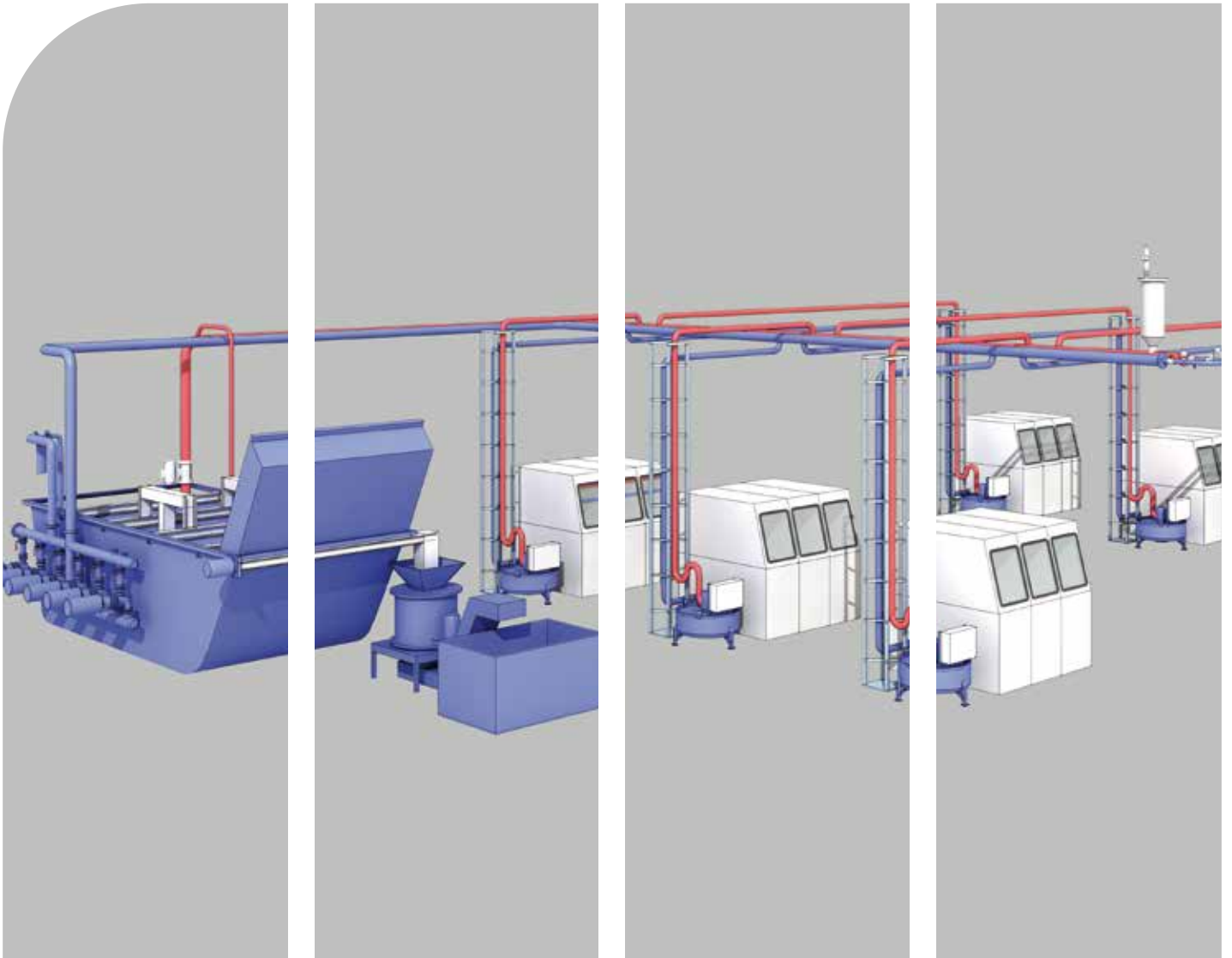
