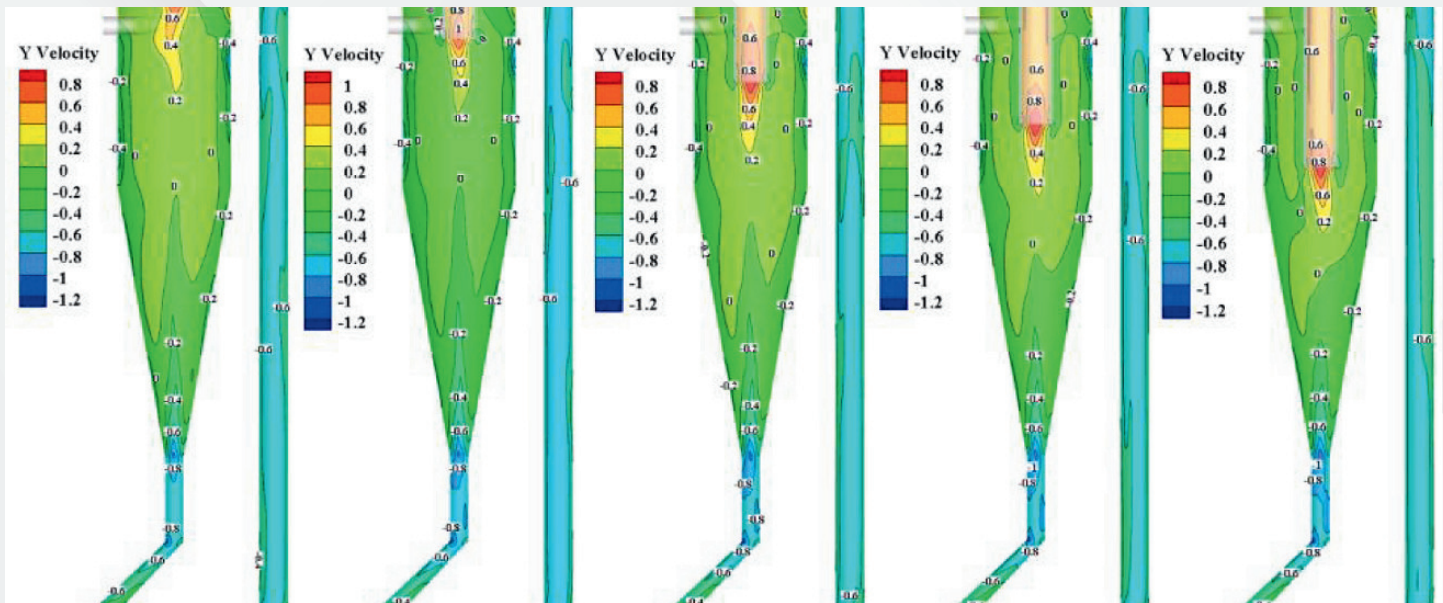
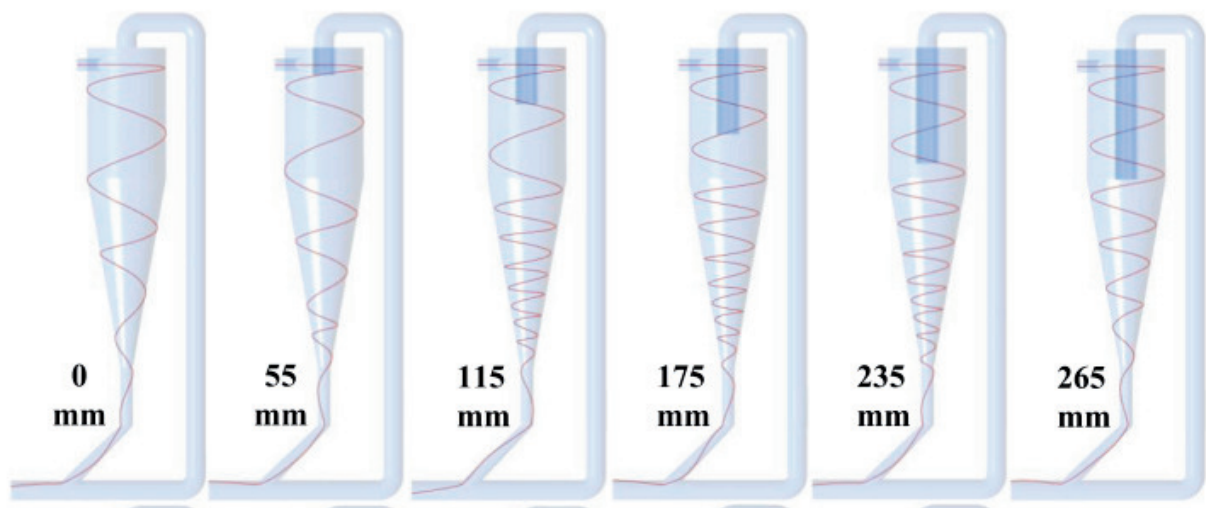




