

Varian, Inc.
Vacuum Technologies

The New
Turbo-V 2K-G
System



Inspiring Excellence



VARIAN

The New Turbo-V 2K-G System

Maximizing Productivity and System Uptime

Turbo-V 2K-G System

- The first application-specific pumping solution designed for thin film deposition equipment
- The highest performing, most compact unit available
- The first fully integrated approach for maximum system productivity and uptime

Application Knowledge

- Generic products cannot deliver optimized peak performance in specific applications
- The basis for this system development and design are real user requirements
- Thin Film Deposition targeted performance in a unique industry proof package
- Successful field implementation by thorough application understanding

The System Interface

- Integrated package includes Turbo Molecular Pump, Drive Electronics, Power Supply, Monitor, Purge Gas and Communication
- Versatile electronics interface with easy to use control Software
- Analog I/O signals and RS232 / RS485 interface as standard
- Varian Profibus® interface as option

Monitoring & Diagnostics

- Built in self-diagnostics capability
- Real time reading of all operating parameters including characteristic vibration spectra
- Virtual presence of Varian Service organization via a simple data link connection
- Proactive maintenance plans maximize useful life and equipment uptime

Supply Chain & Logistic

- Parts availability at the right time and place minimizes the need of local inventories. This is assured by effective organization and planning
- Effective turn around of all items in the supply chain allows minimal local inventories
- Our service organization is supported by a worldwide SAP® system

Integrated Support

- Our toll free telephone hotlines provide you with the easiest live front-end support
- Native language representatives will assist you with Technical / Application / Order Processing / Engineering support
- Comprehensive Service programs can be tailored to meet your most demanding needs

Applications

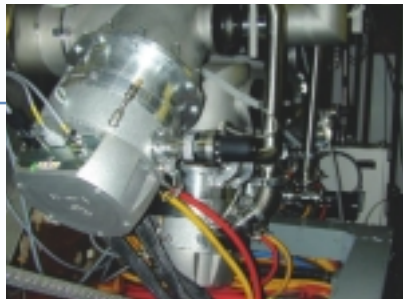
Thin Film deposition applications include:

- Coatings on Architectural, Automotive and Solar glass
- Coatings of substrates for the Flat Panel Display industry
- Optical and magnetic data storage media, including thin film heads
- Surface Treatments used for Tribological and Wear coatings
- Optical coatings for ophthalmic lenses and filters used for optical data transmission
- Functional and Decorative coatings, including Metallization
- Vacuum Web coating on foils or films used in the food, packaging and electronics industry
- PVD and other Plasma Process systems requiring high loads of gas to be handled



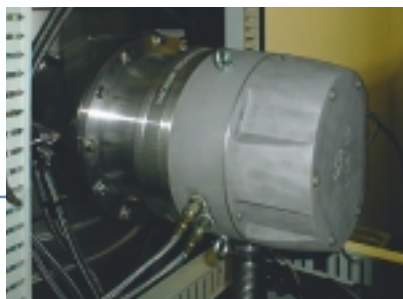
Glass Coating systems

The new pump is ideally suited for this heavy-duty production environment based on its targeted performance and the unique build in self-diagnostics capability in combination with tailored service & support plans.



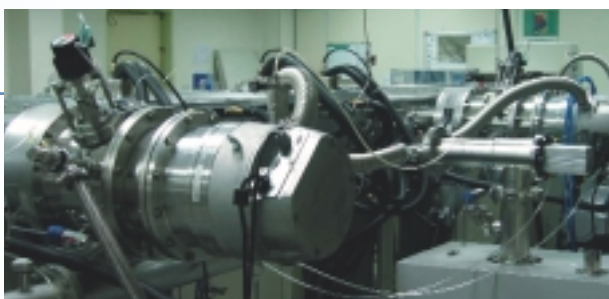
Vacuum Web Coating systems

In this roll to roll coating equipment, either a large single chamber or a multiple chamber system, the new pump is the ideal vacuum solution due to its unlimited installation orientation and its capability of creating differentiated partial pressures right at the point where it is required.



Optical Coating equipment

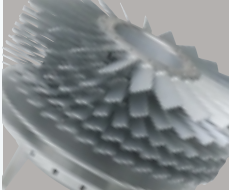
Specific benefits offered for this batch type, single chamber coating system are the specific performance, compact size and ease of system integration.



In-Line sputtering equipment

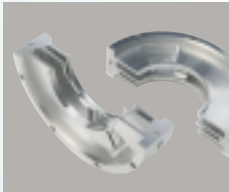
These multi chamber systems require maximum productivity, the maximized throughput capacity at stable operation pressures offered by the Turbo-V 2K-G makes it therefore the ideal pumping system.

Features and Benefits



Reliable by Design

The Turbo-V 2K-G is more than a pump – it is a dedicated pumping system, designed for the Plasma process industry. In fact, its pumping stages and entire pump structure are optimized to work with very high Ar gas flows and temperatures. The additional features of on board electronics, integrated vent and purge valve and maintenance free bearings set make the Turbo-V 2K-G the optimum solution for the coating industry



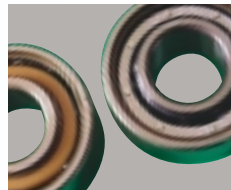
MacroTorr stages

The MacroTorr stage of the Turbo-V 2K-G is where Ar gas flows are pumped at high pressure, providing the outstanding throughput capacities in such a compact package. The MacroTorr stages are made in two solid pieces, to maximize heat transfer and minimize internal operating temperatures.



