

# What is TwisTorr?

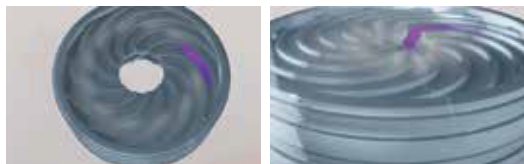
The new molecular-drag technology, applied to the entire family from 84FS to 804FS.

## Agilent TwisTorr Technology\*

- Pumping effect is created by a spinning rotor disk, which transfers momentum to gas molecules.
- Gas molecules are forced to follow spiral groove design on the stator. The specific design of the channel ensures constant local pumping speed and avoids reverse pressure gradients, minimizing power consumption.

(\*) US Patents applications 12/343961 and 12/343980, 24 Dec. 2008.

### Centripetal pumping action



Lower surface area of rotating disk transfers momentum to gas molecules.

Spiral groove design on the upper section of the TwisTorr stator causes a centripetal pumping action).

### Centrifugal pumping action



Upper surface area of rotating disk transfers momentum to gas molecules.

Spiral groove design on the lower section of the TwisTorr stator causes a centrifugal pumping action.

## Leading Edge Performance

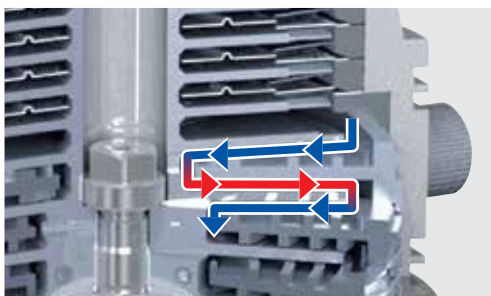
- The TwisTorr pumps offer the highest pumping speed in their category for all gases.
- The state of the art TwisTorr technology also achieves the highest compression ratios for light gases in a commercially available turbomolecular pump.
- While offering the highest performance, average power consumption by the new drag section design is reduced by a factor of four, compared to previous designs.

## Space Saving Design

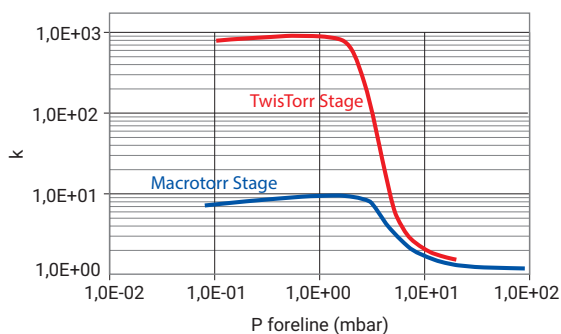
- Our rotor is based on the proven Agilent monolithic rotor design, which positions the TwisTorr stator between two smooth spinning disks and therefore exploits the pumping action by both disk surfaces in series.
- The double-sided spiral groove design on the TwisTorr stators combines centripetal and centrifugal pumping action in series, greatly reducing the size of the drag section.

## Compression ratio

- Compression ratio for  $N_2$  of a single TwisTorr stage can increase up to a factor of 100 with respect to a MacroTorr stage of the same space and rotor speed, without reducing foreline tolerance and pumping speed.



Gas flow in centripetal and centrifugal direction through TwisTorr channels



Learn more at:

[www.agilent.com/chem/twistorr304fs](http://www.agilent.com/chem/twistorr304fs)