VIVEX

Coolant Filtration
and Purification

GLOBAL LEADERS / SINCE 1982

Purification of Fluids
in metalworking

Vast Experience

Established in 1982, VIVEX have developed and manufactured systems for purification and management of process fluids in the metal cutting industry. Based in Tumba, Sweden, their systems range from small mobile process fluid purifiers with a flow rate of 6 litres per minute to large central systems with a throughput capacity of 8,000 litres per minute.

Market Leading Equipment

VIVEX offer metalworking industries unique patented systems for environmentally friendly and effective purification and management of process fluids and waste products, which gives a better working environment, cost savings and increased productivity. VIVEX systems work with gravity separation in lamella packages, and self- cleaning permanent filters, which gives excellent purification quality and high throughput capacity. The systems use no consumables, require a minimum of maintenance, and have low energy consumption.

VIVEX equipment handle most types of process fluids in the metal working industry including: water based emulsions in cutting and grinding coolants, washing fluids, neat oils for hard metal grinding and hardening oils.

Support & Maintenance

VIVEX systems perform a 3-phase filtration operating process and also deliver consumable- free technology. VIVEX are able to offer a range of product maintenance packages for customers utilising their equipment. This can be on a non-recurring basis or via a long term preventive maintenance contract. They also provide remote 24/7 on-line service/monitoring.

Trusted Globally

Our Global Customers Include:

- Volvo
- Sandvik
- Seco Tools
- ABB
- SSAB
- Xylem (ITT Flygt)
- Atlas Copco
- Stora Enso
- Morakniv
- Uppåkra Mek
- GKN
- De-Puy
- Siemens
- Caterpillar
- Martin Baker
- McLarens
- Johnson & Johnson
- Danfoss
- Grundfos
- Vestas
- Assa Abloy
- *John Deere*
- Metso
- *Jame-Shaft*
- Outokumpu
- Peugeot
- Essilior
- Condesa
- Aceralia
- Swarts Group
- Victorinox
- BAIC & Alstom

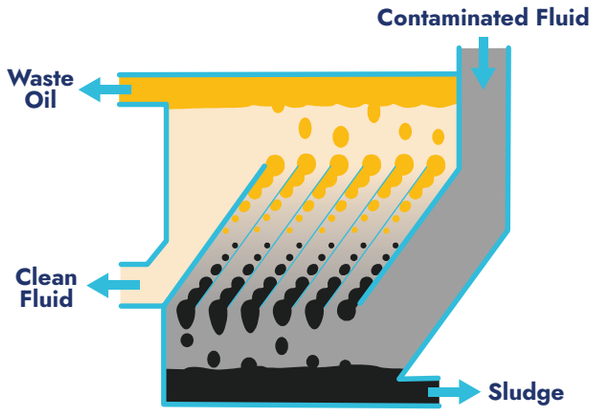
How does it work?

The working principles of VIVEX separators are based on settling of contaminants, such as tramp oil and solid particles in the coolant, by gravitation forces.

01 Lamella Separators

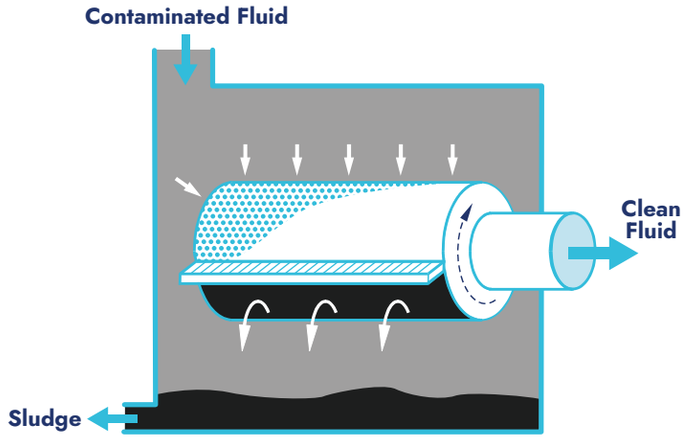
The Lamella Separators are used in 3-phase separation, such as removing tramp oil and solid particles from the coolant.

