

COMPLETE CHIP PROCESSING SYSTEM



RECYCLE YOUR MACHINING CHIPS
AND GRINDING WASTE

1. Reduce your carbon footprint
2. Recover your cutting fluids
3. Add value to your waste

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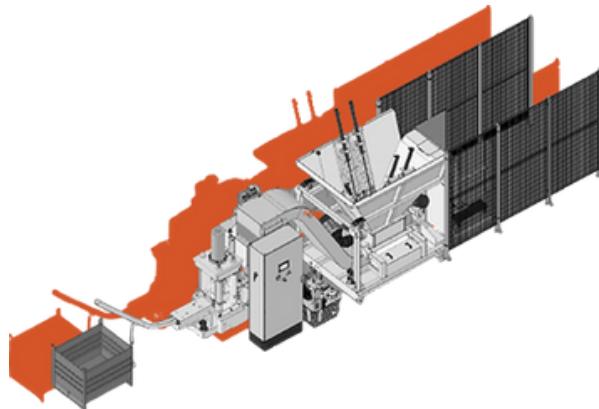
SFH PRESENTATION

SFH is a **French** designer and manufacturer of **machining chip** processing lines for their **valorization** in recycling channels, and also a manufacturer of **cutting fluid filtration** units to optimize the life of machine watering baths.

Our products and **turnkey solutions** are mainly intended for machining companies, recycling companies and foundries.

The benefits are:

- Reduce the volume of your chips by up to **10 times**
 - Easier storage
 - Simplified management
 - Reduction of transport costs
 - Optimization of furnace loading
- Handle your chips **automatically**: less manpower
- Ensure a quality of the treated waste for a better valorization
- Reduces the loss on ignition in the furnace by 5 to 10%.
- Removes cutting fluids from chips up to **99.5%**:
 - Allows recovery and replenishment of fluids to machine tools for other machining operations
 - Allows chips to be placed directly into the furnace without any treatment
- Promotes an **environmentally responsible brand image (green approach)**



MADE IN FRANCE

COMPLETE PROCESSING SYSTEMS

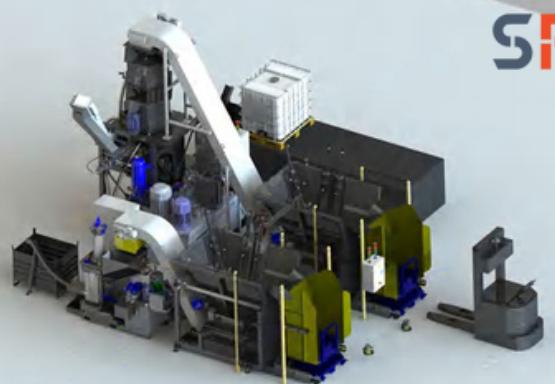
SFH



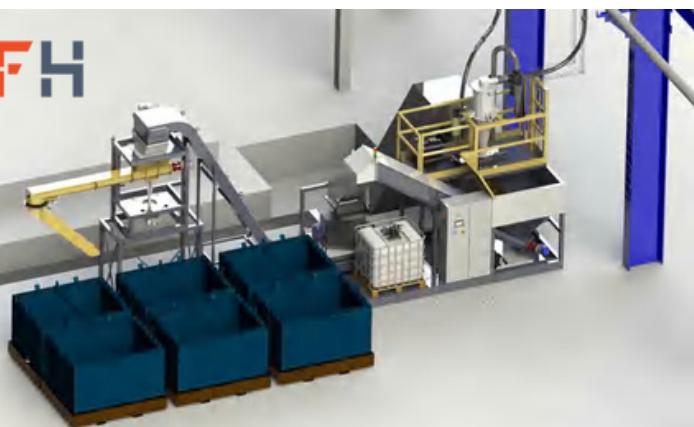
The SFH **turnkey** chip processing system gives you the **security** and **autonomus** of a line that is totally adapted to your needs.

After a **detailed study** of the needs, the chip processing line is designed to **suit** the customer's needs.

