



CLUSTER CYCLONE WASHERS MX SERIES



CYCL**WASH**
A Taurian Brand

HIGH-THROUGHPUT CLASSIFICATION WITH FLEXIBLE CYCLONE OPERATING CONTROL

Designed for high-capacity mineral and aggregate processing circuits, the Taurian Cyclowash MX Series Cluster Cyclone combines multiple hydrocyclones within a common feed system for consistent classification, stable separation and flexible plant operation. Built for demanding slurry applications, the MX Series maintains controlled cut size and efficient separation across varying feed conditions, while individual cyclone isolation simplifies maintenance and helps improve plant availability.

High processing capacity

Multiple cyclones operating in parallel allow higher slurry throughput within a compact classification system.

Flexible operating capacity

Individual cyclones can be brought online or isolated to match changing feed rates and process requirements.

Wear-resistant construction

Critical internal components are designed for abrasive slurry handling and extended service life in demanding applications.

Balanced Feed Distribution

Optimized manifold design distributes slurry evenly across each cyclone, helping maintain stable pressure and consistent classification.

Consistent separation efficiency

Controlled feed distribution supports uniform cyclone performance and reliable separation of coarse and fine particles.

Improved uptime

Individual cyclone isolation allows inspection or maintenance without necessarily taking the complete cluster out of operation.

Simplified maintenance access

Modular cyclone arrangement provides easier access to individual units, liners, apexes and vortex finders for inspection and replacement.