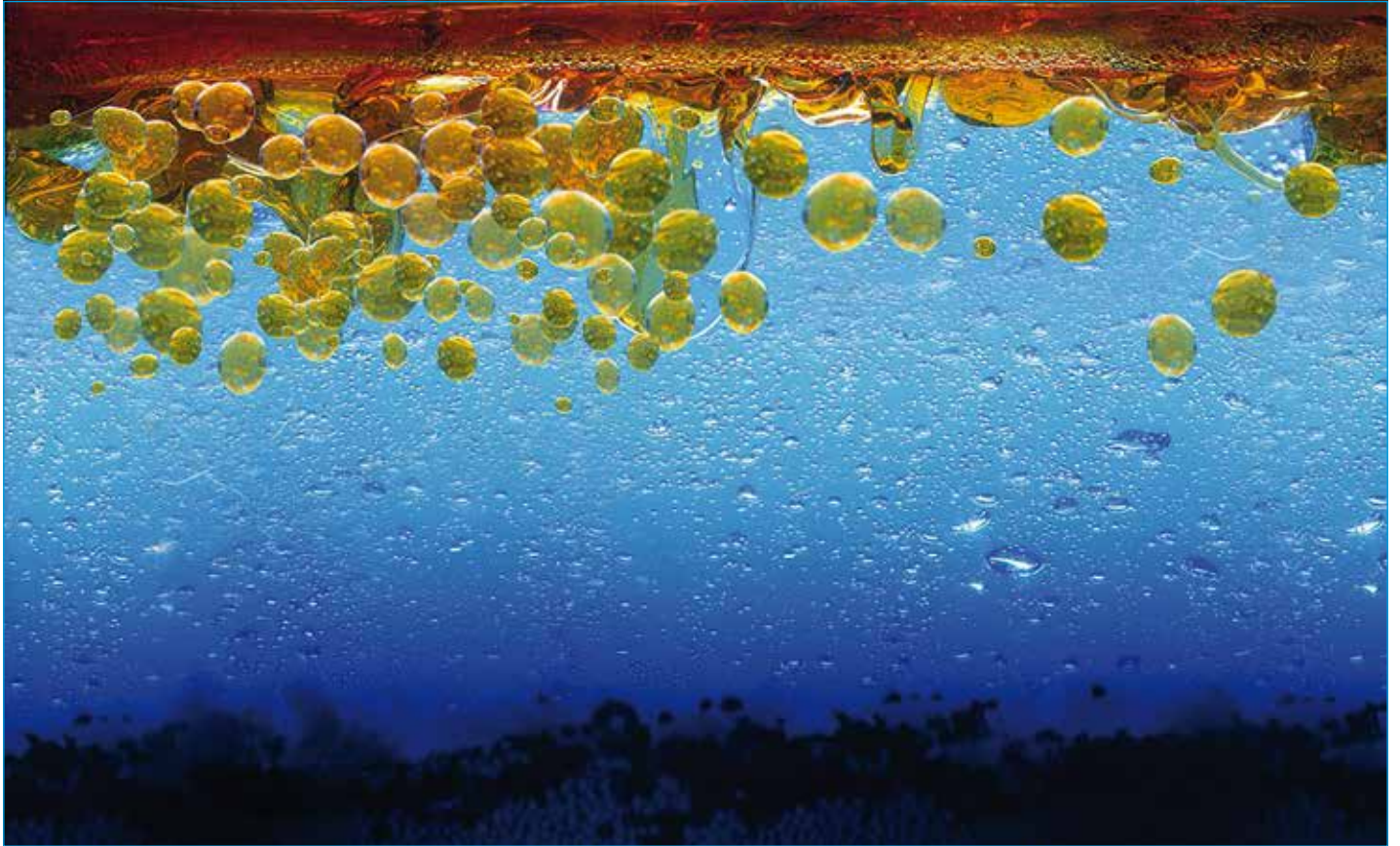