SFH



SFH



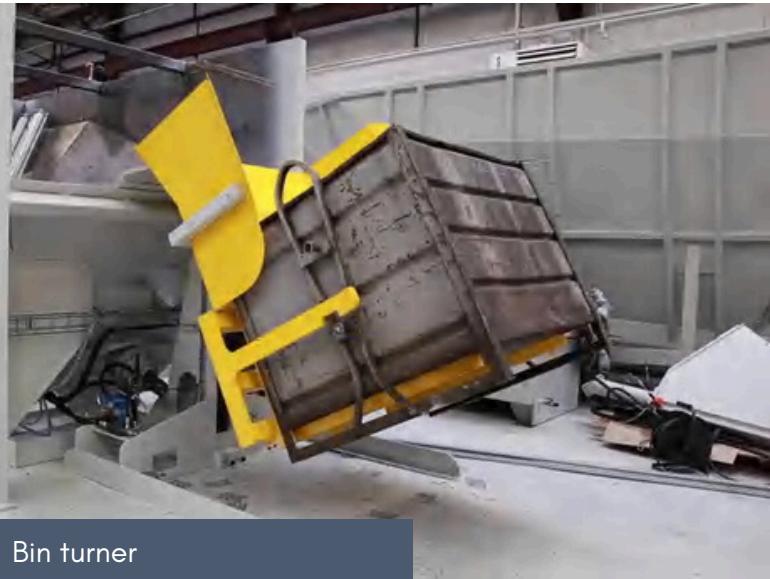
These systems are fully **automated** and **autonomous**. They do not require operators and take into account the safety of workers.

We assist you in the elaboration of the solution which will stick the best to your need and lead you towards the **best solution** of revaluation.

SFH



CHIP COLLECTION AND RECOVERY



Bin turner

It can be done:

- From ***bin turners***
- By unloading the chip bins by ***forklift***

➤ Directly at the ***machine exit*** with a ***vacuum unit*** capable of conveying the chips to a dedicated area

➤ ***AGV-AMR*** collection of the chip bins



Vacuum unit under the machine tool conveyor



Air suction with material separation



AGV-AMR robot

CHIP SHREDDING



These units are used to **shred stringer chips** or chip bird nests and also detect and remove foreign parts.

Its design with optimized cutting torque and fast reaction time for **foreign part detection** performance ensures high throughout the life of the equipment.

The benefits of shredding are:

- **Reduce the volume** of chips
- **Reduce transportation**
- Prepare and **calibrate** chips for the following operations



CHIP WRINGING

Units for continuous centrifugation of chips in a treated steel drum.

The advantages of centrifugation systems are:

- **Higher resale value of chips**
- **Recovery** of cutting fluids for reuse
- **Automatic cleaning** to maintain performance targets overtime.
- **Moisture** reduction up to 0.5%.



CHIP COMPACTOR

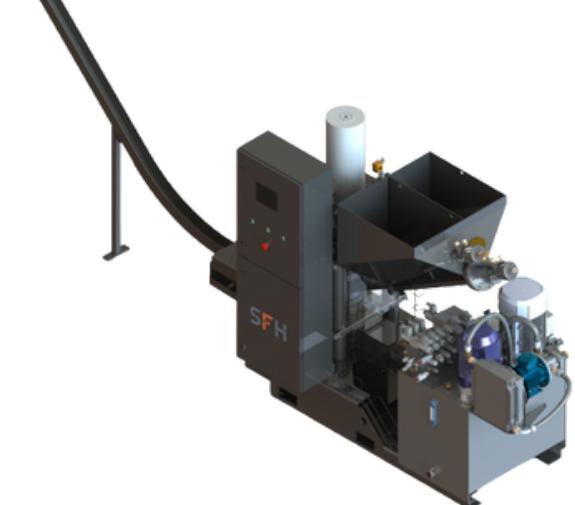
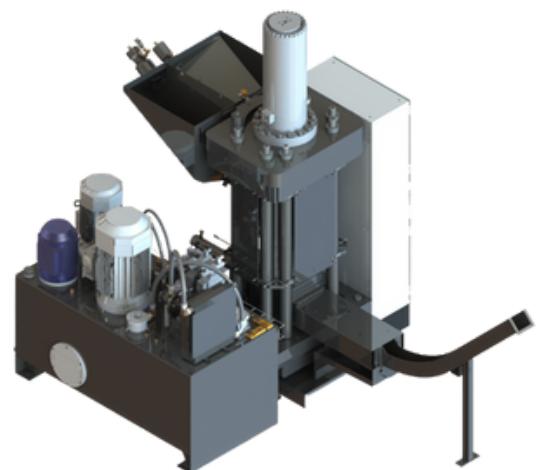


These units are designed to **briquet** the chips with **high performance compression** in order to increase the density of the chips and to extract the cutting fluids. **Quality** and **reliability** being important to us, these units are designed to resist material fatigue stresses with adapted calculation software.