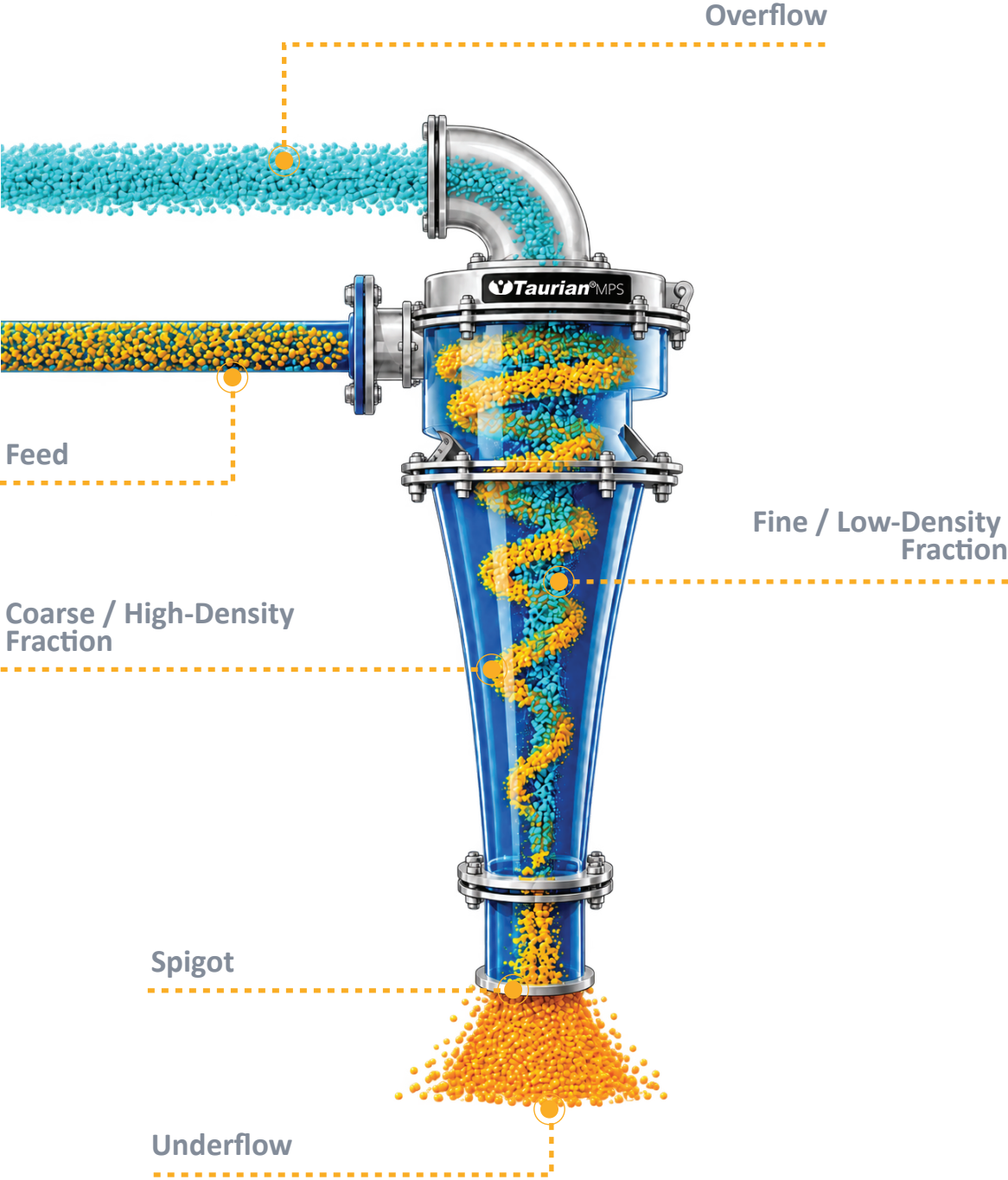
Modular Cluster Configuration

Cyclones can be added, isolated or configured to suit changing throughput, feed conditions and separation requirements.



CYCLOWASH HYDRO-CYCLONE

HOW IT WORKS?



CONSISTENT CLASSIFICATION UNDER

VARIABLE PROCESS CONDITIONS

Designed to maintain stable classification even as feed rate, slurry density and solids loading change during operation. Controlled inlet flow and consistent internal vortex formation help keep particle separation steady, reducing fluctuations in cut size and supporting reliable underflow and overflow quality across changing process conditions.



- How it works**
 Taurian Cyclowash hydrocyclones use controlled tangential flow to achieve efficient particle separation, directing coarse material to the underflow while fines exit through the overflow.
- Improved flow with efficient separation**
 Controlled feed entry and stable vortex formation support uniform particle separation, consistent cut size and reliable classification across varying slurry conditions.
- Increasing circuit capacity**
 Optimized inlet and internal geometry support stable slurry flow, reduced turbulence and consistent classification, enabling higher throughput across demanding processing circuits.
- Extended wear life**
 Replaceable abrasion-resistant components protect critical wear zones, helping reduce erosion, simplify servicing and maintain reliable cyclone performance in abrasive slurry applications.

WHY TAURIAN MPS HYDROCYCLONE?

Optimized Feed Entry

The feed point is critical because it determines how smoothly and evenly slurry enters the cyclone. A well-designed tangential entry introduces the feed at the correct angle and velocity, helping establish the rotational flow immediately while reducing turbulence and direct impact on the inlet wall.

