

## Titanium Sublimation Pumps

- Extra high pumping speed for getterable gases
- Can be installed inside an ion pump – PEG version
- Compatible with all MBE systems
- Very clean - no contamination introduced into the system
- Many years of use before reconditioning
- Can be mounted vertically or horizontally



PEG model



TSP model

### Product introduction

Titanium Sublimation Pumps (TSP) are used to pump getterable gases such as hydrogen and nitrogen.

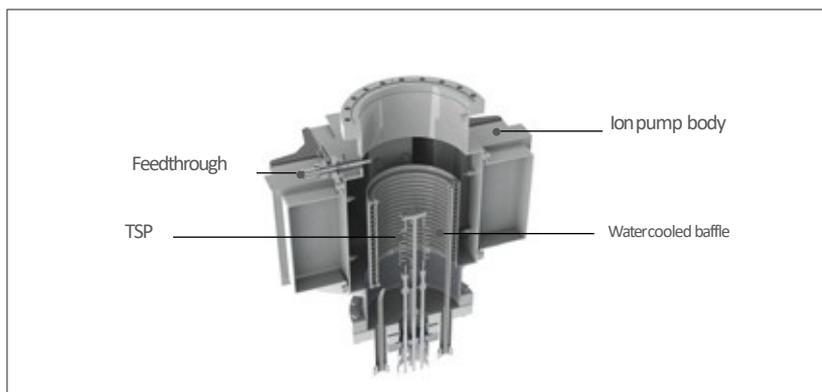
TSPs are often combined with an ion pumping system, offering an extra-high pumping speed for getterable gases. The TSP can be added inside an PI ion pump, giving the PEG model, or as a separate unit TSP (usually used in Riber MBE pumping wells for instance).

Getter pumping is performed by depositing titanium, which has been sublimed from the surface of Ti filaments heated by an electrical current, onto cooled surfaces.

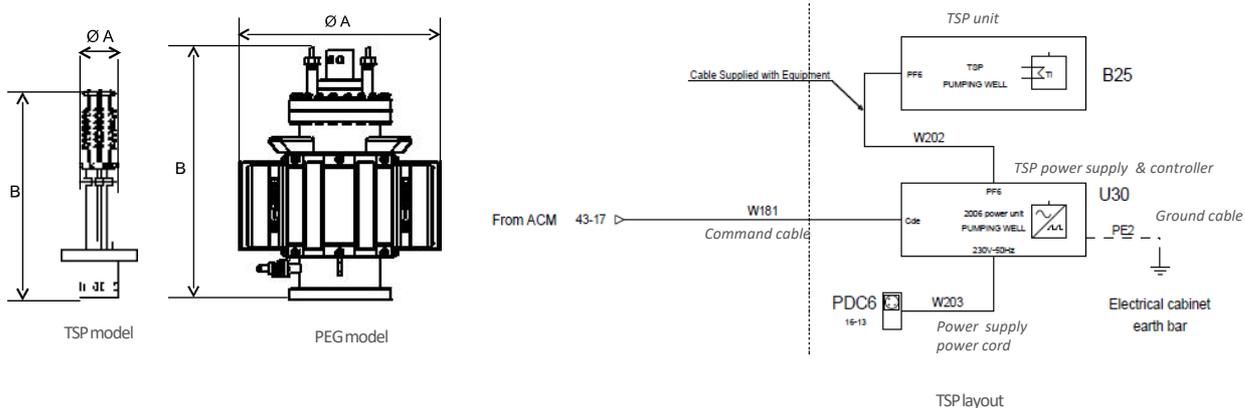
This effect is generated periodically (intermittent pumping) to reach very low pressures and enhance the base vacuum.

Pumping efficiency is adjusted by varying the filament heat intensity and the frequency of the operating cycles.

As this titanium sublimation effect is periodical, it is used in addition to a basic pumping, continuously operated, typically ion pumping by standard or rare gas elements.