ANKA HC

HYDROCYCLONE SEPERATOR



Pressure Vessels & Pressurized Equipments

Hydrocyclones



Scientific approach with application

Hydrocyclones are one of the most underrated separation devices, offering no dynamic parts and zero maintenance when designed correctly. However, many companies in the market take a copy-paste approach, replicating designs without understanding the physics and mathematics behind their operation.

Same HydroCyclone Duplicated all around the world without measuring the performance

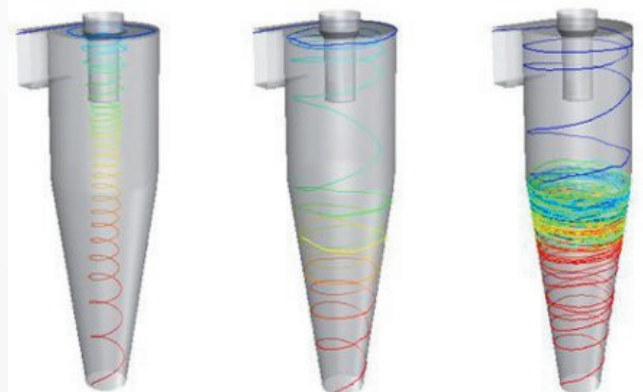


All cyclones work by consuming energy of the fluid but with what cost.
Are you measuring the downstream separation efficiency?

In reality, hydrocyclones are complex to engineer, requiring careful consideration of multiple design parameters, including vortex stability, pressure drop, cut size, and flow distribution. A properly designed hydrocyclone significantly improves separation efficiency, reducing the solid load reaching downstream strainers, cartridge filters, and bag filters.

This results in:

- ✓ Extended lifespan of filtration elements
- ✓ Lower maintenance costs
- ✓ Reduced pressure drop in the overall system
- ✓ Optimized filtration performance



Neglecting proper design leads to inefficient separation, causing clogging, pressure losses, and frequent filter replacements—a costly mistake. Understanding the true physics behind hydrocyclones is essential to unlocking their full potential in industrial processes.

Hydrocyclones



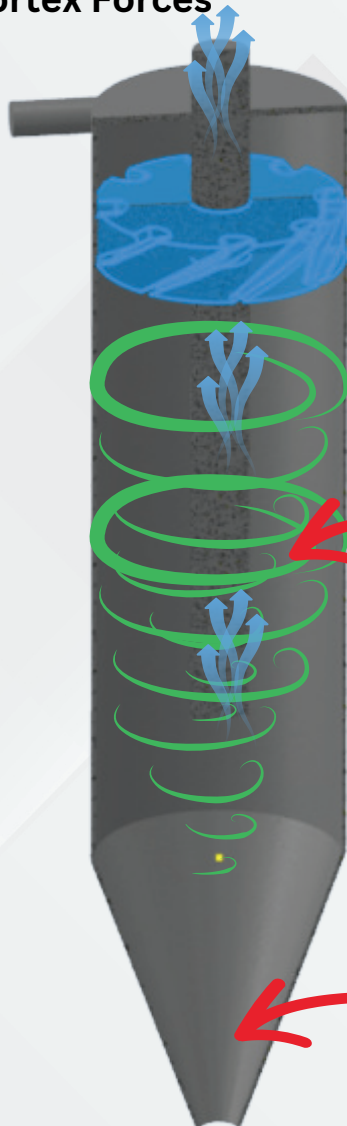
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Ankara PV&E: Engineering Hydrocyclones with Science and Precision

At Ankara PV&E, we come from a background in fluid dynamics and pressure vessel design—the fundamental disciplines required to develop hydrocyclones in a scientific and practical way. Our expertise allows us to design hydrocyclones with optimal efficiency, minimal maintenance, and superior separation performance, ensuring they integrate seamlessly into industrial filtration systems.

Rather than relying on trial and error, we apply engineering principles and computational analysis to develop hydrocyclones that reduce operational costs and enhance process reliability.

Hydrocyclone Efficiency Starts with Balanced Vortex Forces



1

To achieve equal distribution of vortex forces, specially designed vortex plates must be used. These plates help minimize pressure losses while maximizing separation efficiency, ensuring a stable and uniform vortex for optimal performance.