CENTRAL FILTRATION SYSTEMS



The right filter for every application

ALWAYS THE RIGHT FILTER TECHNOLOGY



FROM **10 μ** TO
30,000 L/MIN

Mayfran designs and constructs complete, customised filtration systems for handling coolant and chips. These systems can process the desired flow volumes with one or more modules. A large selection of filtration technologies, such as gravity, pressure and vacuum filters means that we will always find the solution to match your needs. Paper belt filter or endless belt designs are available.

Years of experience in designing and implementing central filtration systems, established project management and engineering resources and a huge range of filtration technologies make Mayfran the safe choice for your coolant filtration solution. We can also incorporate the unique Viavent over-head pump system and chip transport and processing solutions, which allows us to deliver an optimised chip and coolant processing system, helping you reduce operating costs.

CUSTOMISED SYSTEMS SOLUTIONS



*MCF
precoat filter*



Pressure belt filter



*MVF
vacuum filter*

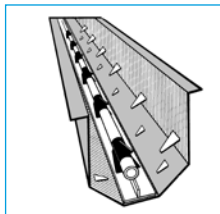


VERTIDRUM

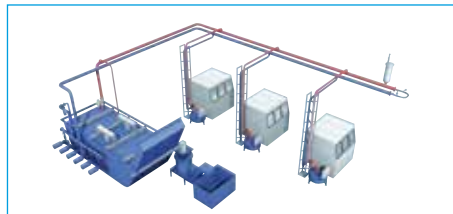
CENTRAL FILTRATION SYSTEMS

MAYFRAN offers a wide range of filtration systems that are tailored to meet your individual needs.

- Precoat filters
- Pressure belt filters
- Vacuum filters
- Gravity filters



*Power-Trof® push-
bar conveyors*



VIAVENT® overhead system

OVERHEAD/UNDERFLOOR SYSTEMS

The MAYFRAN Viavent® overhead pump system or the MAYFRAN underfloor pump system are closed loop systems for the automatic recirculation of chips and coolants from machine tools through the central filtration systems.



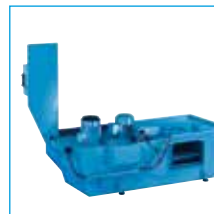
*MTCS Magnetic
rod separator*



Preseparator



RefillMatic®



Pump stations

COMPONENTS

- Magnetic rod separator
- Preseparator
- RefillMatic® – coolant conditioning
- Pump stations



Chip processing



Chip crusher



Centrifuges



Chip conveyor

CUSTOMISED MODULES

- Chip processing systems
 - VBU chip wringers/centrifuges
 - LCB pusher centrifuges
 - Chip crushers
 - Vertical chip crushers
 - Chip conveyors

HIGH FILTER QUALITY REQUIREMENTS

MCF PRECOAT FILTER (independent flushing)

Compact precoat filtration system for individual or group supply for hard grinding applications.

TECHNICAL DATA:

Capacity: 1,000 l/min. per module
 Filtration quality: $\leq 10 \mu\text{m}$
 Height: 400 cm
 Floorspace required: 250 x 340 cm

THE BENEFITS:

- Modular construction
- Easy-to-connect
- Low space utilisation
- No consumption of auxiliary filtration materials
- Energy efficient
- High average grade of filtration
- Low residual contaminant content under 20 ppm
- Change of location possible within one week
- Additional modules can be connected and controlled via the Master Control Unit.

FIELDS OF APPLICATION:

- Wherever maximum filter quality is required
- Hard grinding
- In case limited space is available

DESIGN:

- Individual module system
- Central pressure cartridge filter with independent flushing
- Tank design for clean and contamination tanks
- Full flow cooling with plate heat exchanger
- Regulation of the supply and filtration quantity as required
- Modules can be coupled to a multi-module system



Efficient, compact, modular – the MAYFRAN MCF filter



Modular construction and easy to connect

MAYFRAN PRESSURE BELT FILTER



Pressure belt filter system consisting of several filter modules

PRESSURE BELT FILTER

MAYFRAN pressure belt filters are used for cleaning and processing coolants in the metals-processing industry.