## Layout



## Specifications

	Titanium sublimation pumps		Titanium sublimation ion pumps	
	TSP4	TSP6	PEG 2000	PEG 4000
Dimensions A*/B in mm	44 / 322	55 / 320,6	392 / 495,4	392 / 653
Ion pump nominal speed for air	-	-	200 l/s	400 l/s
Operating range (Torr)	-	-	8x10 <sup>-3</sup> to 10 <sup>-12</sup>	8x10 <sup>-3</sup> to 10 <sup>-12</sup>
Connecting flange	CF 50	CF 63	CF 150	CF 150
Mass	1 kg	1,3 kg	75 kg	130 kg
Number of pumping elements – filaments (spiral)	4	6	4 (includes a TSP4)	4 (includes a TSP4)
Number of pumping elements – ion elements - 25l/s	-	-	8	16
Operating voltage	-	-	4.8 kV	
Maximum bakeout temperature	-	-	150°C with magnet / 450°C without magnet	
Number of high voltage feedthroughs – MTHT CF16 *	-	-	1	1

\*:to ensure correct installation, for internal tube diameter, please consider 48mm for TSP-4 & 60 mm for TSP 6

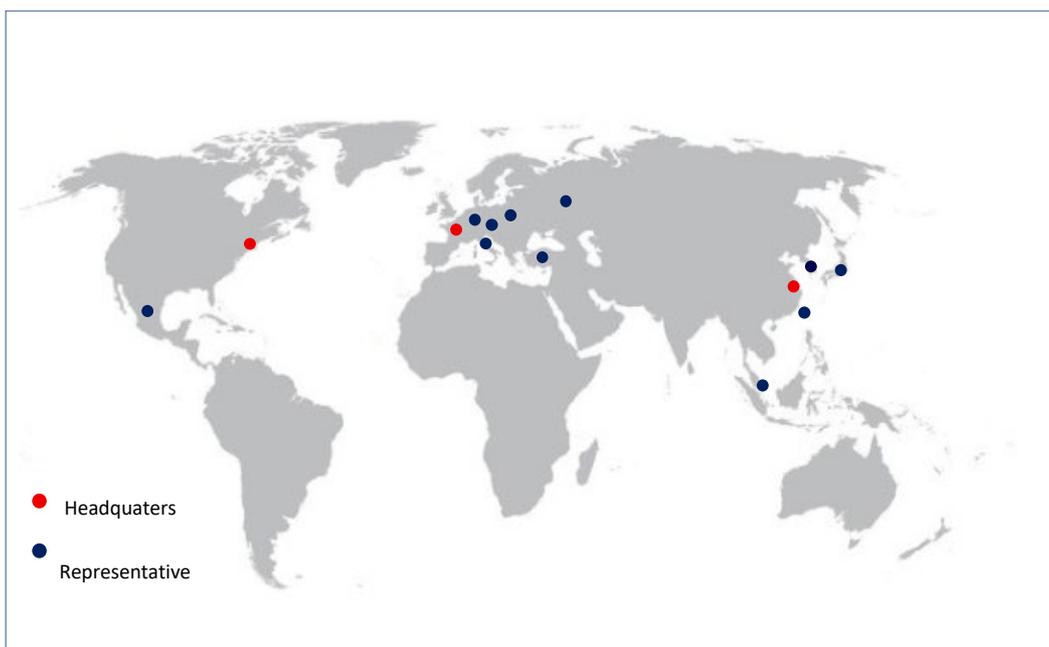
\*\*: for power supplies, contact Riber

## Titanium sublimation ion pump reconditioning

By design the ion pump requires reconditioning or replacement after many years of use only. Riber provides a complete reconditioning contract that allows you to make a standard exchange of the defective or contaminated ion pump. The pump offered for a standard exchange has been completely refurbished: dismantled, cleaned, repaired and tested. Its characteristics are equivalent to those of a brand new one with much lower price.

## RIBER SALES AND SERVICE NETWORK

For more information, please contact your local sales representative



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