Integrated Purge and Vent Valves

The Turbo-V 2K-G is the first pump to fully integrate both purge and vent valves into the pump casing. They are actuated directly by the integrated electronics and nothing hangs out of the pump. They are protected from external shocks and contamination, granting for maximum lifetime



Maintenance free

The system is based on the Varian unique bearing and dry lubricant system. This combination enables maintenance-free operation. More, it gives the pump the feature to be mounted in any position without compromising performances and lifetime.



Integrated Temperature Monitoring System

The system is provided with a special temperature control system which continually controls gas load, pump power and cooling water temperature to keep pump materials and bearings operation within the working limits.



Integrated Waterproof Electronics

The electronics are totally integrated, protected and sealed into the pump housing, meeting IP54 specifications. Thanks to the microprocessor based architecture the pump can be easily interfaced to the control systems and operated with a laptop using the Navigator Software.



Profibus®

The Turbo-V 2K-G is ready for the next generation of system interfaces. If the standard built in RS485 interface or the I/O signals are not what is required, the system can be ordered with the Varian Profibus® optional communication card and specific GSD file. The optional Profibus® is of course fitted inside the IP54 pump housing.

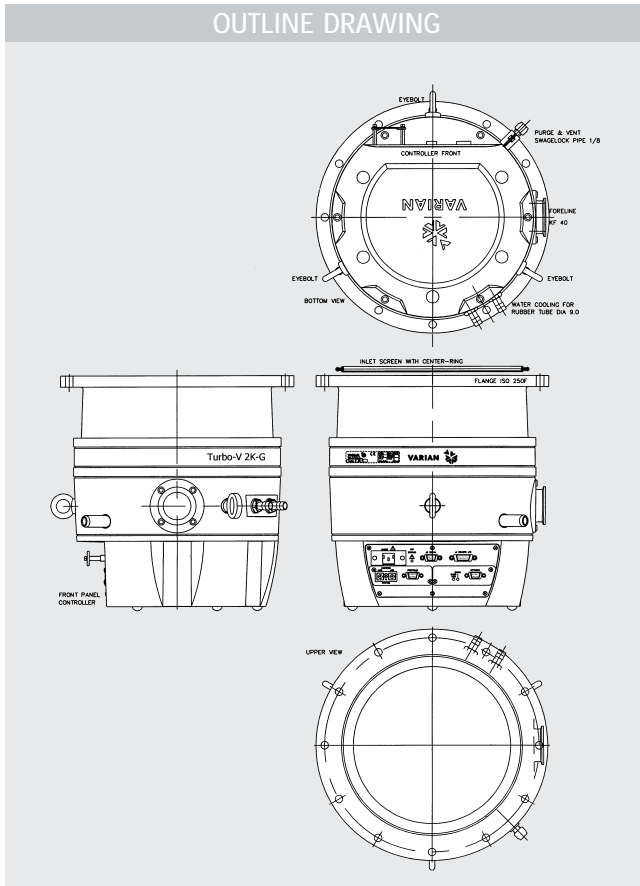


MoniTorr

The MoniTorr optional card allows 24/7 monitoring of all pump parameters. Up to 32 pumps can be connected together using the RS485 interface. All the data are collected by a MoniTorr server running a dedicated Varian Software Package. This setup allows the virtual presence of Varian dedicated Support Engineers at your site.

The New Turbo-V 2K-G System

OUTLINE DRAWING



TECHNICAL SPECIFICATION

| | |
|---|--|
| Pumping speed | N ₂ : 1600 l/s |
| Compression ratio | N ₂ : 3 x 10 ⁵ |
| Base pressure with recommended forepump | 5 x 10 ⁻⁸ mbar (4 x 10 ⁻⁸ Torr) |
| (According to standard DIN 28 428, the base pressure is that measured in a leak-free test dome, 48 hours after the completion of test dome bake-out, with a Turbopump fitted with a ISO 250 flange and using the recommended pre-vacuum pump) | |
| Inlet flange | ISO 250 F |
| Foreline flange | KF 40 NW |
| Nominal rotational speed | 33000 rpm |
| Start-up time | <7 minutes |
| Recommended forepump | > 40 m ³ /h |
| Operating position | Any |
| Operating ambient temperature | +5 °C to +40 °C |
| Power supply | |
| Input voltage | 100 - 240 Vac |
| Input freq.: | 50 - 60 Hz |
| Communication Interface | |
| Analogue I/O | Standard |
| RS232 / RS485 | Standard |
| Profibus | Optional |
| Dimensions | |
| Height | 335 mm |
| Diameter | 335 mm |
| Weight | 35 Kg |

ORDERING INFORMATION

| Description | Part Number |
|---|-------------|
| Turbo-V 2K-G system base | On request |
| Turbo-V 2K-G system with MoniTorr option | 969-8871 |
| Turbo 2K-G with Profibus® option | On request |
| Turbo 2K-G with Profibus® and MoniTorr options | On request |
| Mains cable NEMA Plug, 3m long | 969-9958 |
| Mains cable European Plug, 3m long | 969-9957 |
| Serial cable and Navigator Software 3.0 | 969-9883 |
| MoniTorr connectivity kit | 969-9260 |
| Remote Assist Support program 12 Months | RASS2KG_1YR |
| Remote Assist Support program 24 Months | RASS2KG_2YR |
| Inlet screen ISO 250 with center ring | 969-9138 |
| Water cooling kit for 6x8 (IDxOD) flexible tube | 969-9348 |
| Water cooling kit for 3/8 in. ID flexible tube | 969-933 |

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