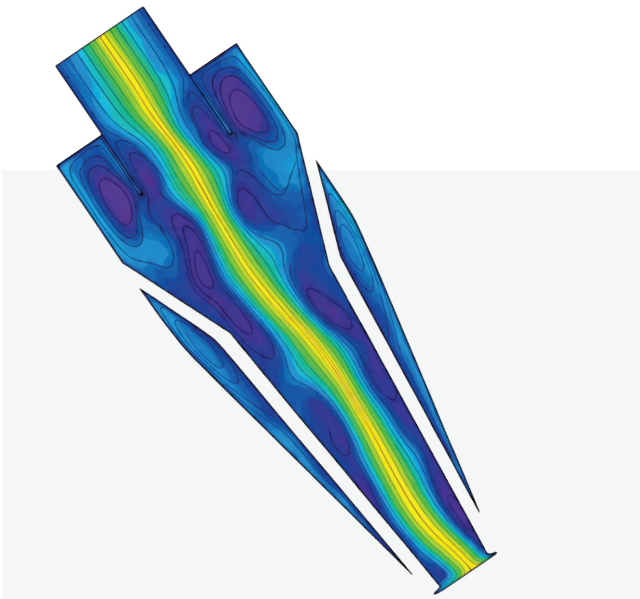
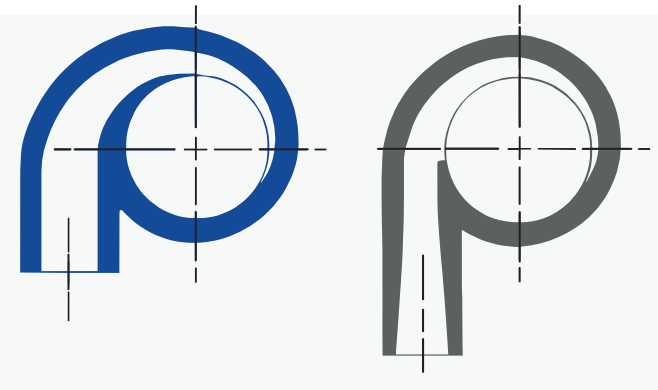
- **Controlled feed entry** – guides slurry smoothly into the cyclone for stable vortex formation.
- **Reduced inlet impact** – minimizes localized erosion and wear at one of the highest-stress areas.
- **Consistent classification** – stable entry conditions help maintain more uniform separation across changing feed rates.



Why the Inlet Shape Matters?

The curved inlet geometry guides slurry smoothly into the cyclone, reducing the abrupt impact against the outer wall. This helps lower turbulence, reduce localized wear and establish a more stable rotational flow for consistent classification.

- **Lower impact at the inlet** – smoother flow entry reduces direct slurry contact with high-wear surfaces.
- **Reduced turbulence** – gradual flow transition supports a more stable vortex inside the cyclone.
- **Improved wear life** – less localized impact helps extend the service life of inlet components.



Controlled Flow Through the Cone

The tapered cone geometry guides the rotating slurry smoothly toward the apex, maintaining velocity while reducing abrupt changes in direction. This controlled flow limits unnecessary turbulence and uneven wall impact, helping reduce localized wear while supporting stable particle separation.

- **Smooth flow acceleration** – slurry is progressively guided toward the apex.
- **Reduced localized wall wear** – controlled movement minimizes concentrated impact zones.
- **Stable separation pattern** – consistent flow supports reliable coarse and fine particle classification.



Controlled Internal Flow

The curved internal flow path helps guide slurry around the cyclone body with less direct impact against the inner wall. By reducing sharp flow changes and localized collision zones, the design helps lower turbulence and surface erosion while maintaining a stable rotational flow for consistent separation.