Fields of application: grinding and turning

Type of chips: Fine, short, swarf, aluminium chips

Output: up to **12,000 l/min.** per module

Degree of purity: up to **10 µm**, depending on the type of chips and contamination

THE BENEFITS:

- High throughput, even without the use of auxiliary filter materials
- Continuous supply with purified coolant without downtimes
- Good drying of the filter cake
- Maintenance friendly and low-wear
- Stable and robust construction
- Economic thanks to the high degree of regeneration



Lifting and pumping station



Central chip removal by MAYFRAN chip conveyors

THE SAFEST WAY TO PREVENT FAULTS



MVF vacuum belt filter

MVF VACUUM BELT FILTER

Field of application: for all chip types
Chip types: for short chips
Output per module: up to **15,000 l/min.**
Degree of purity: **from 15 µm**

THE BENEFITS:

- High reliability
- Low operating costs
- Flexible installation options
- Modular construction



Control cabinet and pump supply



Pump station for machine supply

MODULAR FILTRATION SYSTEM FOR CENTRAL FACILITIES



VERTIDRUM filtration system

VERTIDRUM VACUUM FILTER

Fleece-free coolant filtration

Field of application: cutting and machining steel, grey cast iron, brass, copper and aluminium

Chip types: for short and long chips
Output: coolant quantity **up to 10,000 l/min. per VERTIDRUM module**

Degree of purity: **20–50 µm**

THE BENEFITS:

- Fleece-free filter
- High reliability
- Low operating costs
- Flexible installation options
- No conveyor required for preseparation
- No clean tank required
- Modular construction



VERTIDRUM filter modules

ENERGY EFFICIENT CONVEYOR SYSTEMS FOR CHIPS

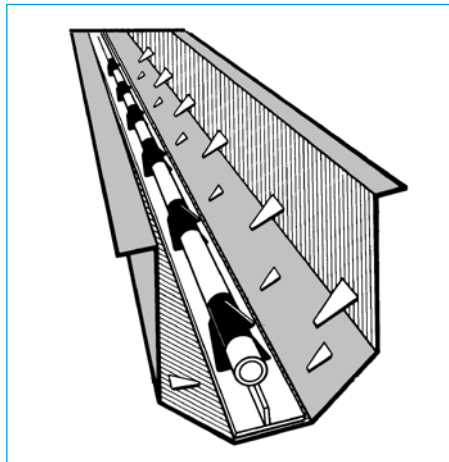
POWER-TROF THE RELIABLE UNDERFLOOR SYSTEM

The versatile Power-Trof® push-bar conveyor efficiently conveys loose or bundled metal chips, fines, curls, turnings or strings, as well as coolant, over short or long distances. It can economically handle large or small quantities of swarf. An efficient series of ploughs, powered by a solid push-bar, transports the chips through the trough by means of back and forth action.

Power-Trof® push-bar conveyors are designed for smooth, trouble-free operation, easy installation and maintenance, plus maximum durability for longer service life.

FEATURES:

- Can be operated as a stand-alone, feeder and collecting conveyor
- Easy expansion and extension
- For transporting large quantities of bundled chips over long distances
- Also suitable for coolants – even in extreme quantities
- Special designs for conveying short chips and casting swarf
- High reliability and durability



Every MAYFRAN push-bar conveyor can be extended as required.



The push-bar centres automatically on the floor of the conveyor trough.



AND LIQUIDS



Vacuum filter with preseparator

VIAVENT THE CLEAN OVERHEAD SYSTEM

Viavent® is an energy-efficient closed system that conveys coolant as well as production residues (chips, grit, etc.) overhead from machines to a central collection point.

A sensitive control system fills steel pipes installed in the hall ceiling area until they are completely full, at which point the discharge process, which cleans and empties the entire system, is initiated.

The coolant flows back to a central filter through horizontally installed pipelines without the need for an external energy supply. This is where the material is processed, cleaned of chips and fed back to the machine. The high-quality self-purification rules out the risk of blockages.

FEATURES:

- No rinsing nozzles required as is the case for conventional open channel lines.
- The closed circuit reduces coolant losses, extends its service life and reduces the required filter size.
- The environmentally-friendly system ensures better air quality and occupational safety in the plant (no haze) and the coolant is kept separate from the groundwater.
- No floor ducts and open gutters thanks to the closed overhead system.



