

KOMPTECH

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green
efficiency

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RIEGER

PRACTICE

JOHANN RIEGER AND HIS NEW CRAMBO DIRECT

MANAGEMENT

McRECYCLE®

RIEGER

INNOVATION

**ENTERING A NEW ERA:
green efficiency®**



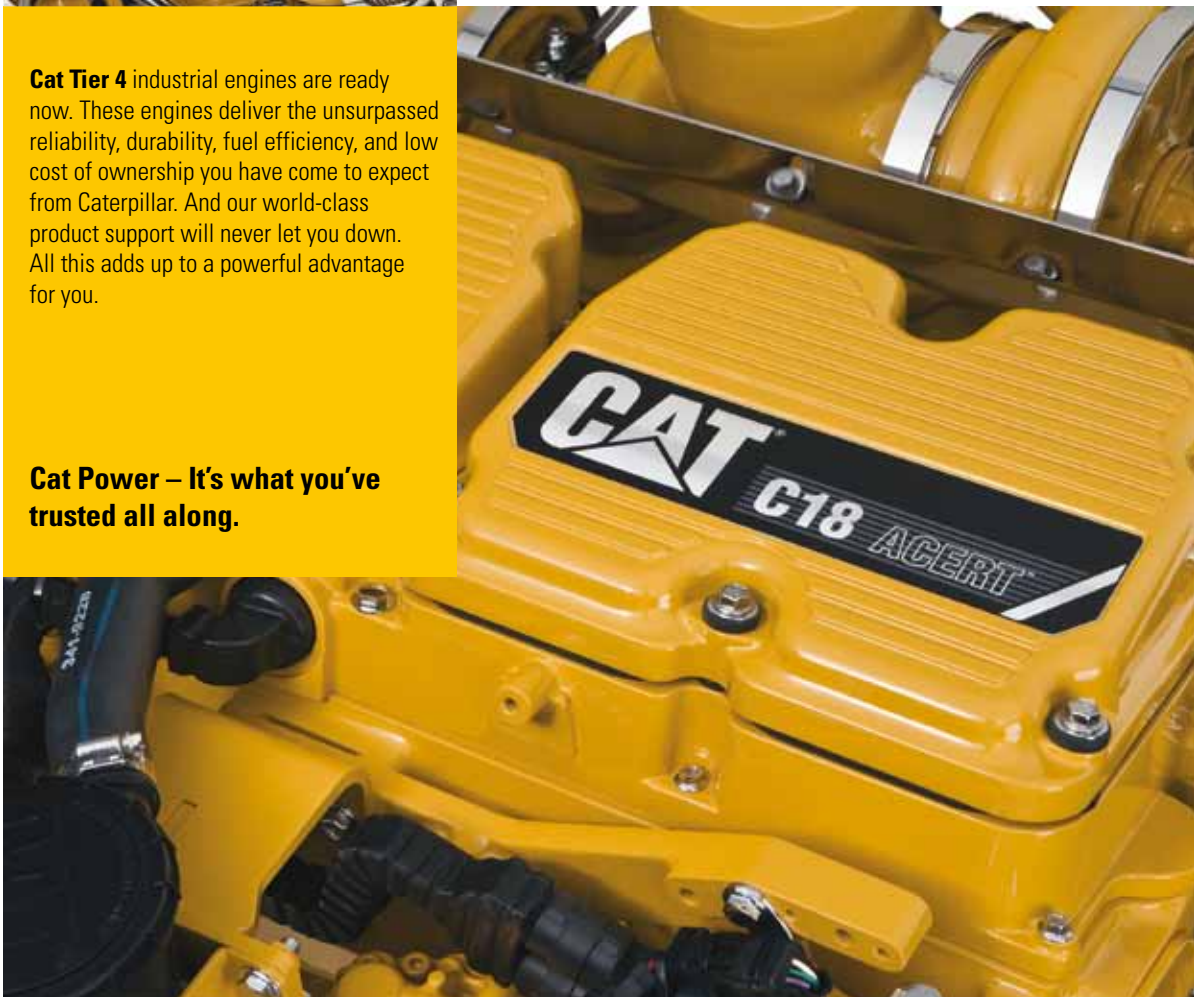
KOMPTECH PRESENTS:



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Komptech GmbH, Kühau 37, 8130 Frohnleiten, Austria
T +43 3126 505 - 0, F +43 3126 505 - 505,
info@komptech.com, www.komptech.com

Editors: Andreas Kunter, Joachim Hirtenfellner, Martin Wellacher

Layout & graphics: Alexandra Gaugl

Photos: Komptech GmbH

THREE QUESTIONS FOR JOSEF HEISSENBERGER



*Josef Heissenberger,
CEO and owner of the
Komptech group*

What does green efficiency® mean?

green efficiency® by Komptech is an innovation programme that gives our machines higher performance and lower consumption, and also uses the latest exhaust scrubbing technologies. The most important feature of this programme is higher efficiency in drive, shredding and material discharge, giving higher output per unit energy and thus reducing energy consumption. Naturally this brings users lower operating costs, as well as helping the environment.

What does that mean in practice?

Lower consumption and energy savings do not need to mean lower performance. Quite the contrary, when technological innovations bring jumps in efficiency, both are possible - lower consumption and higher performance. For example, the Crambo direct with its newly developed mechanical gearbox uses up to 35 percent less fuel than diesel-hydraulic machines, but has higher throughput.

That means that in 5000 operating hours it uses 90,000 litres less fuel – saving much more than 100,000 euros, and 250,000 kg CO₂. Those are respectable numbers – both green and efficient.

What's behind this programme?

At Komptech, we're technicians through and through. But we're not just passionate technicians. We're also husbands and wives, mothers and fathers, grandparents, friends and so forth – regular people, in other words. And so we want the generations that come after us to say that we considered the consequences of our actions. So green efficiency® doesn't just stand for the exceptional economy, quality and productivity of our machines, but is also an expression of our company culture.



After two years of intense development work, Komptech's contribution to a better environment stands firm. green efficiency® is an innovation programme that gives our green machines higher performance with lower consumption.

Naturally they also use the latest exhaust technology to save CO₂ and protect the environment. Sound paradoxical? Perhaps. But sometimes in life you just have to set your mind to something and do it.

