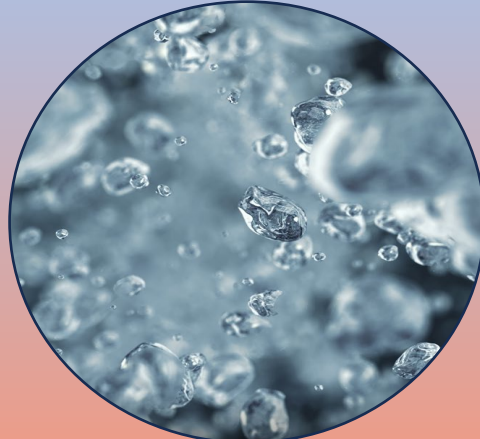
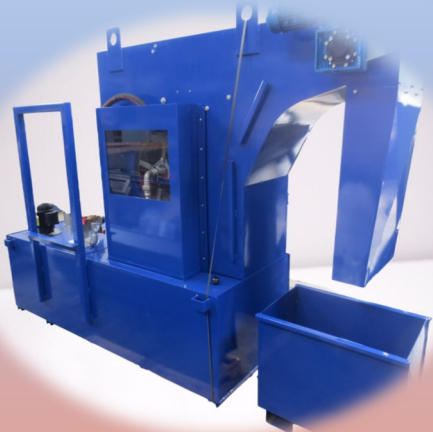
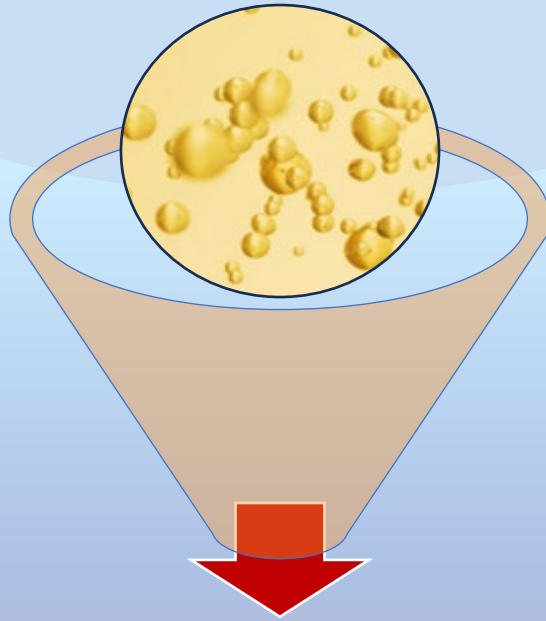




COOLANT FILTRATION



WHY FILTERING COOLANT ?



The goal of filtration is to transform coolant into a new raw material that can be reused to save on components, thereby contributing to green economy and creating a healthy environment. Filtration is a crucial aspect of the entire coolant system, significantly impacting the efficiency of machine tools and therefore operating costs. But how can these costs be reduced? Primarily by **extending tool life, limiting maintenance, and reducing the required amount of cutting fluid.**

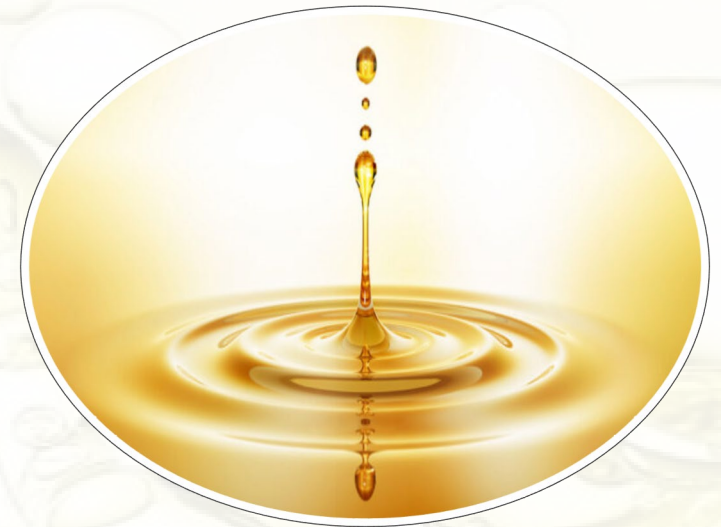
There are various types of filtration systems, from the more traditional band gravity systems to the most modern and sophisticated superfiltration systems. **Selecting the right filtration system for coolants is a delicate task.** We're glad to help you choose the most appropriate solution for your business.