Vacuum filter facility with Viavent pump system

SELF-PURIFYING & ENERGY-SAVING – THE FLEXIBLE AND EASY-TO-EXPAND VIAVENT® SYSTEM

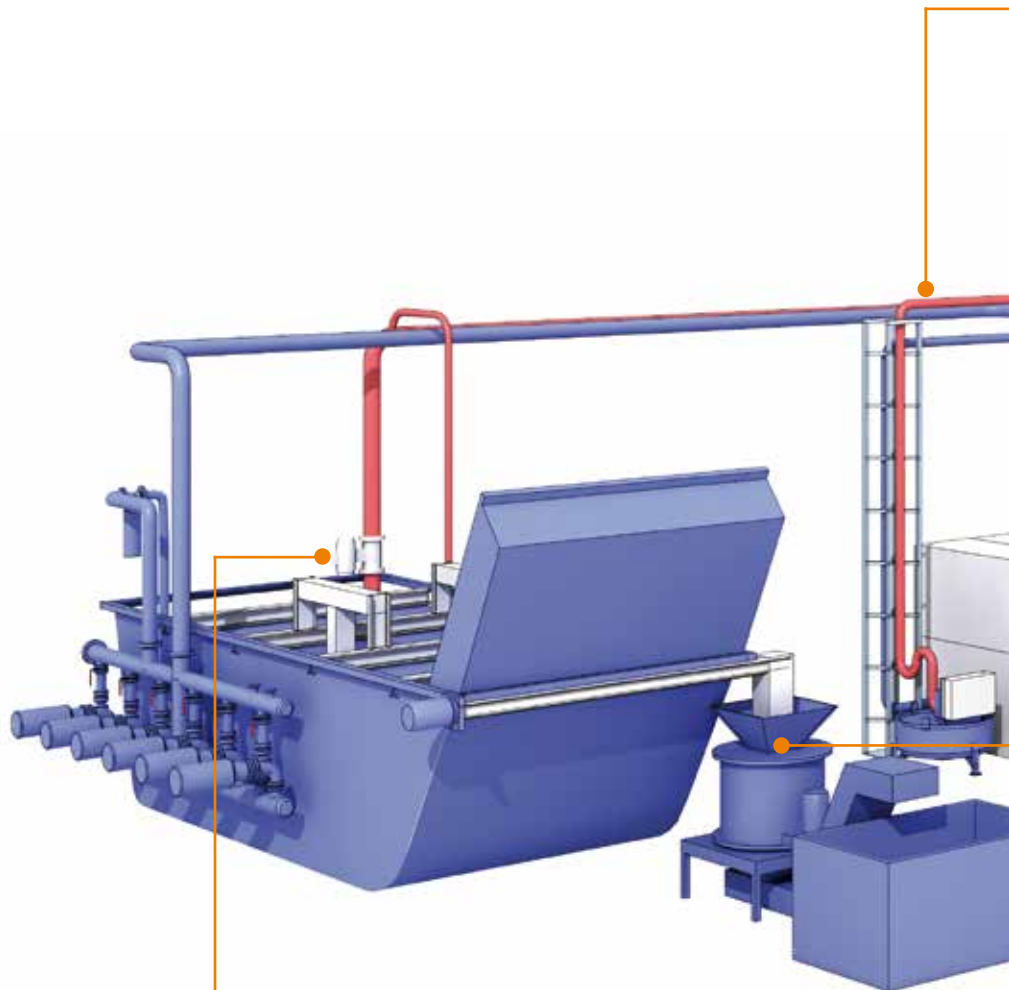
The modular overhead construction allows for maximum flexibility when installing machines and machining centres as well as for future extensions, as the machine design is not dependent on channels on the floor. Viavent systems have been successfully installed in the latest manufacturing plants around the world in combination with Mayfran's proven return pump station design.

THE BENEFITS:

- Requires no additional flushing volume
- Smaller filter areas
- Lower energy demand
- Horizontal pipe system, no gradient required
- Flexible hall layout
- Self-purification of the lines
- Lower disposal costs

PIPELINE SYSTEMS

The lifelines. They connect the individual components to form a functioning network for supply and disposal. High transport capacity with small pipe diameters. No gradient necessary – horizontal overhead installation.



