased pumping performance and particulate contamination. These problems result from load imbalances that exist in the “look alike” designs.

There are two key areas that must be considered when comparing “The Original” Anest Iwata ISP design and the Varian PTS design.

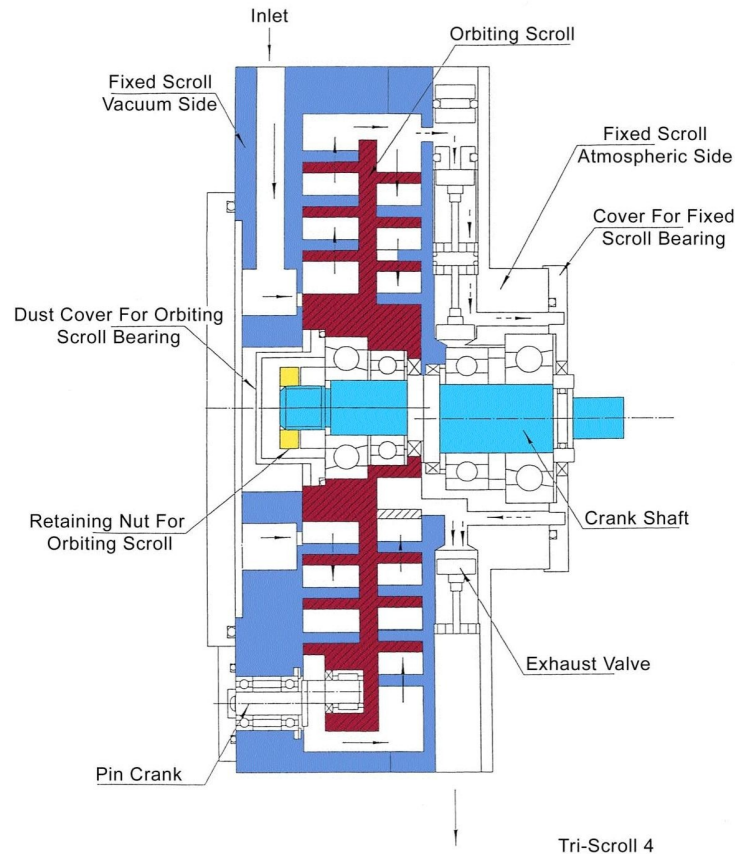
1. Tip Seal Performance:



- Anest Iwata uses a parallel dual-scroll design that balances the compression on both sides of the orbiting scroll. The equal and opposite forces (gas compression) on both sides of the scroll cancel each other and allow the scroll to “float” on a crankshaft roller bearing with virtually no side or torque loads generated during pump operation. This means that the tip

seals have uniform pressure on all surfaces, which results in uniform wear and long life. Anest Iwata recommends that the tip seals be changed every 16,000 hours.

- The TriScroll design has gas enter at the left (expanding, low pressure) side of the scroll and then flows the gas to the right (compression, high pressure) side of the scroll through to the exhaust. In this expansion and compression design there are constant loads forcing the orbiting scroll toward the expansion side. This force to the expansion side causes excessive wear on the tip seals and creates significant amounts of particles which can back stream into fore line valve, gauges, turbo pumps and eventually into the chamber. Note: Varian recommends using an inlet screen to prevent partial back streaming; however an inlet screen will reduce the effective pumping speed of the pump. Varian recommends disconnecting the inlet flange and periodically (monthly or more frequently depending on the severity of



the particle problem) blowing out the pump with compressed air. The tip seals will wear to the point that the pump no longer functions and must be rebuilt. TriScrolls typically have their tip seals and bearings replaced 2 to 3 times more frequently than the Anest Iwata ISP design.