As passionate technicians we face up to the challenge every day of making our machines more efficient and thus more capable. Our goal is that every machine that bears the green efficiency® logo really is efficient.

But green efficiency® doesn't just stand for the exceptional economy, quality and productivity of our





ENTERING A NEW ERA: green efficiency®

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machines; it is also an expression of our company culture. It doesn't end when we leave the office, but is a personal concern of each of our employees. Because a movement can only grow when you live it as an attitude. And because making the world a little greener and more liveable starts with each of us individually. ■

For more information see
www.greenefficiency.com.

THE INNOVATIONS IN DETAIL



CRAMBO DIRECT:

- » Mechanical gearbox with the functionality of a hydraulic drive
- » Diesel engine with current exhaust technology (SCR) to level 3b or 4
- » Newly designed engine compartment with maintenance access points on the outside of the machine
- » Quick change screen basket cartridge system
- » Improved drive components and new acoustic design of the engine compartment



TERMINATOR DIRECT:

- » Mechanical gearbox with two manually shifted speeds, reversing function and overload protection
- » Electric drive
- » Newly developed counter comb
- » Improved manufacturing process for wear parts (F drum teeth)



CRIBUS:

- » Electrical drive of all components (screen drum, conveyors)
- » Hybrid drive: Drive power from diesel generator or grid power
- » New drum design with larger diameter
- » WheelGrip power transfer
- » Hopper belt drive on the drum intake side

THE STATE OF WASTE TREATMENT IN EUROPE

Many EU member states are in danger of not meeting mandated recycling targets. Although recycling rates are rising, enormous quantities of valuable resources continue to disappear in landfills.

In 2010 the countries in Europe that recycled the most residential waste were Austria, Germany and Belgium. Overall, 35 percent of municipal waste in Europe was recycled, an increase of twelve percent over 2001. Nevertheless, many countries will find it very difficult to meet the recycling goals legislated by the EU, which require that 50 percent of residential and similar waste be recycled by 2020. A report looked at 27 EU member states, as well as Croatia, Iceland, Norway, Switzerland and Turkey.

Five countries - Austria, Germany, Belgium, the Netherlands and Switzerland - have already met the goal for 2020, but most countries still have far to go. For example, Bulgaria and Romania currently recycle only a small fraction of municipal waste, and will have to increase their recycling by about four percentage points per year in order to reach the 2020 goal - a feat that no country achieved in the years between 2001 and 2010.

The most important points of the report:

- Europe has increased the amount of waste it produces, but also the amount it incinerates, composts and recycles, and has risen in the "waste treatment hierarchy" – albeit more slowly than mandated by law.
- The shift from 2001 to 2010 in the way municipal waste is handled has led to a 56 percent reduction of greenhouse gas emissions from such waste in the EU, Norway and Switzerland, the equivalent of 38 million tonnes of CO₂.



- This improvement is based on materials recycling per se, while organic waste treatment has made less progress.
- Successful countries generally use a range of national and regional instruments. This includes prohibiting the landfilling of biodegradable waste or non-pretreated municipal waste, mandating the separate collection of municipal waste fractions, economic instruments like landfill and incineration taxes, and waste collection fees to create incentives for more recycling. ■

For more information see the EUA report of 2/2013 at www.eea.europa.eu/publications/managing-municipal-solid-waste.

DID YOU KNOW?

Austria (63 percent), Germany (62 percent) and Belgium (58 percent) have the highest **recycling rates**, while Romania and Turkey (1 percent each) and Bulgaria (zero percent) have the lowest.

Lithuania, Norway and Slovenia have the lowest **organic waste share** at less than 20 percent, while Malta has the highest with more than 60 percent.

Austria has the highest **rate of organic waste recycling**, followed by the Netherlands and Belgium, while Romania, Latvia and Turkey have the lowest.

Switzerland has the lowest **landfilling rate** at less than one percent, while Bulgaria has the highest at 100.

Sweden, Luxembourg and Germany have the highest average **tipping fees**.

DEPENDABILITY AS A PRINCIPLE

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story



**"THE CRAMBO DIRECT LET
ME REDUCE FUEL COSTS
BY 35 PERCENT."**

Johann Rieger

*Low consumption, high performance, flexible use -
the Crambo direct is just what Johann Rieger was looking for.*

Dependability has special importance for Johann Rieger. With it, he has gained the trust of customers and staff, and it has propelled his family-owned business into the first ranks of Austrian waste disposal companies.

It might seem odd to speak of a 150-person operation as a family business, but that's what it is. The hauling company founded in 1925 laid the groundwork for the success story of Rieger Disposal.

From coal and heating oil sales the company moved into the transportation and container business, and then developed into an Austria-wide disposal company with a very broad range of services. Today, it handles complete disposal services for household, commercial and hazardous waste, and moves 250,000 tonnes of material each year. The company collects, recycles and recovers, focusing on sorting materials like paper, cardboard and packaging, and on treating waste wood.

Johann Rieger Junior is the fourth generation of his family to run the business. Even as a small child he knew he wanted to follow in his parents' footsteps. "I joined the firm right after leaving school, but I got no preferential treatment. My father was strict about that," says Rieger. "I went up through the ranks. First I drove a collection truck, then I spent many hours loading the shredding system with a front loader, and finally ended up in the office at 25."

RELATIONSHIPS MATTER

Although the former colleague is now the boss, he has an almost family relationship with the employees and has remained down-to-earth. "I need to be able to depend on my staff. If the people running the machines aren't on my side, I can forget the whole thing." It's a two-way street, and Johann Rieger has an open ear to all employee concerns. With dependability and handshake trustworthiness, the company has won major customers across Austria.

"When the phone rings on Saturday because a customer has a problem, we take care of it, even if I have to get behind the wheel myself," says Rieger of his approach to customer relationships.

WASTE WOOD FOR MATERIAL RECYCLING

The waste wood business is getting crowded but the company has a solid footing in it. "Our broad base is naturally an advantage here. By collecting commercial, municipal and construction waste, as well as taking waste from other collectors, we take in 100,000 tonnes a year," says Rieger, referring to the importance of this business area. He sees a clear trend to material recycling. "70 percent of the waste wood we get is recycled, the rest is used for energy. That's in line with official policy, which prefers recycling over incineration, and is also better business for us." Rieger sells the reclaimed wood to composite board manufacturers. They need the wood shredded to a certain size and cleaned of metallic contraries.