The contaminated fluid is fed into a lamella package with tilted plates in which tramp oil as well as solid particles are separated from the coolant.



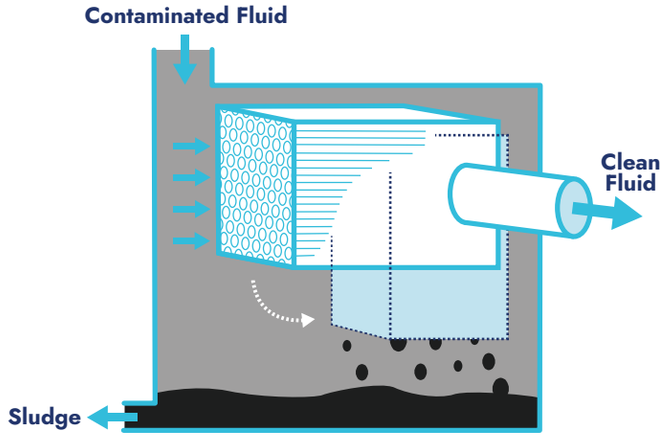
02 Drum Filtration

Drum filtration is the most effective way to separate particles of density similar to the process fluid. Drum filtration is also useful in purification of large fluid flow rates. The contaminated fluid is fed into a cylindrical drum with filter cloth on the surface area. The solid particles in the process fluid are trapped on the filter mesh. The filtrate is discharged from the centre of the filter drum. The clogged filter cloth is cleaned when the filter drum rotates against a brush.



03 Micro-particle Separation

This separation method is used when very small particles are to be separated. When contaminated fluid flows into a cassette with tubes of small diameter in horizontal position, solid particles in the fluid settle on the surface of the tubes. The cassette is tipped from horizontal to vertical position with regular intervals to discharge the accumulated sludge out of the tubes.



Flexible Solutions

VIVEX systems are extremely flexible in meeting various customer requirements.