FUNCTION STOP VALVE

The “lock-keeper”. When released, the coolant and the chips go directly into the filtration system.



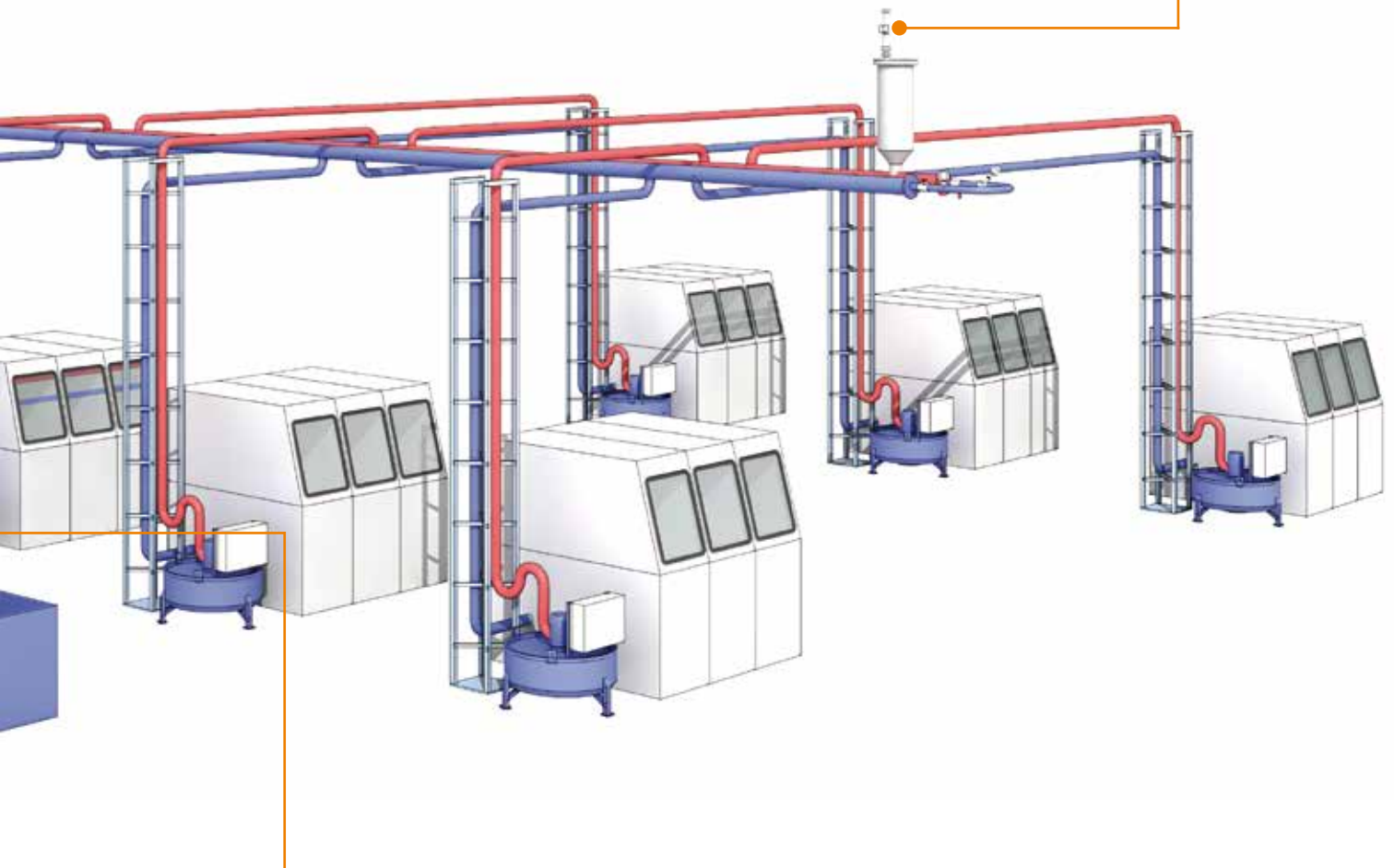
CHIP PROCESSING

Start and end of the circuit. Separate components such as filters, tanks, centrifuges, skimmers etc. are selected individually for each application. This provides the best possible processing system for your specific requirements.