ONE DOES THE JOB OF TWO

Recently a green machine starting doing this job, more precisely a new Crambo 6200 direct. It replaced two red machines. They weren't able to cope with the growing volume of used wood, and had to be sent into retirement. "We used to shred in two steps, with a pre-shredder and shredder, both of them 350 hp diesel-

hydraulic machines, with a magnet between them. Now we have a Crambo direct with mechanical drum drive. It delivers the same throughput but does it with 45 litres of diesel fuel per hour instead of 70 like before."

NEW POSSIBILITIES WITH THE CRAMBO

Johann Rieger is happy about the versatility of his Crambo. "Shrubbery and rootstock shredding used to be a sideline we had to do because customers wanted it done, not because we wanted to do it. Our machines weren't really suited to it. But since the word is out that we have a Crambo, I get daily requests for rootstock shredding." In addition to the flexibility provided by quick screen basket changing, the machine's mobility is also important. "We have several locations and also provide services off-site, so the trailer variant is ideal for us.

Dependability in a machine is also very important to Rieger. For several weeks he and his team tested the Crambo to evaluate how reliable it and its manufacturer were, before he decided to buy it. "My customers can depend on me," says Johann Rieger, "and I can depend on this machine." ■



For a clean environment
www.rieger-entsorgung.at

Rieger Disposal works Austria-wide in the disposal of municipal, commercial and hazardous waste. The company is headquartered in Salzburg, and also has locations in Vienna and Linz. Currently the headcount is about 150, and annual revenues are just under 30 million euros. The company has some 90 trucks, many of them special-purpose, and around 4000 containers.



TEKNOXGROUP AND KOMPTECH JOIN FORCES



f.l.t.r.: Christian Kulmer (Komptech), Avgust Kladusek, Drazen Jergovic (Teknoxgroup), Josef Heissenberger (Komptech), Lino Tedeschi (Teknoxgroup), Josef Imp, Ewald Konrad (Komptech), Pedrag Stojanovic (Teknoxgroup)

Southeast Europe is an emerging market in the waste disposal industry. In the coming years this region will offer many business opportunities in waste disposal, recycling and waste-to-energy production. Komptech has recognized these opportunities, and is now partnering with Teknoxgroup.

Teknoxgroup is the authorized Caterpillar dealer for Slovenia, Croatia, Serbia, Bosnia and Herzegovina, Montenegro, Kosovo, Albania and FYROM (Macedonia). Komptech is well known for its innovations in the field of waste management and recycling, and has a sound reputation. To address the growing opportunities in Southeast Europe, Komptech saw a need to act quickly and partner with a distributor who is already well established in this market. The Komptech brand was already well known in Slovenia, due in part to its production plant in Ljutomer, but lacked a sales and service organization with the coverage needed to make better use of the potential of this region.

With extensive and reputable sales and service networks, personnel who are very well connected with the customer base, as well as a growing interest in green technologies, Teknoxgroup is the ideal partner. With the deep expertise of both Caterpillar and Komptech in the waste management industry, Teknoxgroup can deliver synergies in the territories it covers. Komptech Area Sales Manager Christian Kulmer put it succinctly: "Teknoxgroup has everything we're looking for in a partner – experience in special machine sales, a full-coverage service network and a highly motivated sales team. The fact that for years now Komptech has used CAT® engines is another cornerstone and a major advantage for a successful partnership." ■



Teknoxgroup

www.teknoxgroup.com

PAYBACK TIME

UK company A.W. Jenkinson cut its fuel bill by 70 percent with its new Toptun X53, while more than doubling productivity. Robert Jenkinson tells how. ➔

In practice
A.W. Jenkinson



Robert Jenkinson from A.W. Jenkinson Forest and Julian Lamb from Finning UK at the handover.



A.W. Jenkinson Forest Products is active in the processing and distribution of a wide variety of wood products across the UK. The Cumbria-based company runs a fleet of over 550 vehicles and handles over 2.8 million tonnes of material each year.

www.awjenkinson.co.uk



A.W. Jenkinson
FOREST PRODUCTS

As the demand for peat-free compost grows, it has become increasingly important for A.W. Jenkinson to process its rows of 0-10 millimetre bark fines more efficiently. The Komptech Topturn X53 is designed to straddle and turn compost rows, breaking down the material more evenly, increasing airflow and accelerating the composting process. Following a malfunction of the machine previously used to aerate the compost, A.W. Jenkinson approached Finning, the UK Komptech dealer, about a new one.

SALES SUPPORT MADE THE DIFFERENCE

Commenting on the deal, Robert Jenkinson, Production and Operations Manager at A.W. Jenkinson said, "The sales support was excellent, and they recommended the optimal machine and modifications after a comprehensive review of our site at Clifton Moor. Finning also invited us to the Komptech factory in Austria while the machine was in production. This gave us fantastic insight into the build quality of the unit, as well as the opportunity to ask the engineers

questions about how the Topturn functions and what safety access options were available. The partnership between Finning and Komptech was also an important factor in this deal. The nearest Finning depot is about 40 minutes from our site, so the quality of the machine, combined with the service coverage offered by Finning, really gave us the confidence to progress with this investment."

DOING MORE IN LESS TIME AT LOWER COST

The Topturn X53 acquired by A.W. Jenkinson is equipped with tracks as opposed to wheels, to cope with the uneven surfaces where the machine will be in operation. It can process up to 5,000 cubic metres of product per hour and it has been using only 20 litres of fuel to turn the 7,500-8,000 cubic metres of bark fines on site at any one time, in approximately 90 minutes. This compares to the 110 litres of fuel needed to run the old unit for the full day required to process the same quantity of composting material.

"WE SAVE OVER 50 PERCENT OPERATING COSTS"

Robert Jenkinson

Discussing the A.W. Jenkinson investment in Komptech equipment, Julian Lamb, Strategic Account Manager for Finning said: "The Topturn X53 will make a big difference to the bottom line of the company and the payback will be swift. The fuel savings alone are



The Topturn X from Jenkinson at work.

significant, thanks in part to the specially configured CAT® C9 engine. The improved processing speed and the acceleration of the composting will also undoubtedly be financially positive.”