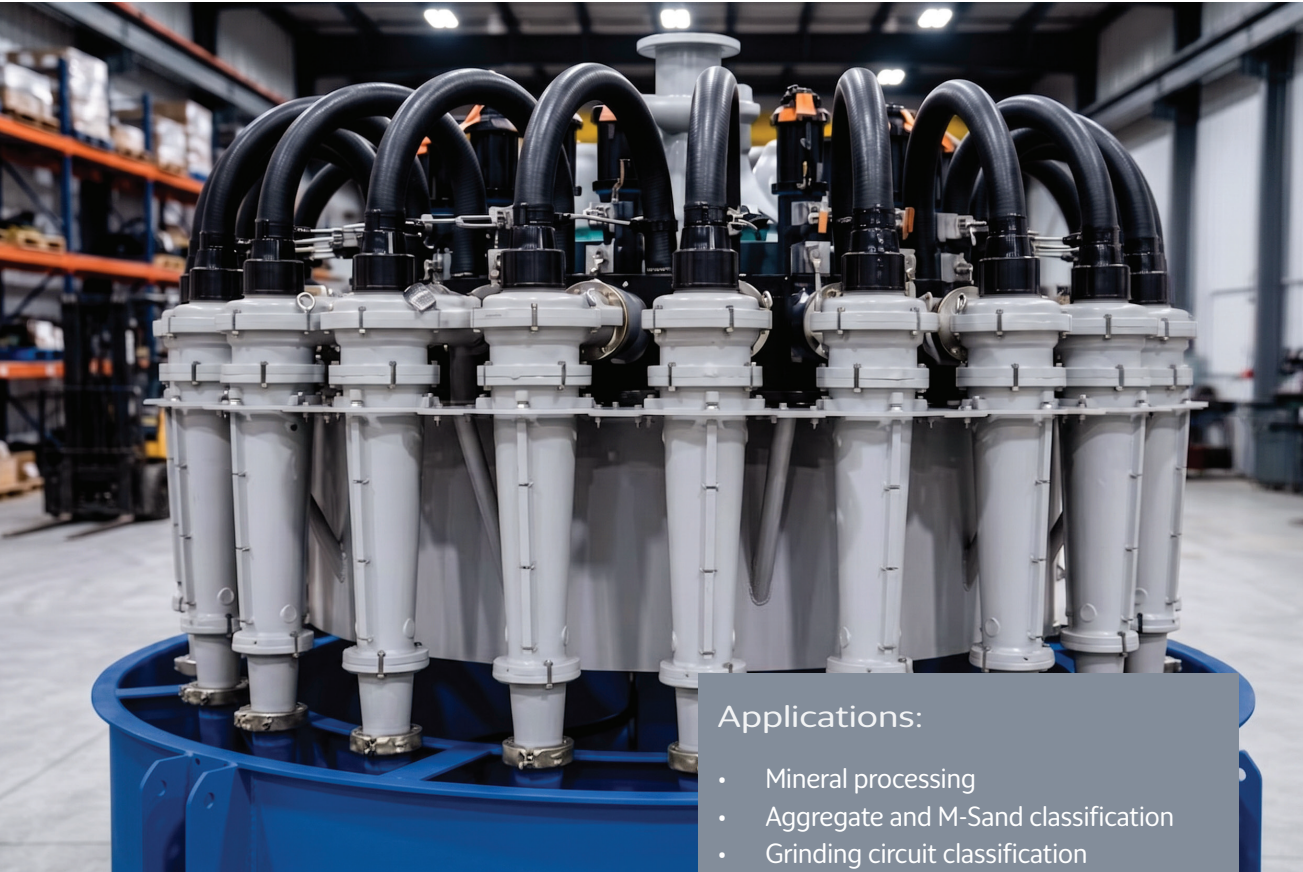
- **Reduced wall impact** – smoother slurry movement limits direct contact with high-wear internal surfaces.
- **Lower wear and tear** – reduced localized erosion helps extend liner and cyclone body service life.
- **Stable flow pattern** – controlled rotation supports consistent particle separation and classification.

SMARTER HYDROCYCLONE CLUSTER DESIGN

Taurian MPS Cluster Cyclones are engineered as an integrated classification system where multiple hydrocyclones operate in parallel through a common feed manifold. Instead of relying on a single large cyclone, the cluster arrangement distributes slurry across several units, helping maintain more stable operating pressure, consistent feed conditions and uniform separation performance.

The layout also gives the plant greater flexibility. Individual cyclones can be brought online or isolated as throughput changes, allowing capacity to be adjusted without disturbing the entire system. This modular approach also improves maintenance access, since selected cyclone units, valves or wear components can be inspected and serviced independently.

