



Automatic Liquid-Solid Separator

HYDRAKLEEN® by ENGINEERING FLUID SOLUTIONS

Are you tired of flushing good money down the drain by constantly purchasing water and chemical additives for your industrial process? If you find that conventional filtration and separation equipment does not significantly extend the useful life of your process water, then the patented **HYDRAKLEEN®** Liquid-Solid Separator was designed for you. The **HYDRAKLEEN** technology revolutionizes industrial process filtration and separation. It's easily connected to virtually any process tank:

- Settling & floatation tanks
- Rinse tanks
- Equalization tanks
- Holding tanks
- Spray washer conveyors
- Parts washers
- Immersion/agitation tanks
- Reservoir tanks
- Quench & treatment tanks



The high-capacity **HYDRAKLEEN** relies primarily on gravity for separation. It's a fully-packaged system in all stainless steel or polypropylene construction on an adjustable-height mobile stand, complete with filtration elements, optional pump and

controller. The unit comes fully assembled and installs in less than a day.

With **HYDRAKLEEN**, your product quality is greatly improved at a much lower cost. In applications using **HYDRAKLEEN**, the life of process water and chemical additives has been extended from days to months. This results in excess of **1000% cost savings** over conventional separation methods.



The Solution

"Higher Product Quality at a Lower Cost"

Under conventional processes, water and expensive chemical additives are being consumed in industry at an alarming rate. This consumption is a major problem reflecting high operation and maintenance costs to industry. **ENGINEERING FLUID SOLUTIONS** solved this problem by developing the revolutionary **HYDRAKLEEN LIQUID-SOLID SEPARATOR** that achieves major cost savings, while greatly improving product quality

HYDRAKLEEN dramatically reduces:

- Water consumption by increasing reuse
- Chemical usage by extending useful life of process liquids
- On-site waste treatment
- Municipal waste treatment
- Environmental burden
- Purchasing, administration and inventory costs
- Operation & maintenance costs
- Incremental costs with no consumable media
- Disposal costs
- Product returns and internal rework
- Carryout and carryover of solid load
- Opportunity costs by increasing product throughput
- Energy expense in processing, reheating and recooling refreshed liquids

In conventional industrial processes, water quality degrades rapidly, potentially leaving inconsistent product quality. To maintain quality in these conventional systems, process tanks are frequently dumped and refreshed. Unlike many conventional systems, **HYDRAKLEEN** maintains clean running process liquids, thereby improving product quality at a much lower cost.

How it Works

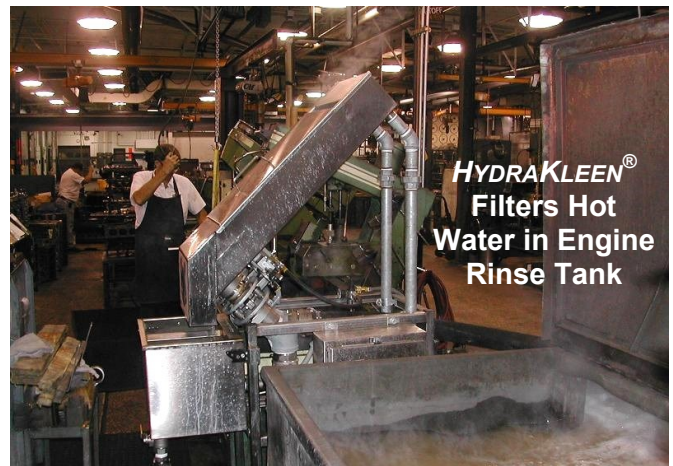
HYDRAKLEEN® runs in two operational modes:



In **normal run mode**, the **HYDRAKLEEN** pumps the solid-containing liquid from a tank or process line, releasing it at the top of a hillside shearing screen. In flowing down the screen, the liquid is filtered by shearing it to the underside of the screen while the solids propel automatically down the screen face under gravity to a collection basket. The filtered liquid flows back to the process tank through a main gravity return line.



In **screen rinse mode**, flow through the main gravity return line is temporarily and automatically stopped by closing a control valve. This redirects virtually all liquid in the liquid-solid mixture down the topside of the hillside screen as sheet flow, which quickly rinses accumulated solids into the receiving filter basket hung in a sedimentation box. Liquid level in the filter basket lowers as it flows under gravity from the sedimentation box to the process tank. Adjustable timers within the controller set screen rinse frequency and duration.



