



## Mastering challenges

30 years of HAAS were not completed without some hurdles. People grow with the tasks that everyday life and project demands present to them. We all know this from daily life and we have all been toughly challenged especially this year.

It is important to us that you feel well supported by us at all times. Personal contact is one of the most important assets for concluding project contracts successfully. We would be pleased if you keep in touch with us! Feel free to call us, write to us, follow us on our social channels and, if it is possible, you are also very welcome to come and visit us.

Yours Volker Haas & Sascha Kloft



## Online meetings & webinars

### Face to face even at distance

Personal meetings are very difficult at the moment. We are available via Microsoft Teams for video meetings and inform with regular live webinars. Please feel free to make an appointment with us if needed.

# HAAS Team

## Together for success

In 1989, HAAS started with just three people. 1 ½ years later, 15 people were already part of the team and in 2009, 45 employees celebrated the 20<sup>th</sup> anniversary of the company with Volker Haas. Since 2016, around 85 employees have been constantly employed at HAAS. Common projects, experiences and problems have strengthened the team spirit!

In 2008, HAAS experienced a phase for the first time in which the management was forced to announce „short-time work“, but it was possible to keep the entire team together.

2020 confronts us all with a completely new challenge. HAAS is proud to have mastered this phase so far and has even been able to strengthen the team with seven additional employees and trainees since August. The average age is 37 years, which means that there is a good mix of young, motivated and experienced, skilled employees. 25 staff members have been part of the HAAS team for more than 15 years and 10 staff members for more than 20 years!

HAAS has regional roots and is globally active. For many years, young and motivated people have been able to complete a technical or commercial apprenticeship at HAAS. After successfully completing their apprenticeship, they are offered permanent employment with extensive opportunities for further training as a basis for a long-term common future. **For you as a customer and partner, this continuity means having fixed contact persons at all times!**



Our sales team – always available





# SieboTec



## Powerful network - new partner added to the HAAS team

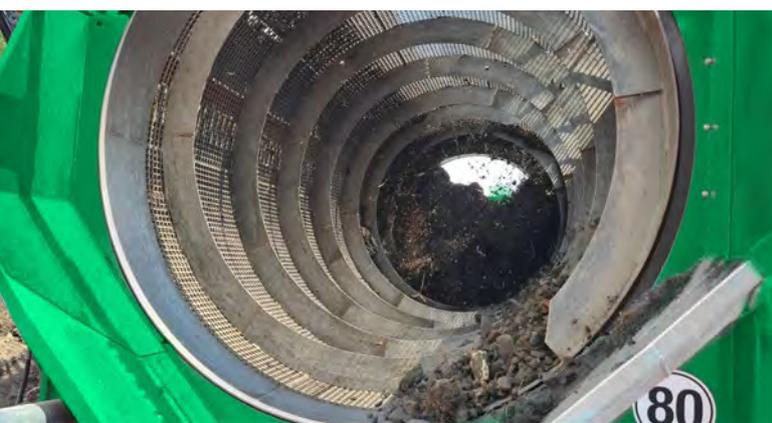
SieboTec GmbH is a young team of drum screen experts. Each member has many years of experience in the fields of design, production, spare parts management and aftersales service. HAAS has been successfully marketing the screening machines from Soest/Germany since the middle of 2020.

The newly developed „Siebo 5000“ drum screen has an excellent screening performance and is convincing in operation! During the design phase, the designers took into account numerous customer requests and experiences. The result is a screening machine that impresses not only HAAS but also our customers!

The machine reliably screens domestic and commercial waste, compost, bark, wood chips, bulk materials or excavated earth. The load-dependent material feed ensures that the large screening area is optimally utilised. The robust design and high-performance components are the outstanding features of this screening machine!

Have we aroused your interest? Call us:

☎ +49 2661 9865-0





## Woodpower!



## A project of two companies: Solvay and AVG

The Rheinberger Solvay plant produces soda and sodium bicarbonate. Products from Rheinberg are used for example for glass, solar panels, laundry detergents and baking powder. Solvay is rarely mentioned anywhere, but it's in almost everything!