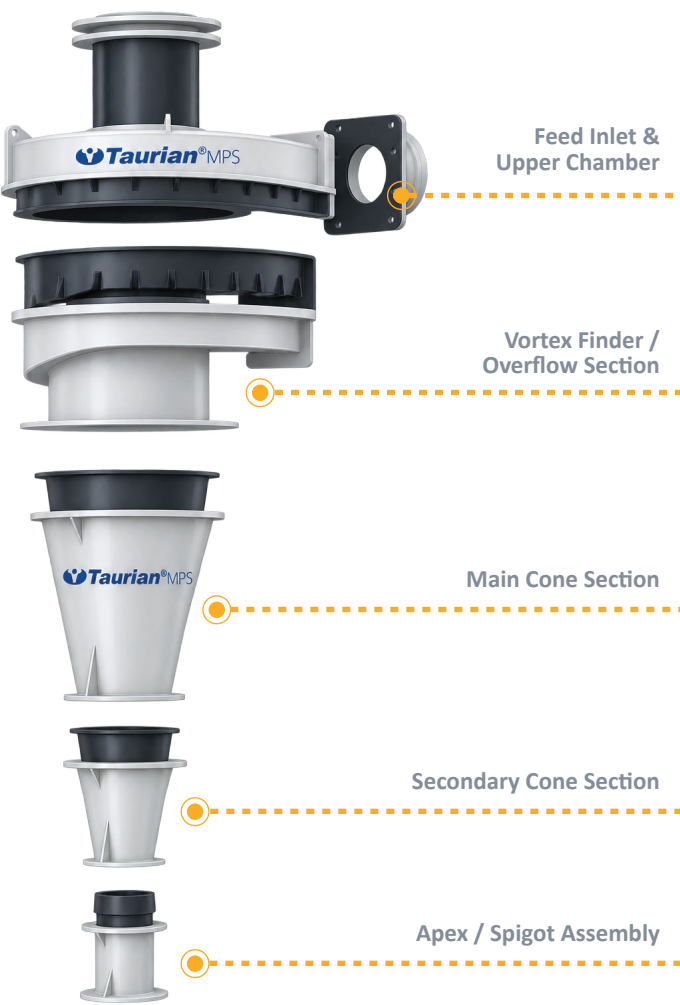
- Balanced slurry distribution – supports consistent pressure and classification across active cyclones.
- Flexible throughput control – cyclone quantity can be adjusted to match changing process demand.
- Improved maintenance access – individual units can be isolated for inspection or servicing.
- Compact high-capacity arrangement – multiple cyclones deliver higher processing capacity within one integrated system.



- Applications:
- Mineral processing
 - Aggregate and M-Sand classification
 - Grinding circuit classification
 - Desliming and dewatering
 - Fines recovery
 - Tailings processing
 - Industrial slurry separation
 - Process water and solids separation

MODULAR HYDROCYCLONE CONSTRUCTION

The Taurian MPS Hydrocyclone is designed as a modular assembly, with each major section performing a specific role in the classification process. The upper feed chamber and inlet introduce slurry into the cyclone, the cylindrical and conical sections develop and maintain the rotating flow, and the lower apex assembly controls coarse underflow discharge. Separate flanged sections make the unit easier to inspect, service and replace in high-wear areas without changing the complete cyclone.



Technical Specification

Model	MX 100	MX 150	MX 250	MX 375	MX 500	MX 650	MX 800
Body Diameter	100 mm	150 mm	250 mm	375 mm	500 mm	650 mm	800 mm
Height	876 mm	1,064 mm	1,491 mm	1,708 mm	2,001 mm	2,441.3 mm	2,943.3 mm
Weight	8 kg	18.5 kg	125 kg	210 kg	375 kg	800 kg	1,225 kg
Material	All Polyurethane	All Polyurethane	Steel housing with polyurethane	Steel housing with polyurethane	Steel housing with polyurethane	Steel housing with polyurethane	Steel housing with polyurethane
Inlet Pipe Size	2 in	3 in	4 in	6 in	8 in	10 in	12 in
Overflow Pipe Size	2 in	3 in	5 in	8 in	10 in	14 in	18 in

FINE SAND RECOVERY WITH CLUSTER CYCLONES

CASE STUDY

A sand processing plant was losing a significant quantity of valuable fine material through its washing circuit. A portion of the recoverable sand was reporting to the settling pond, reducing overall product yield and increasing the solids load on the water-management system.