The advantages of briquetting:

- **Reduced chip volume** by up to 10 times, and even more for turning operations
- **Reduced transportation costs**, and reduced carbon footprint
- Elimination of cutting fluids from the chips (**less than 5% moisture**)
- **Recovery of cutting fluid** for reuse



PROCESSING OF MACHINING

SFH also integrates filtration units into its chip processing systems. The liquids collected by the chip treatment systems are **returned** to these filtration units. The aim is to **regenerate** the fluid recovered from the chips and reinject it into the machines.



Benefits of regeneration:

- Redistribution to the customer network
- **Reduction of used oil** and purchase of new concentrates
- Oil of **equivalent quality** to new oil is returned to the machine tank
- Promotes an **ecological and responsible** image

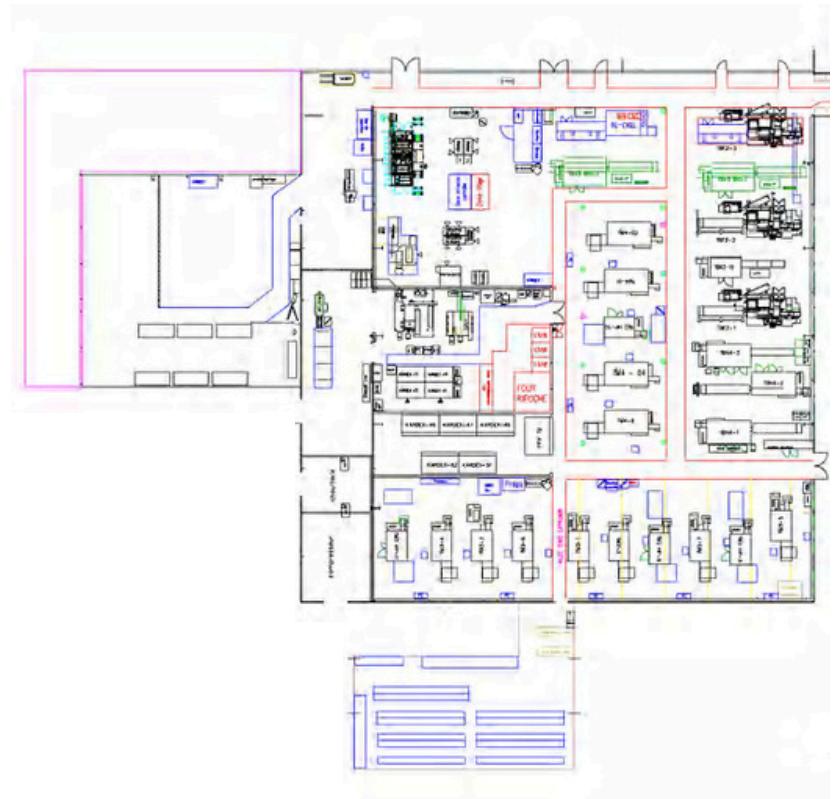
ADDITIONAL OFFERS

SFH can offer **additional integrated processes** through customized solutions, such as:

- **Automated chip storage management**
- **Detection** and **separation** of specific **foreign parts**
- Filling of sea containers
- **Weighing tables** with connected tracking equipment
- **Industry 4.0** and connected equipment
- Efficient machines with **energy saving options**

FLUIDS

SFH can also provide you with cutting fluid **filtration** and **distribution** systems. These filtration units **recover** the cutting fluids from the entire factory or production unit, in order to **recondition** them and **redistribute** them to the **machining centers**.



All SFH filtration processes are designed and adapted to the customer's **production process** to:

- Provide the required fluid **quality** to the machines
- Better control the **concentration of the baths** and the treatment of foreign oils
- **Ease** bath management (one bath instead of one per machine)
- **Standardize** and **reduce** the number of **equipment** and **consumables** related to the filtration and distribution of cutting fluids
- Ease **maintenance**
- Limit the **energy impact**
- Promote an **ecological and responsible image**