The Solvay plant in Rheinberg significantly reduces CO<sub>2</sub> emissions by around 190,000 tonnes per year. To achieve this goal, Solvay Chemicals is building a power plant to generate process steam and electricity using waste wood as fuel. Each year around 300,000 tonnes of waste wood will be used to generate energy in the power plant.

Within a radius of 150 km certified disposal companies collect the waste wood and supply it to the power plant. AVG Baustoffe Goch GmbH is responsible for processing the waste wood into high-quality biofuel.

## The challenge

AVG Baustoffe Goch was faced with the challenge of having to process 300,000 tonnes of waste wood per year according to precisely defined biofuel specifications. The plant must process at least 60 t of waste wood per hour in order to cover the power plant's demand. To achieve the optimum efficiency of the CHP boiler, clean wood chips without any impurities are required.

## System components

1. TYRON 2500-E 2.0 pre-shredder
2. Overband magnet (enclosed)
3. ECOSTAR HEXACT dynamic disc screen
4. ARTHOS 2000-E hammermill
5. HAAS distribution screw(s)
6. 2 overband magnets
7. 2 non-ferrous separators 2500
8. 2 HAAS flat screens
9. Interface to the power plant
10. Dust extraction system



# 60 t/h



## The solution

AVG has been using a stationary HAAS waste wood processing system at its Goch site for many years. Another benefit that led to the decision in favour of a HAAS plant is a HAAS waste wood plant that has already been installed since 2017 and produces the fuel for an identical biomass power plant in the UK.

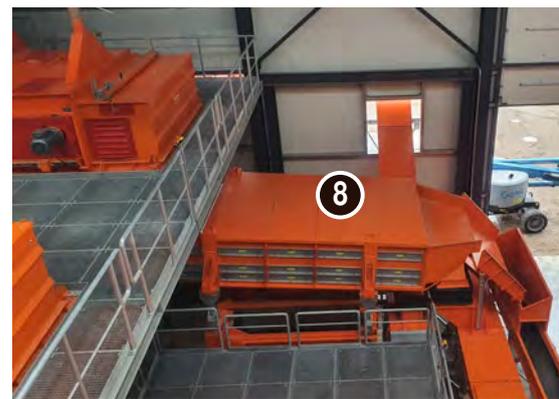
The waste wood of the classes A I to A IV is first pre-shredded with the largest HAAS pre-shredder, a TYRON 2500-E. The wood is then processed by a hammermill, ARTHOS 2000-E, equipped with two powerful 315 kW electric motors to produce recycling chips < 100 mm.

The special ballistic chute protects the hammermill from wear and tear and machine breakage. Impurities, especially iron, are automatically separated. In addition, the mill can be opened hydraulically in a flash so that wear parts and the screen basket can be changed within a very short period of time. This minimises downtimes and reduces the costs.

To ensure optimum cleaning and screening of the wood chips, the material flow is distributed over two lines. Intelligent material diverters and distribution screws guarantee redundancies and thus operational reliability in the event of problems during processing. Powerful neodymium magnetic separators, magnetic drums and eddy current separators remove the remaining impurities such as nails, screws or staples from the wood.

The cleaned biofuel is finally separated into three fractions with HAAS flat screens. The usable fraction is fed into the power plant's storage silo, the fine fraction is separated and the oversize is fed back into the process. This is where the process chain ends.

A dust extraction system consisting of a filter unit with a suction capacity of 40,000 m<sup>3</sup> air per hour keeps the plant almost dust-free.



# HAAS turnkey systems

## CRJ Services supplied a HAAS wood processing system to Mill Farm Recycling Ltd.

Mill Farm Recycling Ltd is a family business with roots in agriculture. In 2004 the company started to build a small composting system to produce compost for its own use. Since 2010, waste wood has been processed into high-quality wood chips. At that time these chips were used as fuel in Mill Farm's own biomass power plant. Today Mill Farm Recycling supplies local biomass power plants and farmers with high quality compost, which is used as fertiliser, and quality chips, which are used as biofuel in the power stations and by farmers as „animal bedding“.