2. Bearing Performance:

- The Anest Iwata design is highly symmetrical and through excellent engineering practice provides balanced loads and minimal vibration. Gas is compressed to the center from the outer radius of the scroll mechanism, which provides a higher gas temperature at the center (crankshaft) than at the inlet. The Anest Iwata design uses fans that are attached to the crankshaft on either side of the scroll housing to draw cooling air across the scroll surface. This provides for uniform cooling of the scroll sections and the bearings, providing for longer bearing life. Note: Anest Iwata recommends that the bearings be changed after 16,000 hours of operation.
- The TriScroll uses a cantilevered crankshaft design that is vulnerable to considerably more crankshaft flex and vibration than the Anest Iwata design. The flex, vibration and additional torque loads mentioned above significantly reduce the bearing life. The TriScroll fan design does not provide for uniform cooling to the center of the pump, which elevates the bearing operating temperature, resulting in thermal stresses and accelerated bearing wear.



Clean Green
Technology!



ISP-90

AIR COOLED, OIL-FREE PERFORMANCE
CE, CSA, & RoHS Compliant



THE ORIGINAL

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The latest revision design improvements increase shaft and bearing sealing performance as well as increase the water handling capabilities of the ISP series scroll vacuum pumps.

FEATURES

- Oil-Free
- Improved Sealing Design
- Improved Water handling
- Patented Air-Purge Circuit
- Latest Design Revision
- Air Cooled
- Integrated Hour Meter
- Convenient On/Off switch

APPLICATIONS

- Sputtering Systems
- Vacuum Coating Systems
- Helium Leak Detection Systems
- Vacuum Furnace Systems
- Laboratory Applications
- Electron Beam Processes
- SEM (Scanning Electron Microscope)

ISP-90

ACCESSORIES

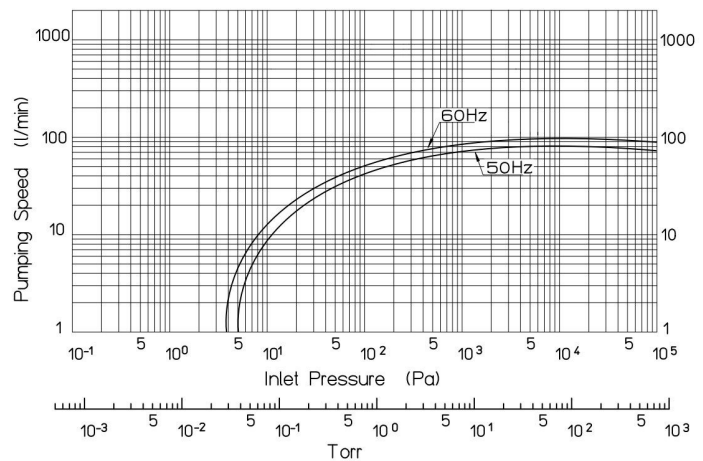
- Power Cord (installed) 14/3, 9' long
P/N: SV120PSI
- Isolation Feet - set of four
P/N: SV90ISF
- KF 16 Exhaust Muffler
P/N: SV-KF 16MWRV
- KF 25 Inlet Poral Filter
P/N: SV-KF 25PF
- KF 16 Blank Flange(Al)
P/N: SV-KF 16 BLNK
- KF 16 Stainless Centering Ring
P/N: SV-KF 16 SSCR
- KF 16 Clamping Ring (Al)
P/N: SV-KF 16 CLMPR
- KF 25 Blank Flange (Al)
P/N: SV-KF 25 BLNK
- KF 25 Stainless Centering Ring
P/N: SV-KF 25 SSCR
- KF 25 Clamping Ring (Al)
P/N: SV-KF 25 CLMPR

SPECIFICATIONS

Displacement	3.8 cfm (108 lpm) @ 60 Hz 3.2 cfm (90 lpm) @ 50 Hz
Ultimate Pressure	38 mTorr (5 Pa)
Motor Power Rating	0.15 kW/0.2 hp
Voltage – 1 phase	(50/60Hz) 100/115/200/230V
Noise Level (with air flush)	52 dB A
Weight	29 lbs. (13 kg)
Dimensions	Inches: 12.13 L x 8.4 W x 8.86 H mm: 308 L x 214 W x 225 H
Inlet Connection	NW 25
Outlet Connection	NW 16
Water Handling	25 g/day



Pumping Speed Curve ISP 90





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ISP-250C

AIR COOLED, OIL-FREE PERFORMANCE
CE, CSA, & RoHS Compliant



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The latest revision "C" design improvements include the integration of the air flush into the aluminum housing as well as a new exhaust valve design.