“The environmental implications of the deal are also significant. A.W. Jenkinson is a leading supplier of peat-free compost, and the improvement in its productivity will increase the availability of a higher quality environmentally friendly product, as an alternative to traditional peat-based compost.”

FULL SERVICE PARTNERSHIP

Following its acquisition of exclusive dealership rights to sell and service the full range of Komptech products, Finning can now offer full end-to-end service for the waste sector. The combination of Caterpillar and Komptech equipment and the comprehensive nationwide service coverage provided by the largest fleet of mobile engineers in the industry, give Finning a significant advantage over competitors in the waste industry.

Julian Lamb continues, “Komptech has always had a reputation for producing high quality machines, and now with the increased service coverage offered by the Finning branch network, potential customers have greater confidence. It makes a big difference to the customer to know that any routine maintenance or servicing can be completed more efficiently.”

Regarding the possibility of future A.W. Jenkinson investment in more Komptech equipment, Robert Jenkinson said, “We’ve owned the new Topturn for four months now, and the relationship with Komptech has been very positive. The after sales support they provided has encouraged us to look into other Komptech machines, and I anticipate that future investment is a real possibility.”

THE TOPTURN AROUND THE WORLD



Four new compost turners have found their way to Thailand, where they are helping turn floating plants into valuable soil improver.



Iran attaches great importance to environmental protection. The world’s largest composting facility is in Iran.



A dark green Topturn X also works in Dane County, Wisconsin.

THREE QUESTIONS FOR CHRISTIAN OBERWINKLER



Christian Oberwinkler
CTO Komptech Umwelttechnik GmbH

What was the motivation behind changing a machine like the Crambo, which already worked fine?

The Crambo formerly used hydraulic drum drive. This had outstanding functional advantages, like the ability to adjust the drum speed steplessly, or reverse it if it got stuck. But hydraulic drive has the disadvantage of low efficiency. As part of our green efficiency® sustainability programme, and also because of rising energy prices, we started to work with a well-known transmission maker on an ambitious project - the development of a new drive concept combining the efficiency of mechanical drive and the functionality of hydraulic.

What are the benefits of the new system?

Up until now manufacturers offered only highly efficient (mechanical) or highly flexible (hydraulic) drives. With this development we have succeeded in combining the advantages of both, setting a new benchmark.

Users will see clear advantages when they refuel the machine, since with mechanical drive fuel consumption is reduced by up to 35 percent. In addition to energy savings, the machine also gives notably better performance. For example, at top drum speed it now has 50 percent higher torque, giving a corresponding increase in throughput.

From prototype to dependable series production machine in just one year? How was that possible?

The new drive train went through several intensive testing phases before going into production, including 1000 hours endurance testing under extreme load on a test bed. The load signal was measured in actual operation and then artificially applied on the test bed. After the successful test stand run came extensive practical testing, and currently numerous Crambos with the new drive train are in use by customers.



A new product might work great in simulation. Test bed runs are closer to reality, but only benchmark testing shows whether a machine can succeed in actual use. The new Crambo wins on all counts.

Everything was ready: Front loader and grabber crane for loading, a scale for measuring throughput, and plenty of green cuttings, rootstocks and used wood. There were also two machines, ready to go to the limit in a head-to-head comparison. In one corner, the challenger: The new Crambo 5200 direct, green and packing 446 hp. In the other corner, the lead competitor, in orange and with 40 more hp under the hood.

ALL MECHANICAL DRIVES ARE NOT CREATED EQUAL

Both machines use mechanical drum drive, but the version on the Crambo offers many more possibilities. On the orange machine, once the engine starts up the drum continuously rotates in the same direction at the same speed. On the Crambo, a load-dependent 2-speed gearbox automatically selects the right speed,



G ON POINTS

and uses programmable reversing to move things around better in the shredding chamber. There is also a great different in the machines' safety and resistance to damage. In orange, there is a hydraulically pre-tensioned counter comb that makes way for unshredded material if there is a blockage. In green, there is the technically and functionally much safer approach of the Crambo direct. In the event of a blockage a clutch immediately disengages the drive train from the shredding unit, shifts to reverse, and then resumes shredding at the right speed.

GOAL ACHIEVED

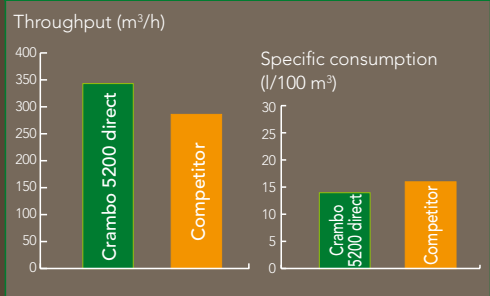
Does this translate to higher performance, or more generally to more efficient machine use? Most definitely. In its most important application, shredding green waste, the new Crambo direct displays its superiority over the competition, giving almost 20 percent higher throughput for 10 percent lower specific fuel consumption. The large feed hopper and much more aggressive intake provided by two shredding drums make a big difference, since two drums are

definitely better than one for pulling in bulky material. The user needs only load the material into the hopper; the Crambo direct does the rest. The difference was even more marked with tough-to-shred rootstocks – 80 percent higher throughput and 20 percent lower specific fuel consumption. There remains waste wood shredding, in which both machines achieved similar high throughput rates, made possible only by really big loading equipment. A consumption of just 0.16 litres of diesel per cubic metre shredded material shows the efficiency of mechanical drive.

In closing it should be noted that most of the competition took place at a high general performance level, far higher than anything other manufacturers could achieve. Naturally peak performance isn't required every day, but with the Crambo direct the user can be secure in the knowledge of having a new, yet mature machine with great reserves of performance. ■

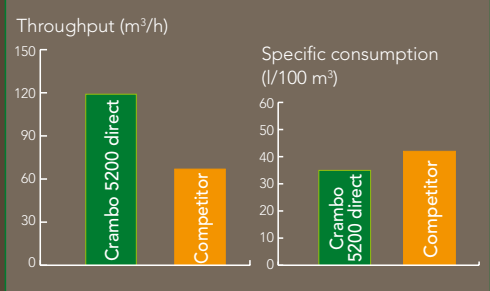
SUPERIOR IN THE DETAILS

APPLICATION RESULTS, GREEN WASTE



In its most important application, shredding green waste, the Crambo direct achieves almost 20 percent higher throughput. Specific fuel consumption is more than 10 percent lower.