Product Specifications

- **Principle of Operation:** gravity
- **Assembly:** stainless steel filter elements on mobile skid w/ optional pump & controller
- **Footprint:** 30 in² (75 cm²) and larger
- **Height:** adjustable
- **Weight:** 500lb (227 kg); 950lb (431 kg) crated
- **Packaging:** comes fully assembled; uncrated in less than 10 minutes
- **Installation:** less than one day; no specialty tools required; easily moves on wheel casters
- **Hydraulic Capacity:** 2000 gpm (126 L/s) standard or larger on special order
- **Hydraulic Connections:** 4 hydraulic interconnections with quick disconnect end fittings
- **Pump (optional):** 2" self-priming trash pump (larger pump sizes & passage sizes available)
- **Drive (optional):** 3 hp, stainless steel wash-down motor (higher hp drives available)
- **Electrical Power Input:** 240 or 480 VAC, 3-phase, 60 hz (alternative voltage, phase and frequency available)
- **Control Voltage Output:** 24 VDC or 120 VAC
- **Controller :** NEMA 4X 304 s/stl enclosure
- **Particulate Removal:** nominal < 10-micron (.01 mm); absolute = 75-micron (.075 mm)

Equipment Options

Separation Capabilities

- Magnetic Separation (ceramic or rare earth)
- Bactericidal
- Oil-Water Separation

Hydraulics

- Tank blowdown - manual control (Figs. 1 & 2) or automatic control (Figs. 3 & 4)
- Filter-to-waste

Pneumatic

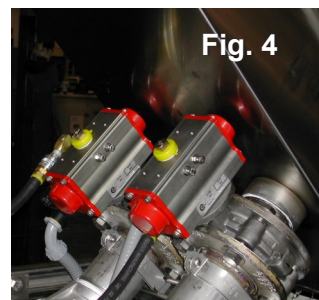
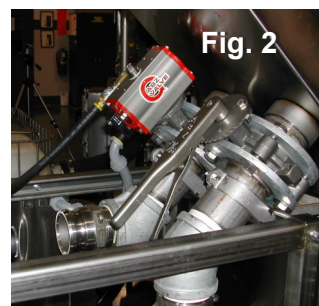
- Combination air filter/regulator manifold

Controls

- Sedimentation box proximity switch
- Controlled locally or by master controller

Materials

- Mill grade or polished stainless steel (304 or 316)
- High temperature materials
- Alternative materials (polypropylene)
- Food grade/sanitary construction



Features

Financial

- Increases product throughput
- Improves product quality
- High capacity to footprint ratio
- Short payback period - high ROI
- Zero-discharge

Operation

- Handles extremely heavy loading rates (in excess of 50% solids)
- Greatly reduces total suspended solids
- Dramatically extends useful life of process water and chemical additives
- Used on process liquids other than water
- Solids and/or liquids reused and reclaimed
- Automatic self-cleaning
- Significantly reduces waste treatment costs
- Used as a filter and/or separator

Maintenance

- No consumable filtration media
- Excellent pre-filter
- Eliminates obstructed nozzles in spray systems
- Filter elements easily removed & exchanged
- No auxiliary spray, vibratory or mechanical cleaning systems
- No strict physical property requirements
- No strict pressure or flow requirements
- Easily installed with no formal training
- Open design allows easy access
- Retrofits or outfits as original equipment
- No high frequency wear parts - minimal moving parts
- Controls adjustable and easily understood
- Equipment options quickly integrate





Automotive Remanufacturing

Applications:

HYDRAKLEEN is used in industrial, municipal and commercial applications. It embodies a bold new all stainless steel or polypropylene design that truly solves industrial problems as opposed to transferring problems. Employing several integrated filter elements that do not degrade over time, the fully packaged unit offers consistent and unparalleled performance. **HYDRAKLEEN** takes the frustration out of filtration and separation.

Testing: Sample testing is conducted on a full scale **HYDRAKLEEN** - your test results are documented and available on videotape. Leased units are available for on-site performance testing, and a portion of the lease fee may be applied toward purchase.

Product Warranty: **HYDRAKLEEN** systems are warranted to be free from defects for a period of one (1) year from the date of installation or 18 months after shipment, whichever occurs first.

Performance Guarantee: All products and services offered by **ENGINEERING FLUID SOLUTIONS** are guaranteed on quality and performance. Performance guarantees are written to meet owner-driven specifications.



Automatic Self-cleaning



Product Registration

HYDRAKLEEN is a patented technology registered by **ENGINEERING FLUID SOLUTIONS**, with the U.S. Patent & Trademark Office (US Patent Nos. 6,986,849; 7,303,672; 7,455,784; 7,799,231). The **HYDRAKLEEN**® name and logo are registered trademarks owned by **ENGINEERING FLUID SOLUTIONS (EFS, LLC)**

Contact **ENGINEERING FLUID SOLUTIONS** and let us show you how to improve product quality at a much lower cost. Product sales, service and support are provided by qualified **HYDRAKLEEN** distributors. This brochure may be downloaded and printed from the **EFS** website.

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