Cutting fluid must be clean enough to ensure quality machining and an efficient process. The question is: what makes the fluid dirty? And how is filtration measured?

The **primary culprits for contamination** in cutting fluids are metal dust and chips, hydraulic oils, environmental dust, sand, paint residues, and even bacterial colonies that thrive in dirty, poorly oxygenated fluids.

Hydraulic oil, for example, creates a thick surface film that prevents air from passing through the fluid, thus creating a favorable habitat for anaerobic bacteria and causing foul-smelling fumes. Other pollutants can settle in tanks or float and be carried around the circuit by fluid turbulence.

It has been estimated that **machine tool downtime** is largely due to inadequate lubrication and cooling and can account for up to 10% of lost production.



Today, coolants are required to:

- **pollute less or not at all**
- **help reduce CO2 emissions**
- **be reusable or easily disposable**
- **ensure a healthier environment**
- **be more efficient.**

Extending tool life is closely linked to fluid quality and filtration degree: a dirty coolant, i.e., contaminated with microscopic particles smaller than 20 µm, will generate an **abrasive effect** similar to that of waterjet cutting. A contaminated fluid causes various types of damage, primarily rapid wear of tool, which then no longer operates under ideal conditions, with obvious repercussions on process quality and efficiency.

The unit water requirement in liters per kW depends on the machining operation, and there are obviously many variables (chip removal volume, material, tool type, machining operation, etc.), but based on experience, the following values can be considered:

Chip removal: 5-7 liters/minute per kW

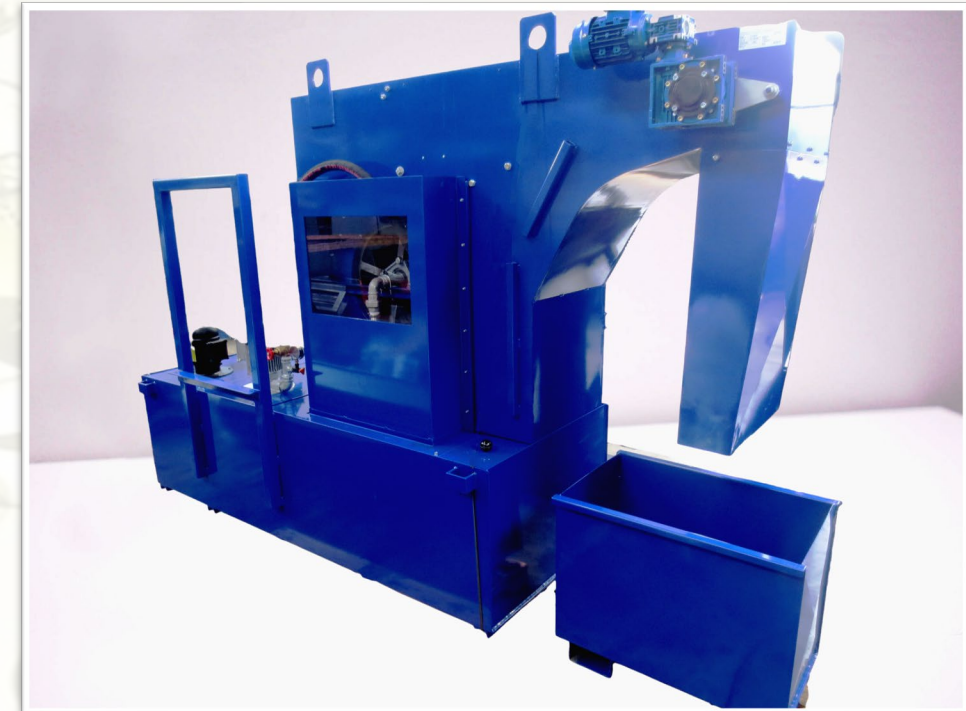
Grinding: 12-15 liters/minute per kW

We've estimated that workshops with more than 20 machine tools operating 24 hours a day can consume an average of 15,000 liters of new oil per day. Filtering used oil in these cases can save a significant amount of money within a year, thus give a quick payback.