Features

- Oil-Free
- Improved Sealing Design
- Improved Water handling
- Patented Air-Purge Circuit
- Latest "C" Design Revision
- Air Cooled
- Integrated Hour Meter

Applications

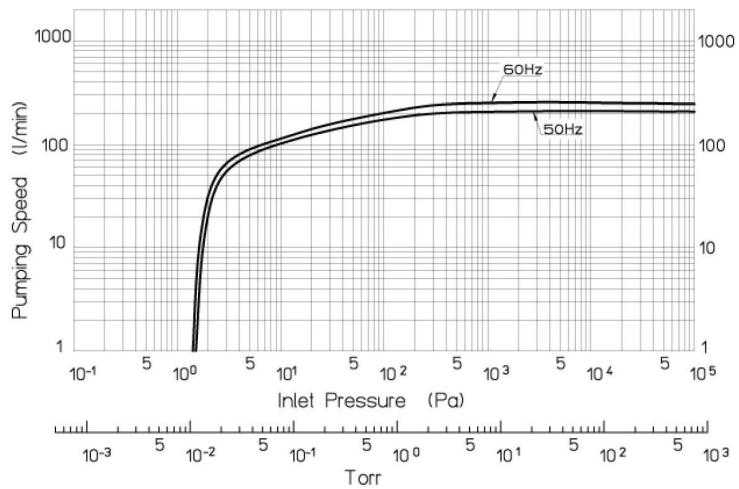
- Sputtering Systems
- Vacuum Coating Systems
- Helium Leak Detection Systems
- Vacuum Furnace Systems
- Laboratory Applications
- Electron Beam Processes
- Space simulation
- SEM (Scanning Electron Microscope)

ISP-250C

ACCESSORIES	SPECIFICATIONS	
Power Cord (installed) 14/3, 9' long P/N: SV120PSI	Displacement	10.6 cfm (300 lpm) @ 60 Hz 8.8 cfm (250 lpm) @ 50 Hz
Isolation Feet - set of four P/N: SV250ISF	Ultimate Pressure	12 mTorr (1.6 Pa)
KF 16 Exhaust Muffler P/N: SV-KF 16MWRV	Motor Power Rating	0.4kW/0.5 hp
KF 25 Inlet Poral Filter P/N: SV-KF 25PF	Voltage – 3 phase – 1 phase	(50/60Hz) 200/208/230/380/415/460V (50/60Hz) 100/115/200/230V
KF 16 Blank Flange(Al) P/N: SV-KF 16 BLNK	Noise Level (with air flush)	58 dB A @ 1m (66 dB)
KF 16 Stainless Centering Ring P/N: SV-KF 16 SSCR	Weight	55 lbs. (25 kg)
KF 16 Clamping Ring (Al) P/N: SV-KF 16 CLMPR	Dimensions	Inches: 15.75 L x 10 W x 13.23 H mm: 400 L x 252 W x 336 H
KF 25 Blank Flange (Al) P/N: SV-KF 25 BLNK	Inlet Connection	NW 25
KF 25 Stainless Centering Ring P/N: SV-KF 25 SSCR	Outlet Connection	NW 16
KF 25 Clamping Ring (Al) P/N: SV-KF 25 CLMPR	Water Handling	25g/day



Pumping Speed Curve - ISP 250C





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ISP-500C

AIR COOLED, OIL-FREE PERFORMANCE

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Features

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- Patented Air-Purge Circuit
- Latest "C" Design Revision
- Air Cooled
- Integrated Hour Meter

