Filtration & Separation

Design • Engineering • Manufacturing • Total Systems Integration
Gases • Solids • Liquids • Filtration Services
**NATIONAL FILTRATION SYSTEMS** is a leader in the supply of process equipment for the natural gas production and transmission, power generation, and general processing industries. Our in-house staff of experienced engineers partner with customers to design unique, cost-effective approaches to your most demanding process needs. The design phase is just the beginning – **NATIONAL FILTRATION SYSTEMS** is an integrated, total-capabilities manufacturer. **NATIONAL FILTRATION SYSTEMS** brings your ideas to life in a deliverable product ready to go online, on time. Our project management team oversees the entire design, approval and production process to ensure that all of your requirements are met. From a small heater package for your aeroderivative combustion turbine to a complete filtration/separation system for your process needs, **NATIONAL FILTRATION SYSTEMS**’ engineers have the solution for you.

**Project Management**

In-house project managers handle every aspect of your project, from initial design and development through manufacturing, delivery and commissioning. Our project managers are your interface with **NATIONAL FILTRATION SYSTEMS**. They will communicate with you and work to ensure that we exceed all of your requirements.

**Chemical Processing**

Natural Gas Production & Distribution
Refining
Power Generation
Petro-Chemical
Industrial Gases
Pulp & Paper
Utilities & Power Plants

**Pre-Assembled Filtration and Separation Systems**

**NATIONAL FILTRATION SYSTEMS** can engineer and build pre-assembled and tested process systems that can be delivered to your job site ready to go. No more lost components. No more waiting to find out allowable nozzle loads. No more looking for the installation manual. Leave all the details to **NATIONAL FILTRATION SYSTEMS** and have your tested, pre-assembled system delivered on time, ready to go!

**Modular Skid Systems**

**NATIONAL FILTRATION SYSTEMS** designs and manufactures modular skids that can easily be tied together once the units arrive at your facility. When your process system is too large to fit on just one skid, **NATIONAL FILTRATION SYSTEMS** has your solution.

- Landfill Gas Conditioning Systems
- Primary Pressure Regulating Systems
- Fuel Gas Conditioning Systems
- Secondary Pressure Regulating
- Compressed Air Systems
- Flow Metering Systems
- Custom Applications
Liquid Filter Vessels
ASME Code and Non-Code simplex vessels and duplex systems for a variety of industrial filtration applications.
Filtration Efficiencies to meet critical applications
Flows to 3000 GPM
Pressures to 5000 PSI

Transfer Valves
HYCOA's patented design is the leader in transfer valve technology. Utilizing the HYCOA “zero-leak” valve ensures positive indication and optimum performance in critical applications.
Construction in CS, 304 SS, 316 SS
Sizes from 1½” to 10”
Easy Retrofit for Kraissl, HILCO and HAYWARD

Filter Systems
Standard and Engineered Side-Arm Filter Systems. Self-contained rugged industrial systems utilizing a variety of cartridge elements and/or filter bags.
Standard Flows to 20 GPM
Stationary or Portable
Hi-Flow and Custom Configurations

Liquid Bag Vessels
Standard Bag housings in a variety of sizes to meet application flow rates. Rugged construction utilizing a complete line of filter bags, strainers and inserts.
Construction in CS, 304 SS, 316 SS
Pressures to 5000 PSI
ASME Code compliance available

Hydraulic & Recirculating Oil Systems
Hydraulic and Lube Oil Systems for critical industrial, automotive and commercial applications. Systems and controls designed to customer specifications and applications.
Operating pressures to 5000 PSI
Flow rates to 3000 GPM
Meets API specifications

Diversion Valves
HYCOA's 3-Way Diversion Valve incorporates an interflow design which requires no external actuator. The valve assures smooth, positive, uninterrupted high volume flow diversion and pump unloading.
Eliminates “system shock & water hammer”
Wide range of sizes from 2” to 20”
Lowers overall piping costs

HYCOA capabilities in filtration, hydraulic system design and construction, diversion valves, air/oil lubrication systems, ISO modules and manifolds and SAE Flanges provides a diverse product line serving industries worldwide.
ANDERSON SEPARATOR (Mechanical Type)
From 1/4" NPT up, ANDERSON SEPARATOR has the mechanical separator for you. These units require no maintenance and deliver unprecedented liquid and solids removal efficiencies. ANDERSON SEPARATOR uses many different types of separating elements in order to meet your needs. If you do not see the arrangement that you need in our catalog, consult the factory for your specific requirement.