2

The vortex finder length is critical for maintaining a consistent vortex. If the flow is separated too early or too late, particles can become entrained in turbulent flow, leading to carryover into the downstream system and reducing separation efficiency.

3

Underflow Cone Angle is calculated based on the water parameters and particle distribution analysis.

DETAILS CREATES DIFFERENCE

Pressure Vessels & Pressurized Equipments

Hydrocyclones



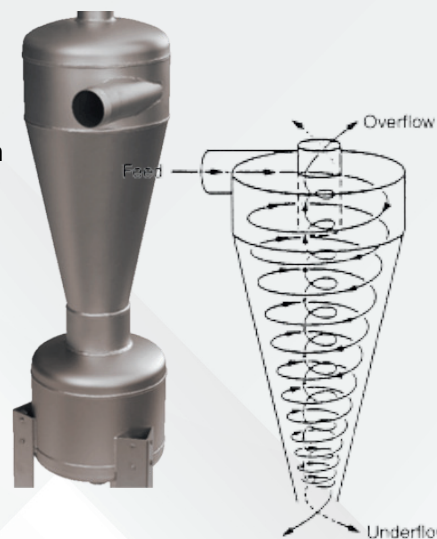
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MEET THE ANKA HydroCyclones Family

ANKA Standard Performance HydroCyclones, SHC series is designed for applications where cyclone efficiency does not impact downstream equipment performance, such as in irrigation systems. If the separation of particles above 70 microns is sufficient for the process, this series offers a cost-effective solution.

This series is available only in stainless steel (SS) due to corrosion concerns. Internal coatings are not used because:

- **Corrosion Resistance:** Lack of an internal coating in non-SS materials would lead to rapid deterioration.
- **Durability:** Even if a coating were applied, it would eventually wear off due to the abrasive effect of vortex-driven particles.



Seperator Model	Inlet/Outlet	Flow Rate(m3/hr)	Required Minimum Pressure (barg)
ANKA SHC20	DN20 BSP Male	Up to 3m3/hr3	1
ANKA SHC25	DN25 BSP Male	Up to 7m3/hr3	1
ANKA SHC32	DN32 BSP Male	Up to 11m3/hr3	1
ANKA SHC40	DN40 BSP Male	Up to 16m3/hr3	1
ANKA SHC50	DN50 PN10 Flanged	Up to 25m3/hr3	1.5
ANKA SHC65	DN65 PN10 Flanged	Up to 36m3/hr3	1.5
ANKA SHC80	DN80 PN10 Flanged	Up to 67m3/hr3	1.5
ANKA SHC100	DN100 PN10 Flanged	Up to 92m3/hr3	1.5
ANKA SHC125	DN125 PN10 Flanged	Up to 112m3/hr3	1.5
ANKA SHC150	DN150 PN10 Flanged	Up to 210m3/hr3	1.5
Above sizes	*Extremely Important Note ANKARA PVE does not offer above sizes due to performance problems		

- **Material of Construction:** SS304-SS316-Duplex-SuperDuplex
- **Design Temperature:** -80 degC to +200 deg C due to SS only design.
- **Filtration rating particles > 70mic %99**

Extremely important note:

Smaller hydrocyclones achieve **validated** better separation due to higher centrifugal forces and lower turbulence. As size increases, efficiency drops due to particle re-entrainment and longer residence times. Large hydrocyclones also lack lab-scale validation, with performance often inferred from simulations or field tests. **This is why ANKARA PVE not offering below certain sizes. The figure in the right shows a hydrocyclone where multiple small cyclones are combined for higher flow rates.**



Pressure Vessels & Pressurized Equipments

Hydrocyclones



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MEET THE ANKA HydroCyclones Family

ANKA Ultra Vortex HydroCyclones, UVHC series is designed for applications requiring high filtration efficiency, ensuring the separation of particles larger than 40–50 microns. This advanced design provides superior performance in processes where fine particle removal is critical.

Engineered for precision and reliability, Ultra Vortex Hydrocyclones offer optimized separation compared to standard models, making them ideal for demanding applications.

This series is available only in stainless steel (SS) due to corrosion and erosion resistance. Ultra Vortex series uses a Vortex Generator blade system for vortex generation at max.