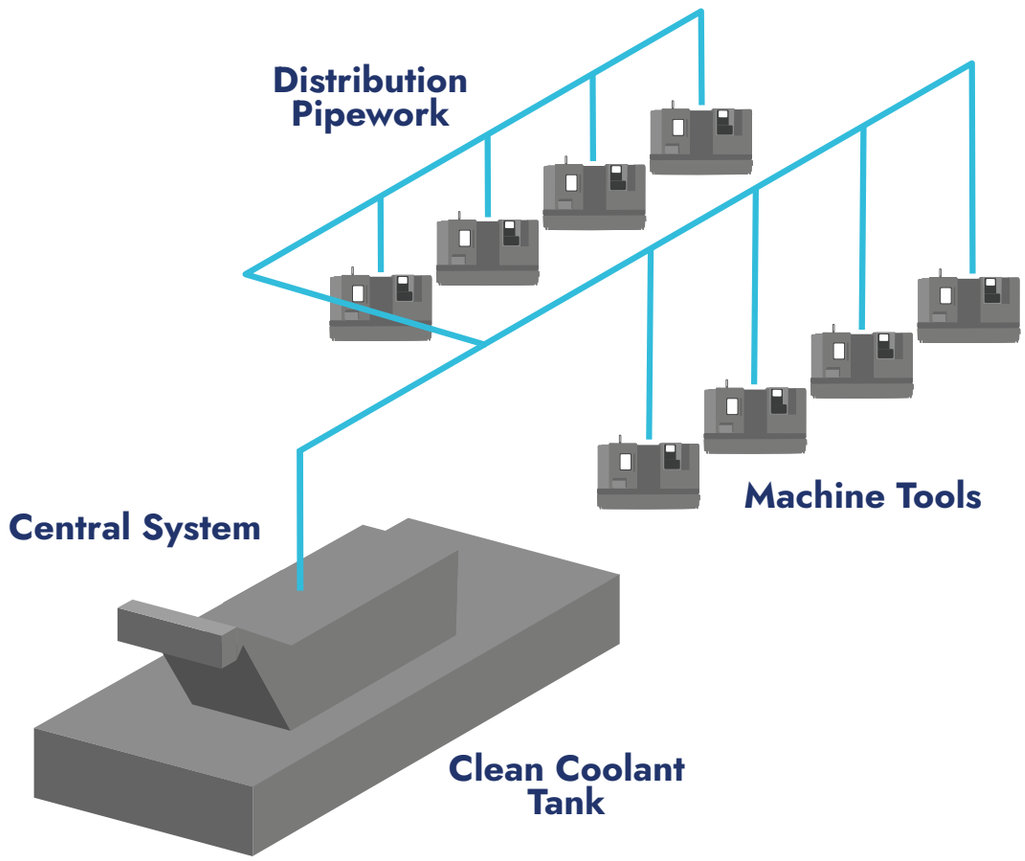
Coolant Management System

Solutions range from a simple bypass system connected up to five machines, to a full-flow central filtration system linked to a large number of machine tools with very high flow rates. By simply connecting the machine tools to a central distribution pipework system, the coolant from a large number of systems can be managed centrally via one filtration unit. Large and expanding workshops can easily bolt machines onto existing Vivex systems that can be adapted to meet the growing volume demand.

Process Control

All VIVEX standard fluid management systems include process control systems and automatic fluid topping-up systems automatically keeping a constant working fluid volume in the system.

We also offer a PLC-based Coolant Condition Monitoring (CCM) system for measurement of process parameters such as pH, conductivity, temperature, dilution rate and consumption. The process data can be viewed with wireless connection and/or over the Internet.



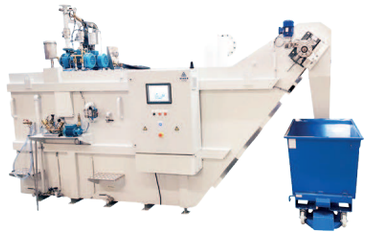
01 Lamella Separators

Dinosaurus
VXSK-A

Throughput capacity
100 - 10,000 litres per min

Seperation Quality
Particles down to 25µm

A central coolant management system for water based cutting coolants. The system includes a built-in 3-phase lamella separator for separation of tramp oil, graphite and other solid particles out of the coolant. The coolant management system includes: self cleaning 3-phase lamella separator, dirty tank, clean tank, supply pumps, sludge conveyor and automatic top up system.



- Automatically collecting, concentrating and removing the contamination from your coolant system.
- Lean Maintenance and no Consumables
- Ideal for purification of metal cutting coolants
- Can remove metal chips, tramp oil (<1%), sludge, graphite out of cutting coolant contaminants

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Bison
VXSK-A 300

Throughput capacity
Serves up to 25 Machines

Seperation Quality
Particles down to 25µm

An automatically operated central unit for management of water based cutting coolants. This unit includes a 3-phase lamella separator in which solid particles and tramp oil are separated and a clean tank for the purified fluid. The unit is equipped with a supply pump delivering the purified fluid to the machine tools. An automatic coolant topping up system keeps the fluid system with constant volume and dilution rate.

- Lean maintenance, provided by automatically operating system and the separation that does not require consumable materials
- Automatically discharge of separated wastes; tramp oil and solid particles
- Excellent performance in tramp oil separation (<1%)

Mustang
VXCS

Throughput capacity
Serves up to 10 Machines

Seperation Quality
Particles down to 25µm

This central coolant management system is similar with the Bison unit, but it has a smaller capacity. Compact design requiring a minimum of floor space (L x W x H = 2.5 x 1.3 x 1.7 m).

- Automatically discharge of separated wastes; tramp oil and solid particles
- Excellent performance in tramp oil separation (<1%)

Penguin

VXKN-M

Throughput capacity
Up to 300 litres per hour

Seperation Quality
Particles down to 25µm

A mobile separator in stainless steel with nearly no maintenance and no need for consumables except 10 litres of compressed air per day for self-cleaning of the separator. This machine includes a 3-phase lamella separator for separation of tramp oil and solid particles out of the process fluid (e.g. washing liquid and cutting coolants). The system is built on a cart and includes a floating suction device as well as hose with quick connections to the separator.