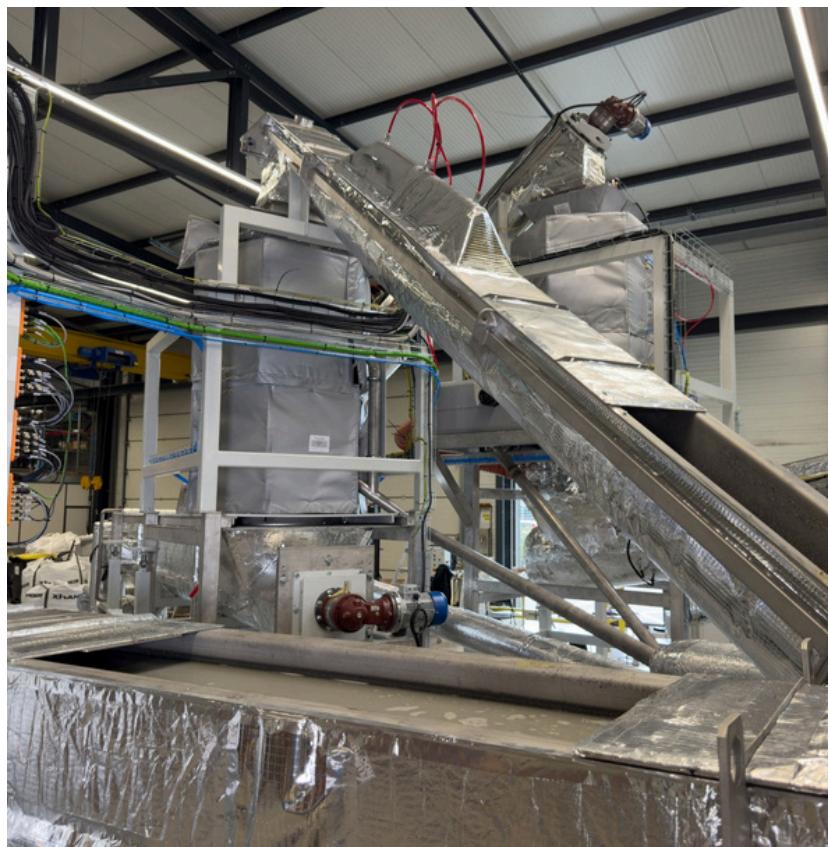


CHIP WASHING / DEGREASING

Applications : Ti6-4 / TA6V, Ti Gr1., Inconel 718, René 65...



For recycling titanium alloys and superalloys, **washing/degreasing** is necessary to remove **oils and contaminants** that could alter the material's chemical composition during remelting. Their chemical composition is extremely precise and demanding, which is not the case for standard steels. Requirements for **carbon (C)** or **oxygen (O)**, for example, are very low by comparison, and impossible to meet without degreasing



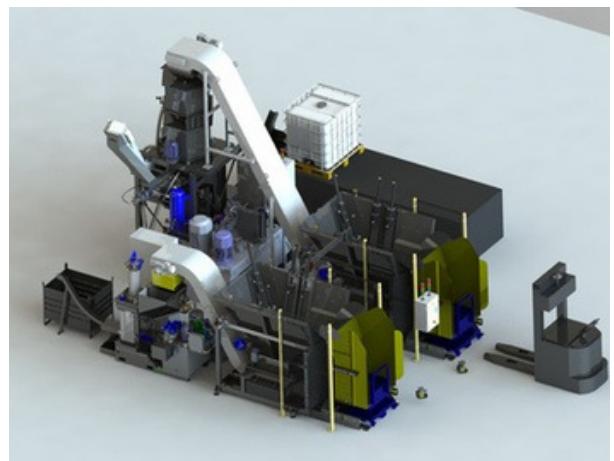
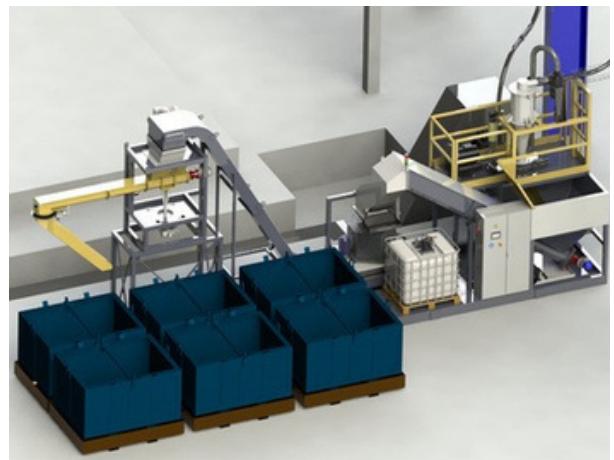
Advantages of washing/degreasing chips :

- Process developed and qualified to meet your needs (trials/tests).
- Washing/degreasing fluids selected according to the issue (oils, residues, oxidation).
- Quality objective: avoid downgrading (e.g., TA6V if C > 0.08%).
- Performance guarantee :
 - **Residual carbon** down to 50 ppm (0.005%).
 - **Residual oxygen** down to 500 ppm (0.05%).