APPLICATION RESULTS, ROOTSTOCKS



Big differences in rootstock shredding: The Crambo direct gives 80 percent higher throughput with 20 percent lower specific fuel consumption.

CRAMBO DIRECT

Five reasons you'll love the new Crambo

The Crambo is one of the best machines for shredding all types of wood and green cuttings. In addition to the existing hydraulic-drive model there is now a mechanical-drive version, the new Crambo direct.

The drive train of the Crambo direct combines the functionality of hydraulic drive with the efficiency of mechanical drive. That means top economy, while retaining all product benefits like overloading protection, reversibility, adaptation to the material etc. Currently no other direct-drive shredder on the market offers these benefits. With the Crambo direct, Komptech has set a new standard.



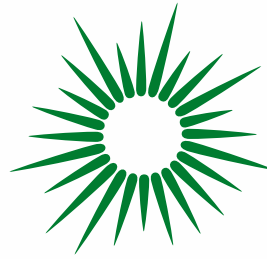
01 Ready for anything

In the extra-large shredding chamber, two 2.8 m counterrotating toothed drums ensure positive feed. From bulky branches and cuttings to rootstocks of any size to used wood contaminated with contraries, it shreds everything down to a defined granular size.



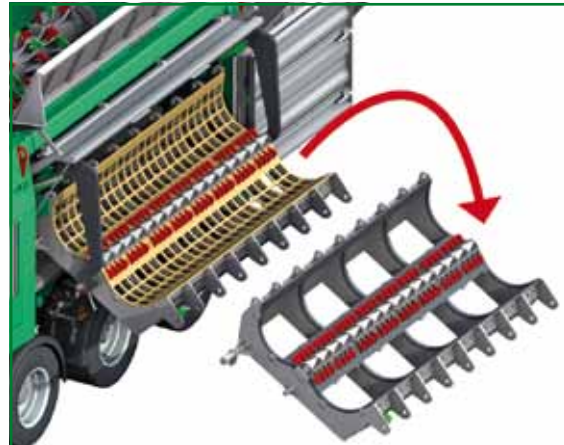
02 Clean source of power

The Crambo direct is powered by a Caterpillar® Level 3b or 4 diesel engine with the latest exhaust scrubbing. The whole engine compartment has been redesigned, and now offers even easier service and maintenance access. Special insulation reduces noise emissions to a minimum.



**green
efficiency®**

by **KOMPTECH**



05 Granular size as desired

The degree of shredding can be adjusted flexibly, either by changing the screen basket, or even more conveniently by changing the entire screen basket cartridge - and the machine is ready for a new job. The Bio-Basket XL is also new. It lets operators get more fuel product out of green cuttings, while reducing their own fuel consumption in the process.



04 Top drive efficiency

The new Crambo direct has a drive train that combines the functionality of hydraulic with the efficiency of mechanical drive. That means top economy while retaining all benefits like overloading protection, reversibility, adaptation to the material etc.



03 Operation made easy

The new operating panel uses symbols that are clearly understandable without text. The menu guidance follows a logic any user can understand, and the screen shows all machine functions graphically. This virtually precludes operator error.

CRAZY LIKE A FOX: 1 LITRE PER KILOMETRE



Monday morning is particularly feared at Komptech, because CEO Josef Heissenberger has had all weekend to come up with ideas which he now wants to share. And this time he's outdone himself.

At the Monday meeting of Technology Director Heinz Leitner and his development team, Heissenberger calls for a machine that cuts fuel consumption in half - a kind of 10-litre-Crambo.

It's not easy to faze Heinz Leitner. He's designed 800 hp machines like the Axtor 8012, and 18 meter screens. So you could say he's

a Formula 1 machine engineer. But this time, Komptech founder Josef Heissenberger has made him pause for reflection: "If we managed that, it would be a quantum leap for waste treatment." But he also sees the opportunity to give a huge boost to "Technology for a better environment" - Komptech's motto. "It has to be possible to reduce

fuel consumption at least by half," says Heissenberger and adds, "so think about how it could be done. It doesn't have to be tomorrow, but the day after tomorrow will arrive sooner than we think, so we should go ahead and start today."

Heissenberger's inspiration is none other than VW boss Ferdinand Piëch. When Piëch

E



Komptech CEO Josef Heissenberger explains his idea of the "10-litre-Crambo" to Development Director Heinz Leitner.



2002 - VW XL1 study
Source: www.volkswagenag.com



1994 - Crambo study



2004 - VW XL1 study
Source: www.focus.de



1999 - The first Crambo



2010 - Presentation of the VW L1 (Detroit)
Source: www.thedetroitbureau.com



2012 - Rendering of the Crambo direct



2013 - The L1 is ready for production
Source: www.autobild.de



2013 - Presentation of the Crambo direct

sketched out a 1-litre-car in 2002, he put the company under a lot of pressure, and changed car design permanently. Urged on by his ambition, VW developers made great progress. It took a few years before the first semi-production execution of the idea could be presented, but big ideas need time to mature. Like the idea of the "10-litre-Crambo." ■



ESBEN HEGELUND IS KEEP

It was really by accident that Esben Hegelund got into the chipping business. In 1999 a “once in a century” storm caused massive treefalls throughout the country. Hegelund was there with his first small chipper. Today, 14 years later, he’s the biggest biomass producer in Denmark.

It might sound strange, but Denmark needs more waste. The country has a long tradition of incinerating household waste and using the heat to generate electricity and feed the extensive district heating network. Denmark imports substantial quantities of waste from neighbouring countries, but there is still a demand for woody biomass of high calorific value to keep incinerators burning hot. This evens out the varying heat value of different kinds of waste and ensures continuous heat delivery.



Wood chips ready to go to the heating plant.

