

# ZGF Tornado Product Data Sheet

The Most Advanced, Automatic,  
Non-Disposable Liquid Filtration System



Performance, Simplicity, Consistency, Reliability, and the Lowest Cost of Ownership



The Tornado is a patented (patent # 10,207,278) centrifugal separator that puts a new spin on an established technology! The Tornado separator is the future of centrifugal separation technology. **The innovative separator utilizes an internal blade design. The blades create a unique and beneficial flow path through the separator that increases the “G – Force” with a pressure drop of less than 1 psi, resulting in more effective and efficient particle removal with less energy consumption.**

If you are looking for economical particle removal, the Tornado separator is your new choice for centrifugal separators. The Tornado is simple but extremely innovative, has no moving parts, and no media. Tornado effectively removes particles without any regular maintenance.

Centrifugal separators are used in Power Generating plants, Automotive plants, Steel Mills, and in Oil & Gas. They are utilized to filter machining coolant, wash solutions, cooling and process water, quench fluid, flowback water and brine, and many other process fluids. With standard sizes ranging from 2” to 8”, the Tornado can handle flows from 50 gpm to 1,500 gpm.

Inlet / Outlet Size	Purge Size	Minimum Flow	Maximum Flow
2”	1”	50 gpm	115 gpm
3”	1.5”	115 gpm	225 gpm
4”	1.5”	225 gpm	400 gpm
6”	1.5”	400 gpm	800 gpm
8”	1.5” / 2”	800 gpm	1,500 gpm

The Tornado effectively removes suspended solids, providing the following value:

- Minimizes fouling of cooling water system piping and equipment. Reduces labor costs associated with manual cleaning of cooling tower basins, chillers, condensers, and heat exchangers
- Improves performance and efficiency of heat transfer equipment, and reduces energy costs
- Reduces loading on downstream filters, extends the life of expensive, low micron cartridge filters
- Extends fluid life and reduces sump maintenance in quench systems, grinders, parts washers, etc.

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### Tornado Description and Operation:

Dirty fluid enters tangentially near the top of the separator. As the fluid enters, the blades create and maintain a high-velocity centrifugal force that causes the fluid to “spin” down the entire length of the separator’s body. The centrifugal force created by the blades forces the particles toward the outer wall of the separator and away from the clean water discharge slots. Once the separated particles pass the discharge slots they slow down and settle towards the bottom of the separator body. Particles collect in the bottom until the purge valve is opened, flushing the particles from the separator. The separator discharge tube carries clean water from the discharge slots to your process.



<b>TORNADO FEATURE</b>	<b>YOUR BENEFIT</b>
<b>Full 1-year warranty</b>	Peace of mind, reduced operating and maintenance costs
<b>Fully automatic, self-cleaning operation</b>	Reduced maintenance and operating costs, Labor is now available for other value-added plant services
<b>Up to 98% removal of particles larger than 44 microns with a specific gravity &gt;2.6</b>	Improves process reliability, reduces energy and maintenance costs
<b>Multiple Configurations – Vertical, Horizontal, Angled</b>	Fits into your available area and can save valuable floor space
<b>Uninterrupted flow, even during purge</b>	24-hour / 7-day operation, eliminates downtime, allows for optimized operational productivity
<b>Virtually maintenance free, consistent, and reliable performance</b>	Improved quality and lower operating costs with minimal operator involvement
<b>No moving parts</b>	Nothing to wear out or replace
<b>Low pressure drop, less than 1 psi</b>	Smaller pumps / less HP– lower capital / maintenance costs. Reduced energy costs
<b>Low energy requirement</b>	Economically and environmentally responsible
<b>Efficient and environmentally responsible media-free design</b>	Creates no additional waste (i.e. no disposable media, no packaging).
<b>Patented Internal Blade Design - Higher “G” forces</b>	More efficient & effective particle removal with lower energy requirement.
<b>Flanged separator body and solids collection chamber</b>	Allows easy access for internal inspection and should any maintenance be required.

Rev B

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