OVERHEAD CONTROL TANKS (EHB)

The heart of the Viavent® system. With the overhead control tank and the system control Mayfran reliably avoids the buildup of deposits in the pipelines, thereby saving energy as well as operating materials. The ingenious application of the basic laws of physics and a reliable release mechanism provide complete emptying and effective self-flushing of the piping.



MACHINE PUMP STATION

Coolant and chips are removed with the help of a special pump. The machine pump station can be equipped with or without chip shredders.



COMPONENTS THAT REDUCE COSTS

FILLING, MEASURING, CONTROLLING

The MAYFRAN RefillMatic® system has been developed in order to get the best out of your coolant.

The RefillMatic® system is a logical extension to a new or existing coolant system. The sophisticated fill unit (RCC) technology allows the coolant system to be filled and re-filled completely automatically.



RefillMatic control unit

THE BENEFITS:

- Extended service life of the tools
- Optimised quality of the workpieces
- Reduces consumption costs to an absolute minimum
- Reliable coolant quality



RefillMatic system

PRESEPARATOR

Preseparators separate short and long chips from the coolant at the machines. The coolant with short and long chips enters a conveyor system from the machine tool (scraper conveyor, hinged belt conveyor, etc.).

Here, the coarse and long chips are separated by a slotted sieve section and forwarded for chip processing.



Preseparator on a vacuum filter

MAGNET SEPARATOR

The MTCS magnetic rod separator is used to clean coolant such as water, oil or emulsion that has been contaminated with magnetic solid particles and tramp oils.

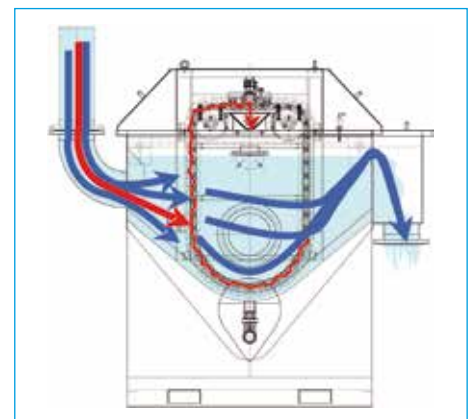
The magnetic fields of the magnetic rods bind the ferritic coolant impurities to the chain of magnetic rods.



MTCS magnetic rod separator

FEATURES:

- For short metal chips, metal slurry, grinding swarf
- Constant filling level
- High separation efficiency, large throughput quantity
- No auxiliary filter material



Profile of the operating principle

MACHINE PUMP STATIONS



Machine pump station directly on the machine with supply to the Viavent overhead system

CHIPS & COOLANT ARE SMOOTHLY CONVEYED

Machine pump stations can be integrated into almost any machine tool. The coolant (oil or emulsion) and chips are pumped through pipes to a central filtration or processing system.

THE BENEFITS OF MACHINE PUMP STATIONS:

- Machine pump stations can be individually adapted to existing or new machine tools
- Simplified conversion of decentralised or stand-alone filtration systems to central coolant filtration and supply
- The flexibility of the pump stations is ensured even in the event of machine reconfigurations
- Automated chip and coolant transport
- Clean manufacturing environment



MRS-BP pump station



MRS-R pump station



MRS-D pump station

CUSTOMISED MODULAR COMPONENTS FOR SYSTEMS

CHIP PROCESSING SYSTEM

MAYFRAN offers turnkey compact systems for chip processing (crushing and drying) and efficient coolant extraction. In addition, higher price are obtained when selling the chips.

THE BENEFITS:

- In combination with the right conveyor technology and coolant processing system MAYFRAN offers the optimal complete solution for environmentally compatible chip disposal.
- The modular construction of the MAYFRAN components allows for the customised configuration of central systems depending on their size, type and available space.
- Comprehensive project management



The system consists of the following components: centrifuge, chip crusher, conveyor and container loading.