- This unit is used for by-pass purification of industrial washing liquids and cutting coolants
- Excellent performance in tramp oil separation (<1%)

Also available: Penguin Stationary

STATIONARY SEPERATOR
VXKN-A

Throughput capacity
Up to 2,000 litres per hour

Seperation Quality
Particles down to 25µm

A stationary plant made in stainless steel with 3-phase lamella separator for separation of solid particles and tramp oil from the process liquid. Lean maintenance system with automatic operation, cleaning, and waste handling.

Benefits

- No consumable material, filter paper or other filter aids are needed
- Runs continuously throughout production regardless of the purity of the process fluid
- Automatic self cleaning system
- Separates tramp oil and solid particles continuously in one operation.
- Less machine tool down time since periodic cleaning of machine tools sumps is eliminated

02 Drum Filtration

Dinofilter
VXPC-A

Throughput capacity
100 - 10,000 litres per min

Filtration Quality
Standard: 25µm*

Description

Dinofilter central coolant and neat oil management system consists of one or several filtration units (cassettes) which are assembled in the central unit. The contaminated fluid from the machining process enters the central unit into the dirty tank (filter tank). The contaminated fluid is sucked trough each filter cassette. The purified fluid is pumped to the built-in clean tank.

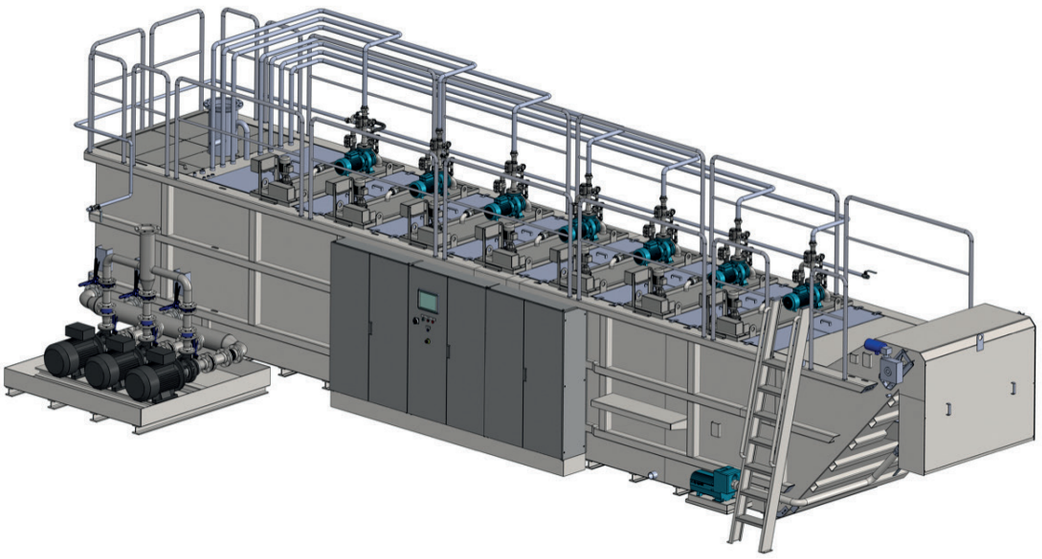
The filtrated sludge is collected in the out side of the filter mesh. The filter mesh is manufactured in acid prof stainless steel for extended life time. The number of filters is model dependent. Each filter is independently performing the filtration function. If needed for any reason a filter cassette can be physically removed from the tank any time during on going production.