EHJ ENERGI CONVERTS WASTE INTO BIOFUEL

Many of these thermal power plants are customers of EHJ Energi. The company produces over a million cubic metres of biofuels a year from wood trunks, forestry residue, rootstocks and green cuttings. Demand has grown steadily over the years, and so has the company and the number of Komptech machines it uses. Its two Crambo 5000 low speed shredders, Stonefex 3000 stone separator, Mustang tracked drum screen and two Chippo 5010 H chippers bear witness to the

company’s specialization as a biofuel maker. They are also evidence of trust in the machines’ manufacturer and its Danish distributor Akxel Benzin A/S, which has proven to be a capable partner in all areas.

SOMEBODY HAS TO BE FIRST

“One of the reasons for our success is certainly the fact that we have more experience because we were the first,” says Hegelund. “We had the first truck-mounted chipper, although lots of people said that was the wrong way to go. Now it’s the only thing anybody uses in our business.” It’s the flexibility that Hegelund appreciates about Komptech’s mobile chippers. “With the Chippos I can go anywhere, including in the forest, and can work in tight spots and on soft ground with no problems.”

The company has a competitive edge in its knowledge of chipping and also in working with rootstocks.

“If you remove the soil and stones from rootstocks, they’re great for making a fuel with high calorific value,” says Hegelund, adding “you just have to know what you’re doing, and have the right machines for the job.”

FROM ROOTSTOCK TO FUEL

Before the rootstocks end up in the incinerator as “root chips” they have to be shredded and cleaned of impurities. The two tough, low-speed Crambos shred them down to the desired chip size. The Mustang drum screen removes earth, sand, stones and other foreign matter. Its tracked chassis makes it mobile on difficult ground. The fines that it separates out are not waste, but a “bonus material” that makes a nutritious topsoil. What’s



Esben Hegelund and his Chippo 5010 turn shrubs into valuable biofuel.

left after screening is the biofuel. If there are still too many stones in it, Esben Hegelund runs it through the Stonefex to get them out, and ends up with a high-quality, highly pure fuel.

“YOU JUST HAVE TO KNOW WHAT YOU’RE DOING, AND HAVE THE RIGHT MACHINES FOR THE JOB.”

Esben Hegelund

CHIPPER BY CHANCE

Back to 1999 It was a force of nature - literally - that got Esben Hegelund into the chipping business. At the time he worked as an earthworks service provider for drainage canals,

KEEPING DENMARK WARM

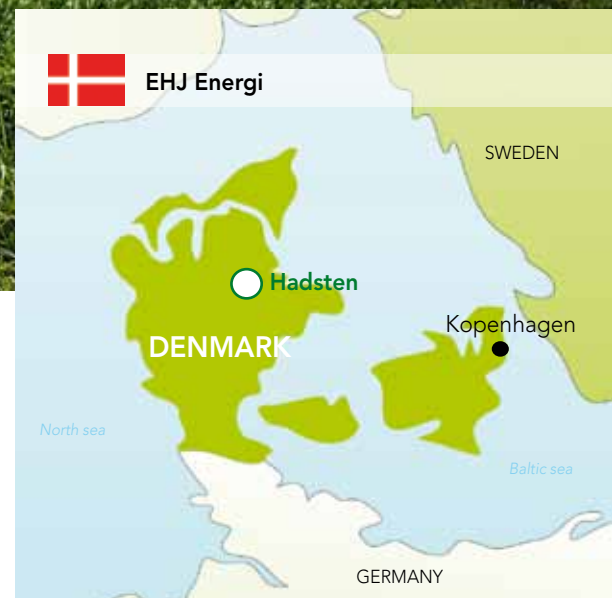
In practice
EHJ Energi



but due to the severe competition he was already looking around for something else to do. On the morning of 3 December 1999, after a gale blew through the country, Hegelund saw opportunities where others saw just destruction and chaos. He bought his first chipper and set to work. "My idea was to make biofuel for grate firing systems. I got a contract with a heating plant, and things took off from there faster than I expected," says Hegelund of his decision. And there was plenty of work out there - according to official estimates there were 3 million cubic metres of trucks to be disposed of, equivalent to 7 years of normal wood harvests.

A decade later, 22 motivated employees take care of over 750 customers throughout the country, making EHJ Energi Denmark's

biggest biofuel supplier. These days Esben Hegelund spends most of his working day on customer relations and management tasks, but he still knows exactly how to use the machines. "In the early years I would be out from early to late, running the chipper or the front loader, and if need be I still get behind the wheel," says Hegelund, adding "After all, I have to keep Denmark warm." ■



EHJ Energi in Hadsten, DK offers all forestry management services, from clearing to harvesting to producing various biomass fuels. At a million cubic metres of fuel, the company is the Denmark's largest biomass producer.

EHJ ENERGI
www.ehj-energi.dk

IN WINE IS TRUTH



Benoit Hillairet from Hantsch, Jean-Pierre and Bernard Langla from La Grande Jaugue

The Bordeaux region has been famous for its wines for centuries. Vintners here have a certain way of doing things. You might call it “conscientious.” Much of the harvesting and all of the grape sorting are still done manually.

We visited a local vineyard. Here, environmental sustainability is writ large. To attract beneficial birds and insects, there are indigenous trees and plants between the vines. The vineyard even has its own water-treatment system. And 10 years ago, the vineyard switched from chemical fertilizers to compost. The influence on the quality of the vines, grapes and wine has been nothing less than astonishing. The vineyard uses compost as fertilizer before planting new vines, and also applies fine compost three times a year to feed the soil.

Wine is famously sensitive to soil composition, and so it is only natural that much depends on the quality of the compost. The better the compost, the better the disease control and soil quality. High quality compost also needs to be applied less frequently, so agricultural machines don't have to pass

between the rows of vines as often. Also, if the compost is consistent, the vintner gets homogeneous soil over the entire vineyard.

CONSISTENT GROWTH

To source the high-end compost it requires, the vineyard turns to regional supplier La Grande Jaugue. The vineyard found their compost to be of a consistent high quality, with the composition they need for their 45 hectares of grapevines.