Vane Type
ANDERSON's “Pocket Style” vanes are ideal for liquid removal to 8 microns. Available in standard 316 stainless steel and other materials to meet your application requirements.

In-Line Vertical
In-Line Horizontal
Vertical Gas

Centrifugal
ANDERSON's line of standard and custom centrifugal units are excellent for your air and steam separation needs.

Vertical Up Flow
In-Line
Exhaust Heads
Combination Separator Traps
Internal Steam Drum Purifiers

Multi-Cyclone
When your application requires HIGH EFFICIENCIES for both solids and liquids - the AMCS is the solution.

In-Line Vertical
In-Line Horizontal
Vertical Gas

Anderson Separator offers stock mechanical separators for immediate delivery and custom engineered units for your most rigorous specification.
Coalescing Separators
When your application calls for removing both liquids and solids smaller than 3 microns, \textit{ANDERSON SEPARATOR} is your solution. We offer a wide range of media and element configuration to meet your most demanding needs. \textit{ANDERSON SEPARATOR} manufactures its own line of coalescing and filter elements - delivering your requirements accurately, quickly and economically.

\textbf{Vertical and Horizontal Coalescers and Filters}
\textbf{Multi-Stage and Single-Stage Designs}

Filter Separators
\textit{ANDERSON SEPARATOR} is the source for all your filter separation needs. Our unique approach to filters combined with engineering and manufacturing capabilities offer you the most affordable and reliable separator.

\textbf{High Temperature Elements}
\textbf{Small Line-Type Units}
\textbf{Multi-Stage Designs}
\textbf{Custom Designed}

Clark-Reliance Filtration Group’s engineering staff has many years of process engineering expertise across various industries which facilitates the development of unique solutions to your most difficult challenges.
Chemicals • Gases • Fuels • Oils • Steam • Water

Clark-Reliance Filtration Group offers premium-quality, reliable filter elements for all industries. Our liquid and gas filter elements are designed with an emphasis on economy, strength, performance and service life.

Liquid Filter Elements
Micron Ratings from $1 \mu m$ to $25 \mu m$
Beta Ratings $\geq 200$
High Efficiency Dualglass Media
High Capacity Prefilter Layer

Gas Filter Elements
Multiple Layers
Micron Ratings from $0.3 \mu m$
Liquid Coalescing up to 99.98% Removal Efficiency
Custom Sizing for Specific Requirements

Industrial Filter Elements
Replacement Filter Bags
Variety of Bag Sizes and Fibers with Multi-layer Capabilities. Ratings from $1 \mu m$ to $1500 \mu m$
Extensive Range of Standard Sizes and Media. Ratings from $1/2 \mu m$ to $100 \mu m$

Mahle Filters
Mahle Filters: Suction Line, Low-pressure, Medium-pressure, Hydraulic Filtration, Air Application Filtration, Fluid Process Applications and Oil Separators in Compressors.

The use of quality replacement liquid and gas filter elements and associated parts is highly recommended to maintain performance specifications and ensure safe & reliable equipment operation.

for all your filter needs!
The Clark-Reliance Corporation offers a complete and complementary line of instrumentation & control products that are “in-house” and readily available. Industry-leading brand names and premium quality instrumentation ensures total performance and reliability with an emphasis on economy, strength, performance and service life.

Liquid Level Gages
Magnetic Level Gages
Radar (TDR) Devices
Sight Flow Indicators
Magnetostrictive Transmitters
Boiler Trim Controls
Point Level Switches
Valves of all Types
Level Indicators
Side Mounted Float Switches
Level Switches
Side Mounted Float Switches
Capacitance Products
Non-Contact Ultrasonics
Non-Contact Switches
Tuning Fork Switches
Sight Windows & Lights
External Cage Switches
Steam Traps
Ultra Sonic Transmitters
SAE Hydraulic Flanges
Electro-Mechanical Products
Fluid Recovery Pumps
LIQUID PURIFICATION SYSTEMS
FILTERS • HOUSINGS • RENTAL FLEET
FLUSHING SYSTEMS & SERVICES