TURNKEY INTEGRATIONS

According to your needs, SFH provides you with a **turnkey** equipment, including the engineering, the installation, the commissioning of your filtration systems and the chip processing systems

- Integration in dedicated on sites
- **Connection** of fluid networks to equipment
- Connection to electrical and pneumatic energy
- **Reinforced safety** of workers
- Assistance to production start-up
- User **training**



PERFORMANCE QUALIFICATION



Within the framework of feasibility studies of projects related to the recycling of chips, SFH carries out test campaigns on its testing machines.

SFH engineers study and define the **best treatment** process according to the customer's requirements.

SFH relies on its partners and suppliers to provide global solutions by carrying out analyses and syntheses in the laboratory, as well as providing expertise at all times.

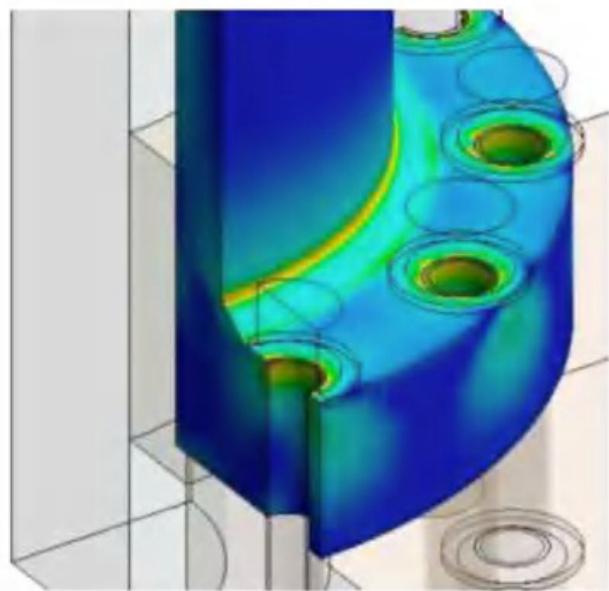
The objective is to conclude the **technical and economic feasibility** of the project in order to provide the customer with the most relevant solution for the best investment.



QUALITY INSURANCE

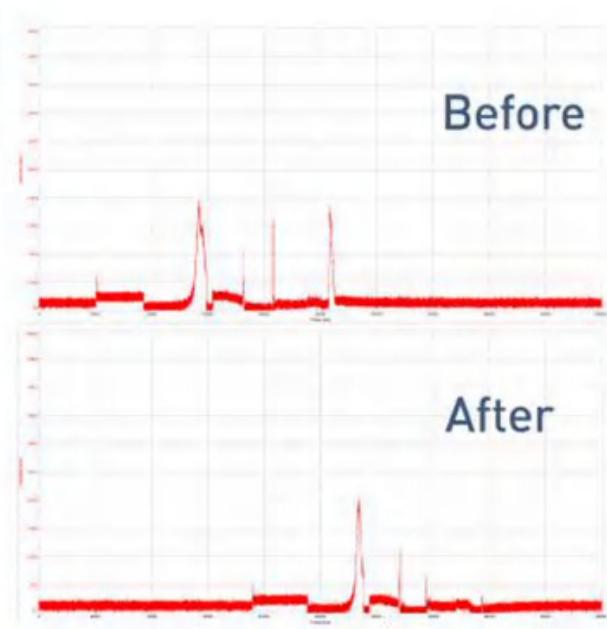


Our mechanical engineers design to ***improve and control the life of our products***. Using finite element analysis methods and software, we are able to avoid fatigue failure in materials.



Ansys

3D SOLIDWORKS



In addition, our on board PLCs ***continuously analyze*** all the data transmitted by the sensors in order to prevent breakdowns and optimize the life of the equipment. Other sensor analyses are also ***carried out by our personnel during commissioning*** in order to optimize mechanical stresses and increase the service life.



CONTACT US

7,Rue GustaveDelory,
B.P. 11
42964 Saint-Étienne
+33 (0)4 77 92 19 92
accueil@sfh.fr
www.sfh.fr