La Grande Jaugue has been making compost since 1997, and focuses on a quality product for discriminating customers who need very consistent and healthy growth, like golf courses, football stadiums – and upscale vineyards. Located in St Médard en Jalles near the city of Bordeaux, the company is part of the diversified BTPS group. La

Grande Jaugue director Bernard Langla was involved in setting up the composting operation from the start. Today, with 12 employees it processes 54,000 tonnes of green waste per year and has annual revenues around € 4 million.

"WE'VE LEARNT THAT WE NEED TO STAY AHEAD OF THE COMPETITION, AND WE'VE CHOSEN THE QUALITY APPROACH."

Bernard Langla

The company puts much effort into producing compost of high quality. It is by no means the cheapest on the market, but the quality difference is immediately obvious to customers who compare La Grande Jauge's product with that of lower-priced competitors. The effort has paid off, and Bernard Langla is proud of the reputation the company has built as a quality composter for high-end



Jean-Pierre and Bernard Langla inspecting the compost.



Bernard and Jean-Pierre Langla testing the vintage.



The best wine is made in the south of France...



...with some help from the Crambo.

applications. He is also proud that he has been able to convince many vintners to switch from chemicals to composting, and numbers among his customers some of France's most renowned wine-makers in Bordeaux and Burgundy.

Meanwhile the reputation of the company has even spread to Morocco, where the quality of La Grande Jaugue's compost is even used for rice plantations.

CONSTANT IMPROVEMENT

Machines from Komptech – two Crambos and a Multistar – are a major part of operations at La Grande Jaugue. Langla is happy with the machines, and also with the way Komptech and its French distributor Hantsch listen to him as a user and address his concerns. Komptech and Hantsch have a long history together in France, and it shows in how they treat customers. As Langla put it, "I like how Komptech strives to keep up with changes in the market and how they listen to their customers."

And Bernard Langla is not one to be shy about offering suggestions for improvement; quite the contrary, as a person who formerly oversaw the construction of airports, he is the sort of person who is always looking for ways to make things better. This is especially true when it comes to natural energy and sustainability, which are core interests of his. For example, he uses the heat energy from compost to heat the company's buildings, and is currently looking into ways to convert used grapevine plants into a compost specifically for vintners. It's an approach that benefits La Grande Jaugue, vintners throughout the south of France and drinkers of some of France's finest wines. ■

Q & A

Customers have questions - Komptech's specialists have answers.



Manfred Harb
(Group Service Manager)

answers:



To keep all of our worldwide sales and service partners educated on our machines, since 2007 we've maintained a professional training programme, the Komptech Academy. Just last September for example, we trained over 60 American attendees in sales, service and spare parts on-site. Many of them have a lot of experience with this kind of training, and their feedback that our training is at the level of Caterpillar or Volvo is a great confirmation of our efforts. We're also constantly working to adapt our worldwide spare parts stock, so that when we bring new machines onto the market we also stock up on parts. This is rounded off by technical support from our own facilities, whose specialists are always available to back up our distributors on special questions.

I've read that Komptech is bringing some new products out. I'm especially interested in the products from the new green efficiency® line. How will you make sure that all your distributors around the world will be able to provide parts and service for them?

Pablo S., online

When the counter comb tooth on the Terminator is worn out you always have to replace the entire tooth, even though the back part is still like new. Other than repeated armoring, is there another way to avoid always having to replace the entire tooth?

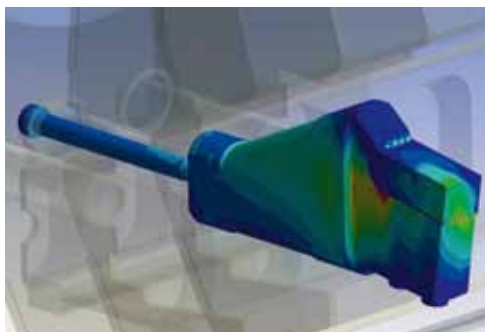
Manuel H., by phone



Franz Hierz
(Development Engineer)

answers:

We've been asked this question many times and a year ago set to work to address it, which we have done by developing a replaceable wear piece. This involved meeting two contradictory goals. It has to have a very robust mounting in order to take very high shredding forces. At the same time, the wear piece needs to be quick and easy to replace. We were able to do both through an innovative solution. The wear piece is held fast in both directions by a flush mounting, whose opening angle makes it very easy to change out. Long-term testing on a customer machine showed that the new wear plate can stand up to the toughest industrial and bulky waste. Customers have already told us that the low price of the wear plate makes repeated armoring of the cutting edges uneconomical by comparison.



McDonald's



Page-one
story

McRECYCLE®

Environmental protection and sustainability have been talked about for many years. McDonald's Austria is now proving that these aren't just matters for government and industry. We spoke with company executives Ursula Riegler and Holger Hirmann. ➔



Ursula Riegler
 Department Head
 Communications &
 Corporate Responsibility



Holger Hirmann
 Director
 Real Estate & Development

WHAT IS McDONALD'S DOING FOR THE ENVIRONMENT?

Ursula Riegler:
 Environment and energy are one of the four cornerstones of McDonald's sustainability strategy. Our McRecycle® recycling strategy has been in place for 21 years now. Environmental protection has always been part of our business activities, and we try to minimize and reduce our impact on the environment in this way. To do this, we have a very clear worldwide environmental strategy.

SO YOU COULD SAY THAT McDONALD'S IS GETTING GREENER - SO SUSTAINABILITY IS A REAL COMMITMENT, AND NOT JUST GREENWASHING?

Holger Hirmann:
 Definitely. Back in 1997 we started converting the used food oil from our restaurants into biodiesel for our trucks. Since January 2011 all of our restaurants in Austria have been powered with 100% green energy from domestic water power, through which we save over 19 million kilogrammes of CO₂ annually. Since 2007 we have had a uniform standard for our buildings which we drew up together with the "klima:aktiv" organization. It includes the latest LED lighting, integrated energy recovery systems, geothermal heating and cooling, and much more. At least 25 measurement points per restaurant ensure that our energy use is constantly monitored and optimized. We constantly work to improve our systems. Although, to be honest, there isn't much more room left for improvement!

WHAT MADE McDONALD'S DECIDE TO DO THIS?