Application

- Grinding, including: steel and various other metals
- Aluminium cutting

*(Cleanless can be lower than 25µm but this may affect the flow rate capacity)

Technical Diagram



Benefits

- No filter aids such as paper or precoat filtration powder is needed for the filtration. So no need to worry about getting rid off any other waste than the ones from your processes
- Simple construction with limited moving parts, reducing maintenance requirements
- Dinofilter has a modular structure, you can remove one cassette in order to perform maintenance, while the unit can still perform its filtration function
- The Dinofilter has outstanding efficiency in clarifying fluids containing fiber type solid materials, such as grinding swarf or chips from steel cutting e.g. aluminium machining
- Continuous filtration of solid particles from the fluid.
- Simple system with limited operator input requirements
- Integral automatic cleaning system
- No basement or trench system needed
- Automatic top up system
- Automatic level control of the complete system
- No consumable materials
- Automatic separation of contamination
- Low energy consumption
- Constant fluid quality
- Reduced disposal costs
- Less machine down time due to machine tool clean outs

Rino

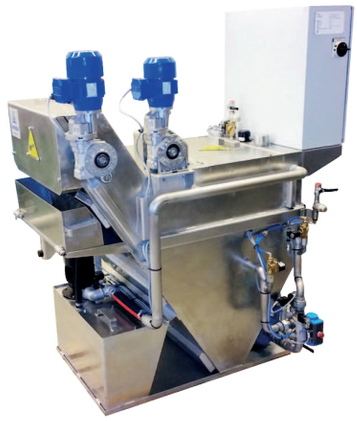
VXPY-A

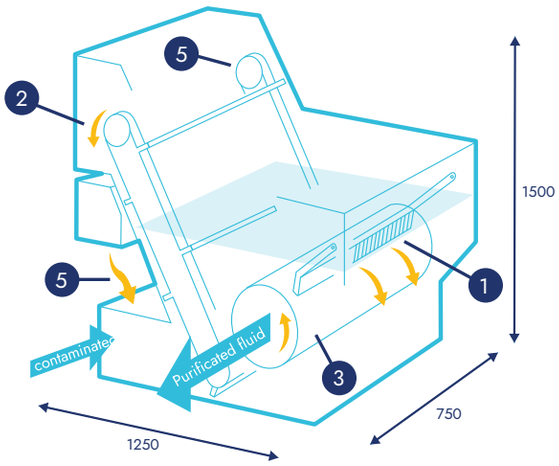
Throughput capacity
100 - 300 litres per min

Filtration Quality
Particles down to 25µm

Description

A paper-free filter system intended for purification of grinding fluid in single grinding machine. The system is complete with automatic topping-up and evaporation cooling. Includes filter mesh of stainless steel cloth. Automatic filter cleaning and sludge dewatering.





Function

1. Self-cleaning filter drum
2. Automatic scraper works to remove particles
3. Permanent stainless steel filter
4. Recycling of grinding & cutting fluid
5. Removable scraper unit

Benefits

- Permanent self cleaning filter cloth of stainless steel.
- Minimum floor space required; Vertical tank design
- Automatic sludge dewatering and discharge
- Evaporation cooling (lowers the temperature up to 3°C)
- Removable scraper even during operation
- No consumable materials required with low energy consumption
- No basement or trench system required
- Unique feed tank and pump design allows simple connection to very low fluid outlets
- Automatic top-up system, level control of the entire system and automated separation of contamination
- Constant fluid quality and reduced disposal costs
- Less machine down time due to machine tool clean outs
- Optional tramp oil separator

03 Micro-particle Separation

Decantor

VXDC-A

Throughput capacity
10- 2,000 litres per min

Seperation Quality
Down to 10µm (option 3µm)

Description

A separator enabling separation of particles, sizes down to 10µm (option 3µm) Periodical settling of fluid under motionless liquid volume in a lamella package, automatically discharges decanted fluid and separated wastes. Internal cleaning system on the lamella package is also automated as required. The unit is a complete package: Lamella separator, dirty tank, clean tank, supply pumps and automatic topping up system.

Application

- Hard metal grinding

Benefits

- The lamella separator has an automatic self-cleaning system
- The sludge is collected directly into standard sludge barrels
- The unit is fully automated, with nominal maintenance: Lean production and zero consumables

TEKNOMA

VIVEX

For more information visit **www.vivex.se**

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