FOR HIGH EFFICIENCY-SEPARATION OF LIQUID AND SOLID CONTAMINANTS AT LOW COST

MULTI-CYCLONE SCRUBBER
For applications requiring efficient dust and liquid removal.

HORIZONTAL OR VERTICAL SWIRL TUBE SEPARATOR
For liquid removal and for small installation foot-print applications.

TYPICAL APPLICATIONS:
- Distribution systems
- Mainline transmission stations
- Industrial process applications
- Gas gathering systems
- Petrochemical plants
- Slug catching
- Absorption processes
- Recip compressor protection

- Constant ∆P regardless of loading
- Maintenance free
- Guaranteed performance
- Built to ASME code and international standards
MULTI-CYCLONE SCRUBBERS

HORIZONTAL OR VERTICAL, PEERLESS HAS THE RIGHT CONFIGURATION TO FIT YOUR APPLICATION.

MULTI-CYCLONE BENEFITS
- High-efficiency liquid and solid removal
- A wide range of flows
- Intermittent flow spikes capacity
- Maintenance free
- Fixed or removable cyclone bundles
- 2” or 4” diameter cyclones available

MULTI-CYCLONE PRINCIPLE OF OPERATION
Multi-Cyclone Scrubbers use centrifugal force to effectively remove solid particles and liquids from gas without moving parts.

(A) Dirty gas enters the Cyclone Tube tangentially at two locations.
(B) The tube housing forces the gas into a cyclonic flow pattern. Centrifugal force throws solids and liquids against inner cyclone tube wall.
(C) Solid and liquid particles drain down the cyclone tube walls and collect at bottom.
(D) Clean gas flows down and then up through the center annulus and exits at the top.

Peerless Cyclone Tube

Peerless uses multiple, small-diameter cyclones arranged in parallel to achieve separation of small and large size particles. Depending upon the application, a bank of cyclones may contain as many as 200. Selection of 2” or 4” diameter cyclones will depend upon the system gas flow rate.

PERFORMANCE GUARANTEE – MULTI-CYCLONE

SOLIDS REMOVAL EFFICIENCIES:
- 100% of 8-micron particles
- 99% of 6- to 8-micron particles
- 90% of 4- to 6-micron particles
- 85% of 2- to 4-micron particles

LIQUID REMOVAL EFFICIENCIES:
- Outlet gas will contain less than 0.10 gallon of entrained liquid per million standard cubic feet of gas passed through the separator
- 100% of all droplets 8-microns in diameter and larger
USE THE TWO-STAGE PEERLESS EXTRACTION DESIGN TO MAXIMIZE LIQUID HANDLING.

SWIRL TUBE BENEFITS
- High-efficiency removal of entrained liquid
- Maintenance free
- Increased liquid handling
- No moving parts

SWIRL TUBE PRINCIPLE OF OPERATION
Swirl tubes create inertial forces on the entrained liquid as it passes around the inlet helicoid.

(A) Contaminated gas enters the swirl tube where centrifugal forces are imposed on the flow.

(B) Liquids are thrown out of the gas flow and against walls of the swirl tube

(C) Liquids fall out of swirl tube at the primary extraction slots

(D) Minor amounts of gas exiting at the primary extraction slots are directed back through the swirl tube through side openings to repeat the separation process.

(E) Clean gas exits the swirl tube.

PERFORMANCE GUARANTEE – SWIRL TUBE
Liquid removal efficiencies:
- Outlet gas will contain less than 0.10 gallon of entrained liquid per million standard cubic feet of gas passed through the separator
- 100% of all droplets 8-microns in diameter and larger
- 99% of 4- to 6-micron droplets
- 98% of 2- to 4-micron droplets
CONSULT PEERLESS FOR YOUR SEPARATION, RETROFIT, AND SPARES REQUIREMENTS.

PEERLESS MULTI-CYCLONE SCRUBBER DESIGN FEATURES
Peerless Multi-Cyclone Scrubbers are constructed to resist many years of abrasive wear and be rugged enough to withstand a wide variety of gas stream applications. In erosive gas applications, the critical parts of Peerless Cyclone Tubes may be constructed of erosion-resistant steel alloys.

Peerless Multi-Cyclone Scrubbers require no maintenance and have a comparatively low initial cost. Vertical and horizontal configurations are available.

PEERLESS SWIRL TUBE SEPARATOR DESIGN FEATURES
Peerless Swirl Tube Separators provide superior performance across an array of applications including condensate removal from gas streams, entrainment removal following a distillation or absorption process, and removal of liquid from inter-stage and final discharge stages in reciprocating compressors.

An aerodynamically designed helicoid maximizes the inertial force utilized to remove entrained liquids. The two-stage liquid extraction system with a gas recycle stream is designed to maximize the liquid handling requirements of this unique system. It is the key to high-efficiency, low-cost separation.