The Challenge

The customer required a high-capacity classification solution capable of recovering more usable fine sand while maintaining consistent separation under changing feed rates, slurry densities and solids loading. The system also needed to reduce material losses, improve process control and remain easy to maintain during continuous operation.

The Taurian Solution

Taurian MPS supplied a Cyclowash Cluster Cyclone system with multiple hydrocyclones operating in parallel through a common feed manifold. Balanced slurry distribution across the active cyclones helped maintain stable operating conditions, while optimized inlet geometry and controlled internal flow supported efficient coarse-fine separation.

The cyclone configuration, including apex and vortex finder selection, was matched to the required classification duty. Individual cyclones could also be isolated or brought online according to throughput demand, giving the plant greater operating flexibility. Replaceable wear components were incorporated in critical high-velocity areas for easier maintenance and longer service life.

The Result

The cluster cyclone system improved recovery of usable fine sand while reducing valuable material losses to the settling pond. More stable feed distribution supported consistent classification performance across variable operating conditions, while the modular cluster layout simplified inspection and maintenance.

- Improved recovery of valuable fine sand
- Reduced material loss to settling ponds
- Consistent classification across variable feed conditions
- High slurry handling capacity
- Flexible cyclone operation based on throughput demand
- Easier maintenance with modular, serviceable components
- Reduced load on downstream water-management systems

PRECISION CLASSIFICATION.

MULTIPLE MINERALS.



Silica Flour

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Cut to spec, not just fine.
Classification down to a controlled 20–45 µm band, delivered to paint, putty, and foundry-grade silica flour specifications. Particle size at this range directly affects gloss, color consistency, and abrasion resistance in the finished coating.



Barite

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95% passing 75 microns. Every batch.
Classification tuned to API drilling-fluid spec, with batch-to-batch repeatability at the 75 µm cut point. Consistency across batches, not just meeting spec once, is what keeps a drilling-fluid contract.



Calcium Carbonate (GCC)

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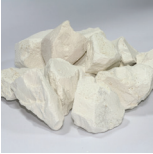
5-micron top cut, held consistently.
Fine classification to a 5–7 µm top cut and D50 of 1–3 µm — the tolerance paper-coating and PVC film filler grades demand. Top cut, not average size, is the parameter that determines coating smoothness and film breathability.



Feldspar & Wollastonite

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Tolerance held, not just size reduced.
Particle grading engineered for the tight, repeatable distributions ceramic glaze and plastics filler formulations require. Distribution width affects melt behavior in glaze and reinforcement performance in filler applications.



Kaolin

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Past the 40-micron wall.
Classification engineered for sub-10 µm cuts, extending output from standard industrial fineness into paper-coating and ceramic grade. The finer cut is what separates commodity-grade kaolin pricing from premium-grade.



Mica

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Flake intact, fines removed.
Delamination and fine classification producing flake-grade output for cosmetic and pearlescent pigment applications. Flake integrity, not just particle size, determines pigment quality — a distinction standard crushing can't deliver.



Talc

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Sub-20-micron, cosmetic-grade white.
Fine classification with whiteness control to sub-20 µm, matching cosmetic and pharmaceutical filler specifications. This grade sits in a different pricing tier from standard plastics or paint-grade talc output.



M-Sand

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Fines held at 5–15%, on spec.
Classification systems that keep fines content within the durability band concrete mixes are specified against. Outside this band in either direction, workability or long-term durability suffers.

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**TAURIAN MPS
HEADQUARTER**

201-C, POONAM CHAMBERS A WING,
DR. ANNIE BESANT ROAD, WORLI,
MUMBAI 400 018
MAHARASHTRA

CONTACT : +91 22 4967 0682

**TAURIAN MPS
FACTORY**

KHASRA NO. 260/267,
LAKESHWARI BHAGWANPUR,
HARIDWAR 247661
UTTARAKHAND, INDIA

CONTACT : +91 86790 22057