OIL FILTRATION SYSTEMS
A Clark-Reliance Company

INNOVATIVE SOLUTIONS FOR ALL YOUR FILTRATION NEEDS
Today’s economic and environmental awareness presents unique opportunities for manufacturing and industrial companies around the world. Improving productivity and profits in an ever-increasingly competitive marketplace, while complying with stringent environmental standards can be one of the greatest challenges. Disposing of oil and other fluids is costly, but left untreated, contaminated fluids can lead to lost productivity due to equipment downtime and maintenance problems. By reclaiming fluids (removing all water, particulate and acid contaminants) you can extend the life of your equipment, reduce high maintenance costs and improve productivity and profitability.

**OIL FILTRATION SYSTEMS**

Our highly qualified staff is prepared to work with you every step of the way, resulting in quality systems and peak performance. Call us today to find out how we can provide you with that edge you’ve been looking for to stay competitive in today’s global marketplace.

**INDUSTRIAL FLUID PURIFICATION**

By reclaiming fluids (removing all water, particulate and acid contaminants) you can extend the life of your equipment, reduce high maintenance costs and improve productivity and profitability.

**Vacuum Dehydrators**

The ultimate piece of equipment to effectively remove particulate, water and dissolved gases from petroleum and synthetically based fluids. This system removes 100% of free and emulsified water from oils, and 90% of dissolved water from oils to as low as 20 ppm. It also removes particulate to as low as ISO 12/10/9 with 2.5 Beta₀ ≥ 1000 Filters. In addition, this system removes 90% of dissolved gases. It is available in flow rates from 1–200 gpm, NEMA 4 and 7 Explosion Proof with custom options.

**High Flow Filter Skids**

This system is ideal for rapidly removing particulate contamination from large reservoirs. Furthermore, this system creates turbulent flows in piping for oil flushing and efficiently removes particulate contamination to as low as ISO 12/10/9 levels. Flow rates are available from 50–2000 gpm with many quality features and additional options to increase its capabilities.

**Coalescers**

Designed to rapidly remove water and particulates from diesel fuel, fuel oil and most other hydraulic/lubricating oils. Coalescing technology outperforms centrifuges, are simpler to use, cost less to maintain and are lower in initial purchase price. Designed to run continuously in an outdoor environment, virtually no mechanical maintenance is needed.

**Low Flow Filter Carts**

When a compact and highly portable design is needed to remove particulate contamination and free water from smaller reservoirs, the Low Flow Filter Cart is your answer. Flow rates are available from 1 to 20 gpm with either spin-on or cartridge-style filter elements and water or acid removal filter options. NEMA 4 and NEMA 7 explosion proof options are available as well.

**LTC Transformer Filtration**

Bolt this system onto a transformer and continuously remove particulate (carbon) and water contamination, maintaining high dielectric values. Ideally suited for kidney loop filtration applications.

**Rental Fleet**

We maintain a large rental fleet of systems in Boerne, Texas, for immediate deployment anywhere in the world at very competitive prices. Our professional and technical personnel are available for start-up and on-site training.

**Flushing Services**

We will perform a turnkey flush on your site, providing all pumps, heaters, hoses and filters. Qualified technicians verify the results to required ISO cleanliness codes with our Portable Oil Analysis Kit.

**Fluid Analysis**

Quickly and reliably analyze an oil sample to determine the amount of particulate contamination using the Patch Test Method, assessing an ISO cleanliness code in as little as 10 minutes. Accessory is available for formal reports (camera, adapter, etc.) are also available.
Partial Client List

AEP
Aker Kvaerner
Alcoa
Archer Daniels Midland (ADM)
Austin Energy
Barrick Goldstrike
BF Goodrich - Fairbanks Morse Division
Chevron
ConocoPhillips
Duke Energy/Flour Daniels
ExxonMobil
Freeport McMoran
Flint Hills Resources
General Electric
General Motors - Allison Division
Georgia Pacific
Halliburton
International Paper
Kennecott
NASA
National Electric Company of Nigeria
Newmont Gold
Noble Drilling
Peabody Energy
Procter & Gamble
Royal Caribbean
Saudi Consolidated Electric Company
TXU Electric