### The challenge

Mill Farm Recycling needed a stationary wood recycling system for the production of high-quality wood chips from pre-shredded waste wood grade A. The final grain size should be variable at any time

without any downtime. All ferrous and non-ferrous parts have to be removed and the material must then be separated into four different chip sizes.



## The solution

HAAS supplied a precisely fitting turnkey waste wood processing line. The already pre-shredded material is reduced to the required grain size with the vertical hammermill, ARTHOS 1600-E. Magnetic separators and non-ferrous separators sort out ferrous and non-ferrous metals from the wood. Finally, the recycled wood chips are screened into four different grain sizes with a HAAS flat screen.



The single fractions are distributed by chain conveyors to six large storage bays. The oversized material is returned to the process. The HAAS package is completed by a dust extraction system to minimise dust emissions.

The required particle size can be varied -as desired- in a minimum of time. The screen basket of the hammermill can be changed in less than 30 minutes (with the help of the quick screen change

system) and thus the size of the post-shredded material can be specified. The screen decks in the flat screen can be easily exchanged.

### System components

1. Feeding and dosing hopper
2. Heavy overband magnet
3. ALVA starscreen
4. ARTHOS 1600-E hammermill
5. Non-Ferrous-Separator 2000 with integrated magnetic drum
6. HAAS flat screen (HPS 125)  
Screen fractions:
  - a. 0 - 5 mm  
fine fraction
  - b. 5 - 20 mm  
medium fraction
  - c. 20 - 50 mm  
coarse medium fraction
  - d. > 50 mm oversized
7. Storage boxes

**35 t/h**



# HAAS turnkey systems



## Mechanical waste treatment in Pitesti

Girexim Universal SA was founded in 1996 as a small local waste collector and is today one of the largest processors of non-hazardous waste in Romania. Girexim operates two waste disposal sites, three sorting plants, seven transfer stations and two MBA plants in the Pitesti county. The company owns a mobile pre-shredder HAAS TYRON 1500, which convinced with its quality and robustness!

A number of competitor machines were unable to cope with the difficult Romanian municipal waste. With the smallest HAAS pre-shredder, the TYRON 1500, Girexim succeeded in shredding the waste effortlessly to the desired end product size because of the intelligent HAAS twin-shaft system.

## The challenge

GIREXIM UNIVERSAL SA planned a mechanical treatment line for the processing of municipal solid waste. The throughput of the designed line should not be less than 125 m<sup>3</sup>/h, which is up to 55 t/h depending on the material mix. The organic fraction must be separated from recyclables and potentially energy-efficient waste in the best possible way.





## The solution

The solution for GIREXIM UNIVERSAL SA consists of a complex line for the processing of municipal solid waste, starting with a feed hopper embedded in the ground incl. a chain belt conveyor. The input material is transported via the conveyor to the HAAS TYRON 2000-E XL 2.0 and shredded by the primary shredder to a size less than 300 mm. The

overband magnet separates iron before the material flow is divided into two fractions < 80 mm with the HTS 9025 drum screen. Finally, both, the fine fraction < 80 mm and the coarse fraction > 80 mm are cleaned of non-ferrous metals by two non-ferrous separators.

The fine fraction / organic material is collected for further biological treatment. The coarse fraction is

supplied to cement and RDF power plants. The plant runs in single-shift operation, eight hours a day, five days a week.

The modular design of the plant allows it to be expanded to include additional process steps such as windsifting and secondary shredding.



## System components

1. Feed hopper
2. TYRON 2000-E XL 2.0
3. Cross belt magnet (neodym)
4. Drum screen HTS 9025
5. Non-ferrous separator 2000
6. Non-ferrous separator 1500

**55 t/h**



# HAAS turnkey systems



## WKE GmbH Rackwitz relies on proven HAAS quality!

WKE Entsorgungs- und Recycling GmbH is a certified waste management company based in Rackwitz/Germany. The disposal and container services are primarily offered in the Leipzig / Halle region.

With a fleet of 20 own container vehicles and its own wheel loader, excavator and processing technology, the family business covers an impressive range of services.