Since vegetable or synthetic coolants are **highly toxic** and can be **carcinogenic**, coolant filtration systems are becoming increasingly important, due to implementation of new EEC directives regarding ecological aspects in workplaces and disposal of hazardous waste, which have increased the penalties in this area.

Each filtration system is unique because it offers specific **filtration degrees**, has **disposable** or **permanent components**, and requires suitable conditions. However, they all aim to purify machine coolants **to improve process precision, extend tool life**, and **generate huge savings** through the recovery of used coolants.

The filtration systems here offered can be designed for plug&play installation on a single machine tool, can replace existing systems, or can be custom-designed for multiple machine tools.



COOLANT FILTRATION - BENEFITS

COOLANT RECOVERY SAVINGS : used coolants become a new raw material to be used instead of purchased ones

POLLUTANT DISPOSAL SAVINGS: filtering oil means disposing of less or no oil at all, saving on disposal costs for this hazardous waste

IMPROVED PROCESS ACCURACY: filtering coolants to the right filtration degree allows tools to perform highly precise machining operations

TOOL LIFE EXTENSION: Working with properly filtered coolants reduces tool wear over time

LABOR SAVINGS: with filtered coolant relaunch directly into machine operators do not need to manually refill tanks anymore

NO WASTE: taps are replaced with manually or automatically operated valves which, unlike the former, cannot be left open due to carelessness

QUICK INSTALLATION: each device is connected via plug & play

HEALTHIER AND CLEANER ENVIRONMENT: all tanks are closed and liquid-tight, so they prevent any fumes from leaking into the air

SAFETY: operators are prevented from inhaling or coming into contact with substances known to be harmful to health

ECOLOGY: special accessories installation prevents bacterial growth due to stagnant liquids

WIDE RANGE OF MODELS: various filtration systems are available depending on materials and customer needs.