Applications

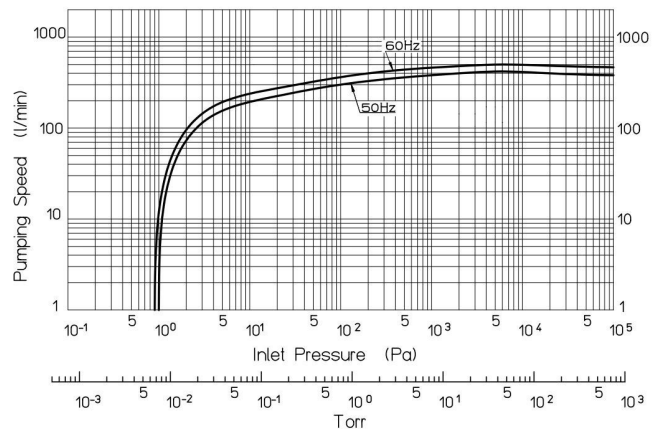
- Sputtering Systems
- Vacuum Coating Systems
- Helium Leak Detection Systems
- Vacuum Furnace Systems
- Laboratory Applications
- Electron Beam Processes
- Space Simulation
- SEM (Scanning Electron Microscope)

ISP-500C

ACCESSORIES	SPECIFICATIONS	
Power Cord (installed) 14/3, 9' long P/N: SV120PSI	Displacement	21.2 cfm (600 lpm) @ 60 Hz 17.6 cfm (500 lpm) @ 50 Hz
Isolation Feet - set of four P/N: SV500ISF	Ultimate Pressure	7.5 mTorr (1 Pa)
KF 25 Exhaust Muffler P/N: SV-KF 25MWRV	Motor Power Rating	0.6kW/0.8 hp
KF 40 Inlet Poral Filter P/N: SV-KF 40PF	Voltage – 3 phase – 1 phase	200/208/230/380/415/460V 100/115/200//230V
KF 25 Blank Flange(Al) P/N: SV-KF 25 BLNK	Noise Level (with air flush)	60 dB A (68 dB)
KF 25 Stainless Centering Ring P/N: SV-KF 25 SSCR	Weight	3 phase-84 lbs; 1 phase-102 lbs
KF 25 Clamping Ring (Al) P/N: SV-KF 25 CLMPR	Dimensions – 1 phase	Inches: 17.4 L x 12.9 W x 14.6 H mm: 443 L x 328 W x 372 H
KF 40 Blank Flange (Al) P/N: SV-KF 40 BLNK	Inlet Connection	NW 40
KF 40 Stainless Centering Ring P/N: SV-KF 40 SSCR	Outlet Connection	NW 25
KF 40 Clamping Ring (Al) P/N: SV-KF 40 CLMPR	Water Handling	25g/day



Pumping Speed Curve ISP-500C





ISP-1000

AIR COOLED, OIL-FREE PERFORMANCE



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THE ORIGINAL

FEATURES

- Oil-Free
- Improved Sealing Design
- Improved Water handling
- Patented Air-Purge Circuit
- Latest Design Revision
- Air Cooled

APPLICATIONS

- Sputtering Systems
- Vacuum Coating Systems
- Helium Leak Detection Systems
- Vacuum Furnace Systems
- Laboratory Applications
- Electron Beam Processes

ISP-1000

SPECIFICATIONS

Displacement	42.4 cfm (1200 lpm) @ 60 Hz 35.2 cfm (1000 lpm) @ 50 Hz
Ultimate Pressure	7.5 mTorr (1 Pa)
Motor Power Rating	1.3kW
Voltage – 3 phase	200/208/230/380/415/460V
Noise Level (with air flush)	65 dB A (70 dB A)
Weight	121 lbs (55kgs)
Dimensions – 3 phase	Inches:18.39 L x 15.35 W x 15 H
Inlet Connection	NW 40
Outlet Connection	NW 40
Water Handling	25g/day