Bulky waste, construction and demolition waste and mixed commercial waste are processed into refuse-derived fuel (RDF), which is transported to various plants for incineration. Concrete, construction debris, asphalt, soil and compostable waste are treated in the mineral processing plant. Concrete slabs, broken concrete and concrete pipes are turned into recycling material, removed upper soil is processed into a high-quality topsoil.

## The challenge

In 2006, WKE started up a HAAS recycling plant. After 14 years, it was decided to replace the aging processing technology. The „Minimum Technical Requirements for Pretreatment Plants“ had to be taken into account for the restructuring of the mechanical treatment of mixed industrial waste into refuse-derived fuels. The existing on-site extraction system needed to be integrated into the new plant. The minimum requirement is 20 t/h throughput capacity.

Fresh air supply for TYRON engine bay



Exhaust air duct

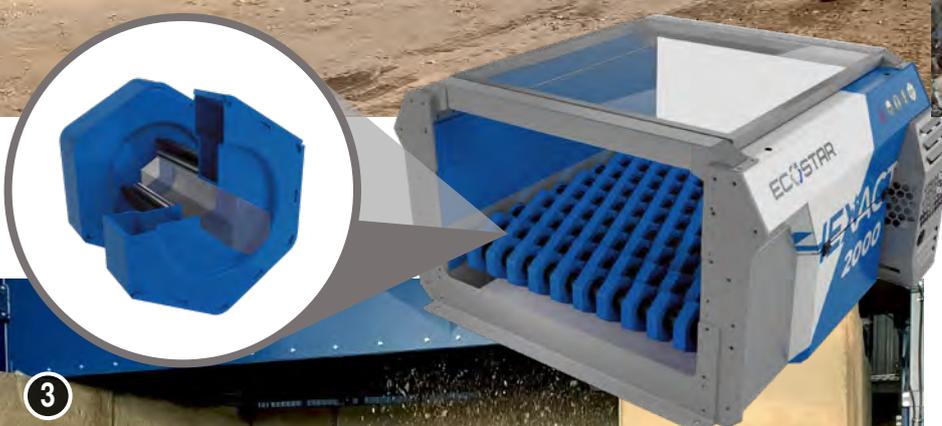




## System components

1. TYRON 2000-E XL 2.0 pre-shredder
2. Overband magnet
3. ECOSTAR HEXACT 2000 dynamic disc screen
4. Sorting cabin with two workstations
5. Fresh air supply
6. Exhaust air duct

**25 t/h**



freely rotating tubes which prevent the material from wrapping and sticking. Downtimes and especially the cleaning effort are minimised and costs are reduced!

Finally, two workers separate re-usable materials from the material flow in a sorting cabin. When planning and designing the sorting cabin, the new version of the Technical Instructions on Air Quality (German abbreviation: TA Luft) was implemented. The cabin with aeration and deaeration system meets the latest technical standards. In addition, the on-site dust filter system was integrated. The dust generated in the treatment process is extracted.

The processed commercial waste is delivered to power and cement plants and produces energy (electricity and heat) as substitute fuel. The modular design allows the plant to be expanded at any time with additional components such as non-ferrous separators, optical sorting systems or secondary shredding units.

## The solution

WKE has chosen a new HAAS sorting and processing plant. The mixed industrial waste is first pre-shredded by a HAAS TYRON 2000-E XL 2.0 to a grain size of less than 250 mm. The very dust-intensive pre-shredding process generates „thick air“ in the building. To keep the pre-shredder dust-free, especially the cooling system, the HAAS engineers dug deep into their bag of tricks. A ventilation duct supplies the primary shredder's radiator with fresh air, which is drawn in from outside the building. An additional exhaust duct allows the

excess air to flow back out of the engine compartment. The clean air prevents the usual contamination of the cooler mesh. The regularly required cleaning work on the radiator is no longer necessary.