Seperator Model	Inlet/Outlet	Flow Rate(m3/hr)	Required Minimum Pressure (barg)
ANKA SHC20	DN20 BSP Male	Up to 3m3/hr3	1.2
ANKA SHC25	DN25 BSP Male	Up to 7m3/hr3	1.2
ANKA SHC32	DN32 BSP Male	Up to 11m3/hr3	1.2
ANKA SHC40	DN40 BSP Male	Up to 16m3/hr3	1.2
ANKA SHC50	DN50 PN10 Flanged	Up to 25m3/hr3	1.5
ANKA SHC65	DN65 PN10 Flanged	Up to 36m3/hr3	1.5
ANKA SHC80	DN80 PN10 Flanged	Up to 67m3/hr3	1.5
ANKA SHC100	DN100 PN10 Flanged	Up to 92m3/hr3	1.5
ANKA SHC125	DN125 PN10 Flanged	Up to 112m3/hr3	1.5
ANKA SHC150	DN150 PN10 Flanged	Up to 210m3/hr3	1.5
Above sizes	*Extremely Important Note ANKARA PVE does not offer above sizes due to performance problems		

- Material of Construction: SS304-SS316-Duplex-SuperDuplex
- Design Temperature: -80 degC to +200 deg C due to SS only design.
- Filtration rating particles > 50mic %99

Extremely important note:

Smaller hydrocyclones achieve **validated** better separation due to higher centrifugal forces and lower turbulence. As size increases, efficiency drops due to particle re-entrainment and longer residence times. Large hydrocyclones also lack lab-scale validation, with performance often inferred from simulations or field tests. **This is why ANKARA PVE not offering below certain sizes. The figure in the right shows a hydrocyclone where multiple small cyclones are combined for higher flow rates.**



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Pressure Vessel Solutions



Storage Vessel



Multimedia Filtration Vessels



Hydraulic Surge Tanks



Reactor Vessels



Air Receivers



Hydrocyclones



Process Vessels



Bag Filters

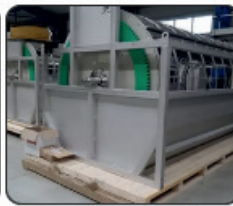
Process Equipment Solutions



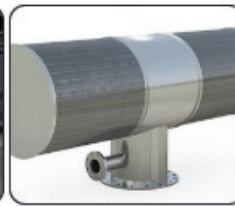
Static Rundown Screens



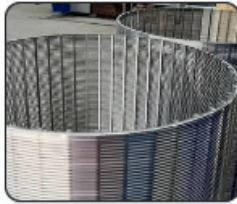
Channel Type Drum Filter



Conduit Type Drum Filter



Passive Intake Screen



Custom WedgeWire screen



Dissolved Air Flotation



Piping Spools



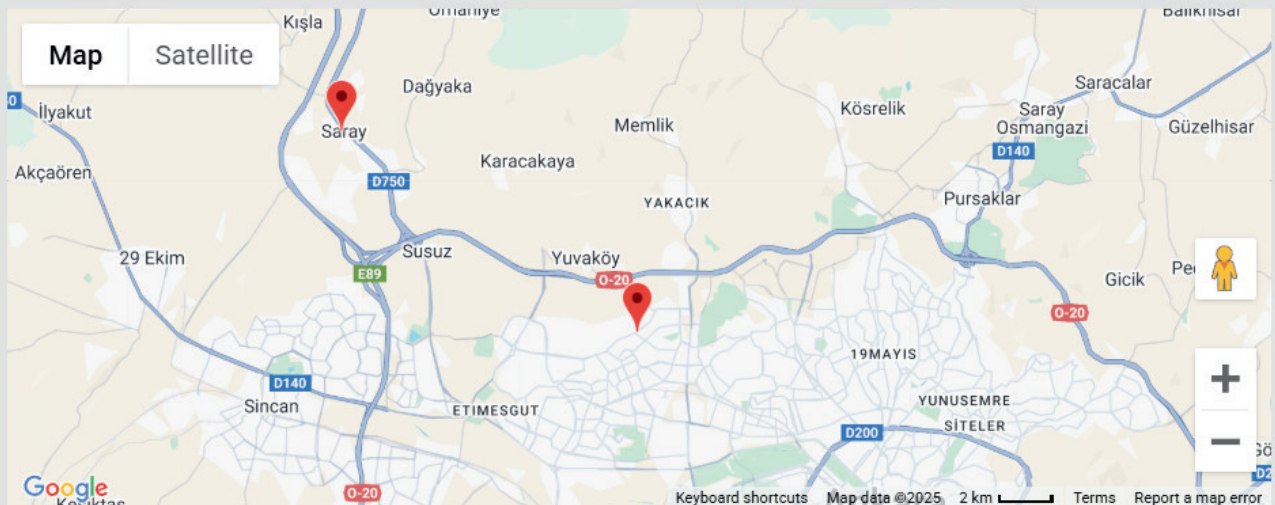
Inclined Belt Filter

Office & Prototype Manufacturing

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DESIGN <> MANUFACTURE <> VALIDATE