VBU CHIP WRINGERS/ CENTRIFUGES

The VBU chip wringer runs continuously for all everyday applications. Various sizes for average outputs between 150 kg/h to 4,500 kg/h (steel chips) are available.

THE BENEFITS:

- The speed can be adjusted to the operating requirements
- Fully automatic and continuous operation
- Quiet operation, minimum maintenance
- Tempered drum with long service life
- Optimal oil separation
- Compact construction



VBU chip wringer

ENVIRONMENTAL PROTECTION AND COST SAVINGS

These days it is becoming increasingly important to process chips and ensure they are dried before disposal. In doing so, the coolant is reclaimed and fed back into the manufacturing process. This provides the opportunity for considerable cost savings, e.g. with regard to the consumption of oil, while a higher sales price can be obtained with dry chips.



Chip processing system with centrifuge and chip crusher

MA/MSA CHIP CRUSHER

The patented MA 4 single-shaft crusher with automatic rejection of coarse parts is particularly well suited for use in pump stations for chips and coolant. The MA 4 is distinguished by its compact and robust design. The MSA system crusher is designed for extremely large clusters of hard and brittle material.

VC CHIP CRUSHER

For the supply of chips in batches. Large quantity clusters can be directly added (e.g. from buckets) and processed. The crusher with vertical grinder (normal or fine) is particularly well suited for crushing tough material and can be equipped with an automatic tramp metal ejector.



VC chip crusher

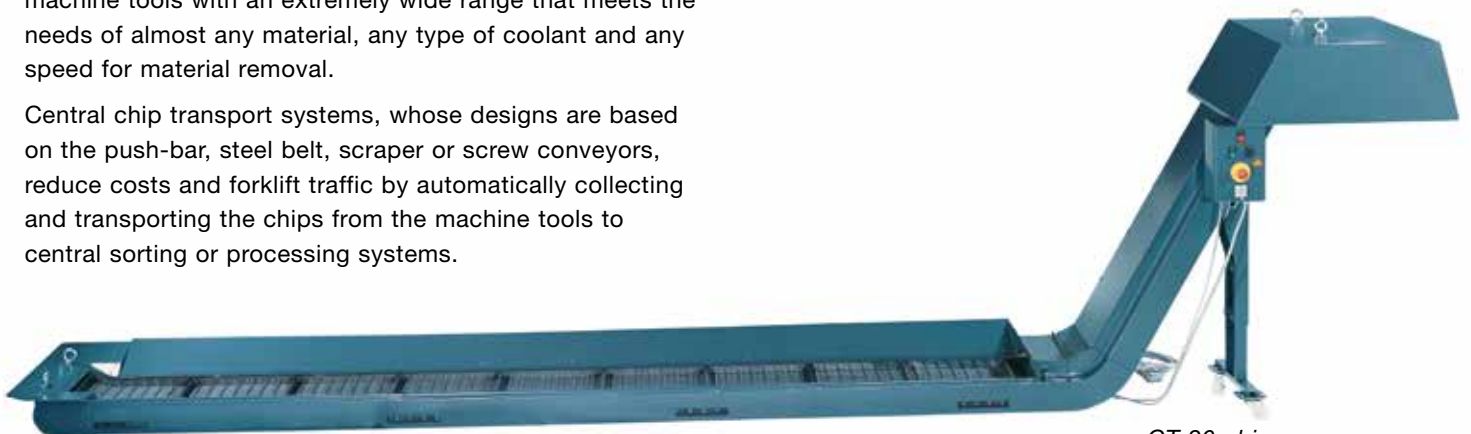


MA/MSA chip crusher

CHIP CONVEYOR

Mayfran is a leading global provider of chip conveyors for machine tools with an extremely wide range that meets the needs of almost any material, any type of coolant and any speed for material removal.

Central chip transport systems, whose designs are based on the push-bar, steel belt, scraper or screw conveyors, reduce costs and forklift traffic by automatically collecting and transporting the chips from the machine tools to central sorting or processing systems.



CT 20 chip conveyor

THERE FOR YOU WORLDWIDE



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