Ferrous particles are separated by a magnetic separator. The material flow is then classified into two fractions (fine fraction smaller than 30 mm; accepted fraction 30 - 250 mm). This is done by a dynamic disc screen from ECOSTAR. The patented technology guarantees the highest performance for every application. Between the octagonal discs, which are made of Hardox, there are



## Biomass fuel from waste wood!

**BWE Balthasar GmbH is a typical, medium-sized waste disposal company based in Cologne. With a team of 20 employees, BWE has been operating a waste sorting plant since 2005. All recyclable materials are separated from residual waste and recycled.**

**Due to the increasing volume of waste wood, the aging shredder needed to be replaced. The company was looking for a flexible and compact solution to process approx. 40,000 t of waste wood annually into high-quality fuel for thermal utilisation in a biomass power plant. In a single-stage shredding process wood chips of 80 - 120 mm with a minimum percentage of fines are to be produced.**

HAAS supplied the perfectly matched combination of the TYRON pre-shredder and the newly developed ALVA star screen with oversize recirculation.

With its intelligent and aggressive twin-shaft system the HAAS TYRON is the perfect choice for

shredding waste wood. The extremely robust shaft system is even suitable for very hard wood such as railway sleepers with solid iron plates. The extra-fine tool configuration (7/6-4) provides BWE with an excellent wood chip and, combined with this, a high throughput.

The shredder is equipped with a neodym cross-belt magnet, which ensures reliable separation of metal parts such as nails, metal plates or hinges. After being shredded, the material is screened.

The newly developed ALVA star-screen reliably separates the usable fraction < 120 mm from the oversize > 120 mm. The separated oversize material is conveniently returned to the shredder by the integrated recirculation conveyor. This means that the oversized material does not have to be moved a second time by a wheel loader.

The extremely compact starscreen impresses with its outstanding screening performance in a very small footprint. The highlight is the integrated screw conveyor for collecting and discharging the useable fraction.



HAAS INNOVATION



## TYRON & ALVA

### THE perfect match

Shredder TYRON & Starscreen ALVA  
with oversize return!

Minimised footprint

Easy access for S&M

200 m<sup>3</sup>/h peak performance

Radial rear conveyor

Unique with collecting auger



MOBILE AVAILABLE FROM 2021

# TYRON 2000



## A TYRON in „golden yellow”

Our partner OKADA TYRON placed a very special order this spring, which we were happy to fulfil. The TYRON was not only to be equipped with a stage V CAT engine, but also painted in golden yellow.

Caterpillar uses state-of-the-art stage V engines with particulate filters, catalytic converters and SCR technology. The OKADA pre-shredder is powered by a C9.3B with 380 hp.

Despite the sophisticated technology for reducing emissions, CAT was again able to reduce fuel consumption. The special painting is always carried out by HAAS free of charge, provided it is a RAL colour.

In June, the time had come for a „squeaky yellow” TYRON to leave Dreisbach to Japan.

## A Viking at the Rhine Falls in Schaffhausen!

REMONDIS is one of the world's market leaders in the waste management and recycling sector. In order to optimise the processing of household and commercial waste, REMONDIS Schweiz AG, based in Schaffhausen, was looking for an innovative, technical solution. With the HAAS TYRON 2000 XL 2.0 a machine was found that was up to the task. With its intelligent twin-shaft system, the TYRON effortlessly shreds and treats the waste, enabling significantly better

transport utilisation to be achieved. Furthermore, the TYRON can also process waste that is difficult to handle without any problems, resulting in major cost and time savings. REMONDIS has found a solution for processing and recycling all waste streams and is highly satisfied with the primary shredder from Dreisbach/Westerwald. As a result, a Viking will probably be seen at the famous Rhine Falls in Schaffhausen for a long time.





## Odenwald - new home for a TYRON 2500 2.0

For the shredding of around 60 tonnes of waste wood per hour, the BHKW Buchen has been using the TYRON 2500 2.0 since October.

The biomass power plant has been in operation since 2003, using waste wood of the classes A I to A IV as fuel (annual throughput approx. 60,000 tonnes) and has a total output of 29 megawatts. The delivered wood is processed with the largest and most powerful HAAS pre-shredder to a maximum length of 30 centimetres. During transport to the biomass boiler, ferrous and non-ferrous metals are sorted out automatically. The wood is burnt in the biomass boiler at temperatures of over 850 °C. The electricity generated is fed into the EnBW grid. The amount of electricity generated annually supplies approximately 15,500 single-family homes with electricity.