COOLANT FILTRATION SYSTEMS

MAGNETIC FILTER



GRAVITY BAND FILTER



SELF-CLEANING DRUM FILTER



CENTRALIZED SYSTEM



HIGH QUANTITIES CAPTURE OF LARGE-GRAINED POLLUTING PARTICLES

✓

✓

✓

✓

HIGH QUANTITIES CAPTURE OF FINE-GRAINED POLLUTING PARTICLES

-

✓

✓

✓

HIGH PERFORMANCE EVEN WITH NEAT OIL

✓

✓

✓

✓

FULLY AUTOMATIC PROCESS

✓

✓

✓

✓

SELF-CLEANING

✓

-

✓

✓

LOW MAINTENANCE

✓

-

✓

✓

WASTE MATERIAL

-

✓

-

-

COMBINABLE WITH OTHER FILTRATION SYSTEMS

✓

✓

✓

-

MODULAR

✓

-

✓

✓

LOW ENERGY CONSUMPTION

✓

✓

✓

-

UNEXPENSIVE

✓

✓

-

-

DURABLE AND HIGH-PERFORMANCE COMPONENTS

✓

✓

✓

✓

MAXIMUM EFFICIENCY EVEN WITH HIGH FLOW RATES

✓

✓

✓

✓

ECOLOGY AND HEALTHIER ENVIRONMENTS

✓

✓

✓

✓

NO OIL AND NO OTHER HARMFUL SUBSTANCES EMISSIONS

✓

✓

✓

✓

CUSTOMIZATION

-

-

-

✓

MAXIMUM REGENERATION OF COOLANT WITHOUT WASTE

✓

✓

✓

✓

NO MORE LOCAL MACHINE TANKS

-

-

-

✓

NO MORE FORKLIFT RUNS FOR MUD BOXES DISCHARGE

-

-

-

✓

LABOR SAVINGS

✓

✓

✓

✓

LATEST GENERATION REMOTE ELECTRIC PANELS

✓

✓

✓

✓

OPTIMIZATION OF SENSORS, ALARMS AND SAFETY

✓

✓

✓

✓

CUTTING-EDGE DIAGNOSTICS

✓

✓

✓

✓

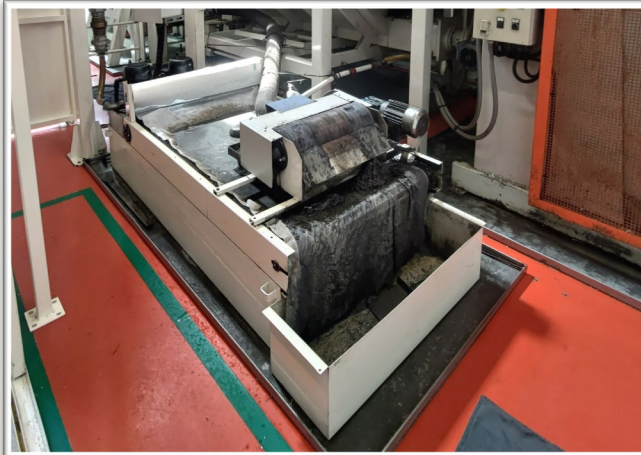
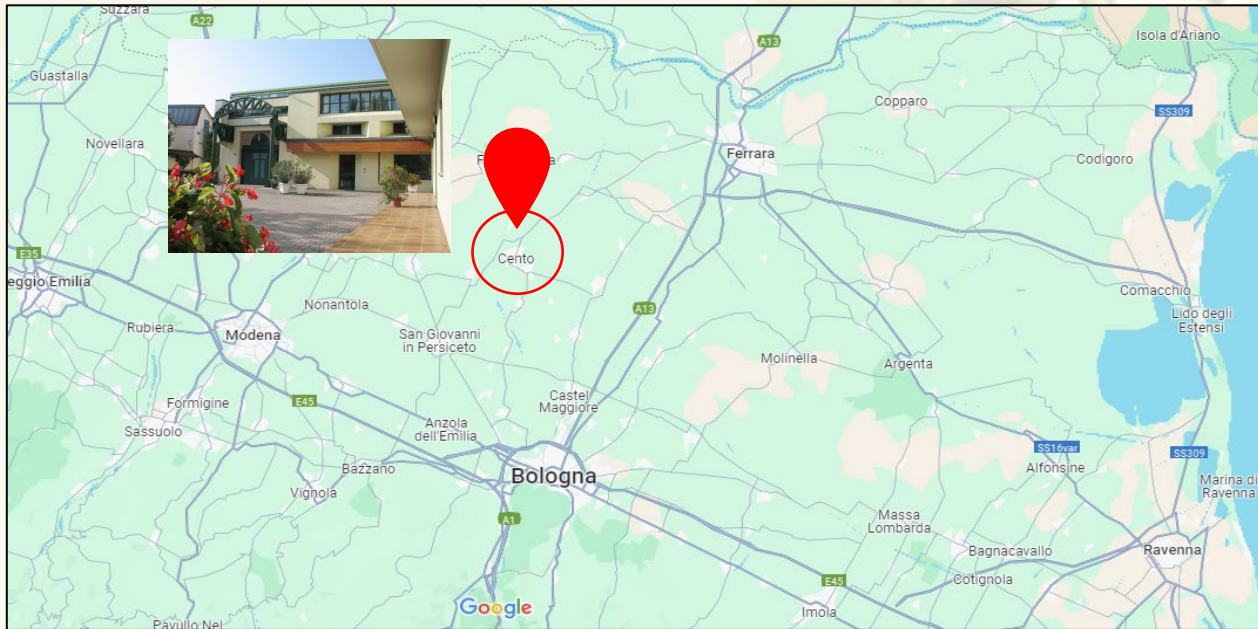
WIDE RANGE OF ACCESSORIES AVAILAIBLE

✓

✓

✓

✓



Products

- Centralized screw systems for metal chips transport
- Centralized pneumatic vacuum systems for metal chips transport
- Chips treatment and oil recovery kits
- Apron belt conveyors
- Hinged belt conveyors
- Machine tools evacuators
 - Hinged belt evacuators
 - Screw evacuators
 - DUO evacuators
- **Coolant filtration**
 - Magnetic filters
 - Gravity band filters
 - Self-cleaning drum filters
 - Centralized filtration systems
- Shredders
 - Single-shaft shredders
 - Double-shaft shredders
 - Vertical shredders
- Centrifuges
- Cart lift dumpers
- Chip storage silos

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