

Turbo-V Accessories

Inlet Screens

To prevent any possible damage to the pump blades caused by particles falling into the pump, an inlet screen is available as an accessory. The inlet screen is a curved stainless steel mesh. It provides protection against debris larger than 0.7 to 3 mm (depending on the model), while reducing the pumping speed by only about 10%.

For ordering information, see individual pumps.

Heater Bands

To improve the attainable ultimate pressure in a vacuum system as well as to shorten the pump down time, bakeout of the chamber and the turbopump is recommended. To bake out the Turbo-V pumps, heater bands are provided as an option. The heaters are shaped to fit the upper part of the pump envelope and automatically heat up to a temperature of about 80 °C. The required bakeout time is a function of the degree of contamination of the system and the desired base pressure.

For ordering information, see individual pumps.

Air Cooling Kits

A fan is provided as an option for applications requiring forced air flow. The fan is easily installed using the included installation kit. The air cooling kit for the Turbo-V70's can be mounted beside or underneath the pump body. The fans for all the other pump models can be installed in a side location only. The maximum allowable ambient temperature for an effective cooling action is 30 °C. To meet the air flow rate specifications, care must be taken not to restrict or cover the space around the fan so that air can flow freely. The operation of the cooling fan is controlled by the Turbo-V controller.

For ordering information, see individual pumps.

Water Cooling Kits

A water cooling kit is provided to cool the pump when operating at high inlet or high exhaust pressures. The kit is available for the Turbo-V70, V301, 551, 701 and 1001 Navigator, V2000HT, and ICE Series turbo pumps. The cooling water can be supplied by an open circuit with drainage or a closed-loop refrigerated system.

Care must be taken to secure the tubes to ensure that they do not detach during operation. Four different kits with various tube sizes are available (refer to the following table).

Tube Size	Material	Screw Thread	Part Number
4 x 6 mm (ID x OD)	Plastic	1/8 BSP	9699347
6 x 8 mm (ID x OD)	Plastic	1/4 BSP	9699348
1/4" ID	SST	1/8 BSP	9699337
3/8" ID	SST	1/4 BSP	9699338

For ordering information, see individual pumps.

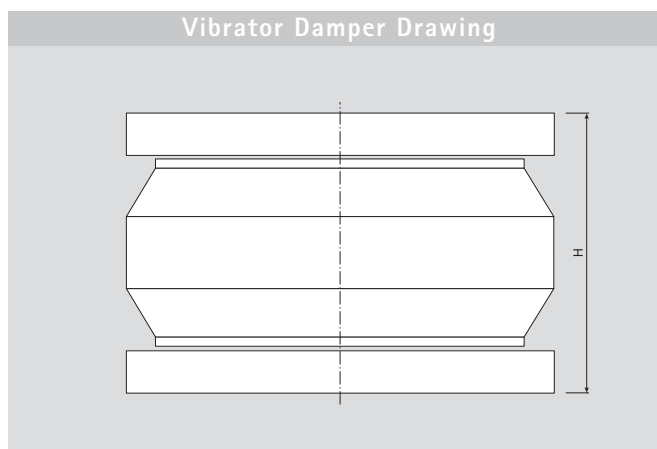
Vibration Dampers

Highly sensitive equipment such as an electron microscope and certain analytical instruments require extremely low vibration amplitudes. The dampers reduce turbopump vibration amplitude by at least a factor of 10

at their main frequencies.

They are available up to a size of 200 mm (ISO 200 or CF 10" O.D.). To effectively decouple the equipment from the pump, the vibration damper must be installed between the connecting flanges.

For ordering information, see individual pumps.



	H (mm)	H (inches)
Vibration Damper 4 1/2" CF	96.5	3.80
Vibration Damper 6" CF	101	3.97
Vibration Damper 8" CF	110	4.33
Vibration Damper 10" CF	113	4.45
Vibration Damper 63 ISO	84	3.31
Vibration Damper 100 ISO	84	3.31
Vibration Damper 160 ISO	88	3.46
Vibration Damper 200 ISO	88	3.46

Turbo-V Vent Valve

The Turbo-V Vent Valve, consisting of a control unit and a valve, is a complete unit for automatic venting of the Turbo-V pump when it is switched off or during a power failure. The valve is a normally open, electromagnetically-actuated valve with a filter on the air inlet. The control unit is powered by the Turbo-V controller and is provided with a fixed delay time of about 5 seconds to avoid undesired venting during a temporary power failure and to allow closure of the system valves before venting.

For ordering information, see individual pumps.

Turbo-V Vent Device

To control the venting of the Turbo-V pumps when they are switched off or during a power failure, a vent device is offered. The Turbo-V vent device consists of a normally closed valve and a control unit. The valve is electromagnetically-actuated and has a filter on the air-inlet. The control unit is powered by the Turbo-V controller and has a built-in battery backup. Delay and venting times are adjustable up to 36 minutes to optimize the venting conditions for each application.

For ordering information, see individual pumps.

Turbo-V Accessories

Handheld Terminal

The handheld terminal is a remote control display for use with V 70 series Turbo-V pumps when connected to a controller without a front panel. It consists of an LCD alphanumeric display and keyboard which provide useful real time indications of the operating conditions and parameters of the turbopump.

Moreover, it allows the reprogramming of the controller parameters and troubleshooting of the pump and controller. The handheld terminal is connected to and powered from the

Turbo-V controller through a 1.5 meter cable. For ordering information, please call your local Varian Office.

Purge Valve

To protect the bearings of a turbomolecular pump used with aggressive process gases, a measured supply of inert gas (N₂, Ar) must flow into the pump body around the upper bearing toward the fore-vacuum line. The Varian fixed orifice purge valve is calibrated for nitrogen to provide the correct gas flow to safely operate Turbo-V pumps. See Fixed Orifice Purge Valve Selection Guide below.

Fixed Orifice Purge Valve Selection Guide

Ordering Information				
Pump model	N ₂ Flowrate	Gas Line Connection	Weight kg (lbs)	Part Number
V70/V70D/V70LP				
	10 SCCM	NW16KF	0.2 (0.5)	9699231
	10 SCCM	1/4 Swagelok	0.2 (0.5)	9699234
	20 SCCM	NW16KF	0.2 (0.5)	9699235
	20 SCCM	1/4 Swagelok	0.2 (0.5)	9699238
	10 SCCM	1/4 Swagelok – 1/4 Swagelok*	0.2 (0.5)	9699232
	20 SCCM	1/4 Swagelok – 1/4 Swagelok*	0.2 (0.5)	9699236
V301/V551/V701/1001 Navigator /V2000HT				
	10 SCCM	NW16KF	0.2 (0.5)	9699239
	10 SCCM	1/4 Swagelok	0.2 (0.5)	9699240
	20 SCCM	NW16KF	0.2 (0.5)	9699241
	20 SCCM	1/4 Swagelok	0.2 (0.5)	9699242
	10 SCCM	1/4 Swagelok – 1/4 Swagelok*	0.2 (0.5)	9699232
	20 SCCM	1/4 Swagelok – 1/4 Swagelok*	0.2 (0.5)	9699236

* For remote installation