The longer hopper extension ensures that no objects fall down when loading the machine with a wheel loader. The machine is equipped with a NEBOLEX system. State-of-the-art misting technology binds the dust in the feed hopper, at the material discharge and at the top of the discharge conveyor.



## All expectations fulfilled

### – a compliment that's good to hear.

Welland Waste Management Ltd, a waste management company based in Leicestershire, operates a biomass power plant and generates energy for 17,000 British households. The power station is fuelled by 72,000 tonnes of waste wood per year. Roger and John Clarke were looking for a machine that was more reliable and cheaper to run than its forerunner. The goal, again, at least 60 t/h throughput to meet the power plant's needs.

Roger Clarke explains the decision for the HAAS TYRON: „The HAAS TYRON was chosen because we have only received good reports on the reliability and operating costs of HAAS machines from waste wood processors who process hundreds of thousands of tonnes of wood per year with the TYRON pre-shredder. In addition, we have been working closely with CRJ (HAAS distributor UK und Irland) since 2005 and have a very good business relationship, which also made the decision a lot easier.“

# HAAS technology

## Machine refurbishment

### From old to new!

Efficiency and profitability are the experts' top priorities, that's why you are choosing HAAS. Is your TYRON getting old? Is it not economically viable to buy a new one?

If required, we can offer you a reconditioning of the tool shafts, the shredding chamber or even a complete overhaul of your HAAS machine. All electrical and mechanical components will be checked, replaced if necessary and body parts repainted if required. After reconditioning, your old, sprightly TYRON will look like a new machine.

### after 9 years ...

Year of manufacture: 2011

Operating hours: ca. 3,266 hrs.

Refurbishment/Service

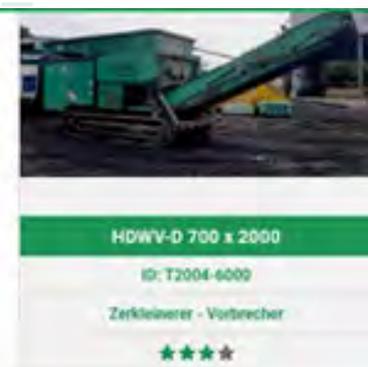
- Replacement engine (August 2016)
- Refurbished cutting chamber
- New main bearings
- New breaker bar
- Complete engine and hydraulic service
- New belt on overband magnet
- New hydraulic hoses



## Powerful second-hand machines

Solid construction, high quality workmanship and durability. HAAS machines retain their value and are very popular also as used machines.

With the „Young Vikings“ we offer you a special series. Strictly tested demonstration machines in best condition, with very low operating hours and a full warranty package. You will find these machines under „YOUNG TYRON“.



# Roadshow - We would also be glad to visit you!



# ROADSHOW

HAAS on tour - with our „HAAS Roadshow“ we are on demonstration tour throughout Germany. Your preferred machine, your input material, your site. During a live demonstration at your premises, you can convince yourself of the performance of HAAS machines without any hurry. Mobile primary

shredders, drum and disc screens as well as our mobile secondary shredder - we offer the right machine for almost any challenge. Discuss all your questions with our technician and put the HAAS technology through its paces so that you know 100 % what you are getting.



- Your premises, your terrain
- Your favourite material
- Our machine up close
- Your questions to our engineers

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# 2021

## Preview: HAAS TYRON Hybrid - Maximum profitability and flexibility!



The highlight: In comparison to the diesel-powered mobile TYRON machines, the shredding process of the TYRON Hybrid is purely electric. For this, the TYRON Hybrid is connected to the power supply via a practical quick-release coupling. Mobility is ensured by a tracked chassis in combination with a small generator. The hybrid can be easily moved to any desired location via radio remote control and then reconnected to the power supply via a quick-release coupling.



## Turnkey HAAS Systems NEW brochure

Major projects and tasks require well thought-out planning. Right from the start, we are at your disposal with fixed contact persons for your project. For the applications waste wood & biomass, waste & substitute fuels, PVC & plastics, sawmill & residual wood and special applications, we offer you tailor-made solutions!



[www.haas-recycling.de/en](http://www.haas-recycling.de/en)



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