Ursula Riegler:
 Naturally, societal pressure and increasing awareness have contributed to rapid development, and sustainability is a major concern at many companies, not just McDonald's. But from the opening of the first Austrian McDonald's in 1977, the chain has followed a consistent environmental strategy at the direction of the company founder himself. Our strategy extends from raw materials production to packaging materials to the recycling of all waste at our restaurants. In fact, since 1992 McDonald's has recycled about 95 percent of its waste.

WHAT ARE THE MAJOR ELEMENTS OF McDONALD'S CORPORATE RESPONSIBILITY?

Holger Hirmann:
 Our sustainability strategy rests on four cornerstones. The first is our quality requirements, from raw materials to inspecting the final product. The second is McDonald's role as a good place to work and build a career. The third, resources, addresses environmental concerns. Working from an environmental concept, we look at all the major issues such as systematic energy management, recycling, and innovative logistics solutions. The fourth cornerstone is our social responsibility. This includes initiatives like support for Ronald McDonald children's aid, promoting exercise and sport among young people, and our efforts to integrate employees from immigrant backgrounds and the physically challenged. Societal developments also require new standards and processes in our company.

100%
 green energy

This restaurant is powered 100% with green energy from domestic water power.



IS IT POSSIBLE TO MEASURE PROGRESS IN THIS AREA OR IS IT JUST A GUT FEELING?

Holger Hirmann:
 All of the technical activities are naturally measurable, especially in those concerned with energy and building management. Naturally it is always possible to make improvements. And naturally positive news of new steps we take for environmental protection and sustainability give customers and the public a better "gut feeling" about us in general. Of course, our goal is that all of our activities are useful,



and are noticed and appreciated by customers. We regularly survey internal and external stakeholders, to evaluate and get input on our activities.

HOW DO YOU GET EMPLOYEES ON BOARD WITH THIS? WHAT SPECIFIC MEASURES DO YOU UNDERTAKE?

Ursula Riegler:
Naturally, any change in attitude has to start with our over 9000 employees. So in every restaurant there is an energy saving catalogue that we follow rigorously. This is also part of our training effort. In the restaurants there are also people responsible for specific areas, like energy and recycling. Naturally, the best way to make sure the strategy is broadly accepted by employees is to include them in it, so at workshops we gather new ideas from our people. We also continuously inform them on current measures. Sustainability affects all departments and locations, and everyone can and should contribute. For example, there is a paper-saving competition between departments, and we're working on developing our Car Policy towards alternative fuels.

WHAT DO CUSTOMERS SAY ABOUT ALL THIS? HAS YOUR TARGET GROUP CHANGED AS A RESULT?

Holger Hirmann:
Naturally we ask customers as well as non-customers what they think, in order to evaluate perceptions of our efforts. We also ask stakeholders in government, business and NGOs about their perceptions. Strong supporting communication naturally creates awareness, and there are always things we can improve there. For example, most people in Austria know that for some time we've been using 100% Austrian beef for our products, but it still hasn't gotten through to everyone. In recent years the company has definitely "grown up" some. Although young people are naturally still our largest target group, the quieter look of our restaurants, numerous McCafes and additional products have meant that now even seniors hold breakfasts and club meetings here. We used to almost never get seniors in. More and more businesspeople are taking advantage of our free WLAN and using our restaurants as their offices. ■

More information at www.mcdonalds.at. The latest sustainability report is available at www.mcdonalds.at/downloads/company/McDonalds_Download_Nachhaltigkeitsbericht.pdf



McRECYCLE®

An integrated environmental concept has been in place since 1992

- 10 percent waste reduction annually since 1993
- Recycling of up to 95 percent of materials
- 7 to 1 paper to plastic packaging ratio
- 72 percent of sandwich packaging is made of recycled paper
- Optimum disposal system for very good waste separation
- Biodiesel from used cooking oil (2002 to 2010):
 - o Savings of 4.9 million kg CO₂
 - o Production of 500,000 litres biodiesel
- Rail instead of road: Elimination of 800,000 truck kilometres per year
- 100 percent of energy sourced from domestic water power, saving 20 million kg CO₂ annually
- 2013 target: Reduce restaurant carbon footprint by 60 percent
- All new buildings since 2010 are "klima:aktiv"



McDONALD'S AUSTRIA

Status of 2012

- 8,900 employees in 184 restaurants
- 400 new jobs in 2012
- 157 million guests
- 548 mill. euros sales (+6.2%)
- 40,000 Austrian farmers as suppliers
- 100 percent Austrian beef



Danijel Prevolšek and his Rasor 5400 in Puconci

System
technology

A CLEAN SHAVE

Rasor shaves trash into fuel in Slovenia - with 54 blades.

The Komptech Rasor finely shreds residual waste from 100,000 households in and around Puconci, Slovenia, to make a waste-derived fuel of premium quality. The rotor with its sharp blades turns at 8 metres per second, cutting film, paper, cardboard and textiles into blowable pieces. These are blown through 100 metre feeds to cement kilns, which they heat to 1600°C. The granular size is 30 mm - not quite as small as the trade term "fluff" would make you think, but small enough for the job. Komptech's technology shaves it fine, without foam or gel, but with some steam involved - literally, because if you look closely you can see water leave the warm Rasor output material in the form of steam.

MORE THAN JUST WHIRLING BLADES

"The fuel quality is one hundred percent," says Danijel Prevolšek, Drava Project leader at the Puconci MWTF. And the Rasor is a hundred percent fit for the system.

For one thing, in concert with Terminator, drum screen and Ballistor it can work to maximum advantage. For another, at 27,500 tonnes residual waste per year Puconci is a smaller size mixed waste treatment plant, ideal for the Rasor. But Komptech's machine and systems technology are more than just razor-sharp blades - they are unbeatable in investment and operating costs. Casting a glance at the competition, that means no chance for comets and no chance for planets!

LIVELY SALES OF RASOR-MADE RDF

The fuel made by the Rasor is in high demand for the rotary kilns of cement plants near and far. The first large-scale RDF processing operations were set up in Central Europe in 2005, and since then RDF has become a commodity that is in demand internationally.

EU regulations no longer limit the export and import of this material, since it is used as a fuel without leaving slag that must be disposed

of, unlike waste for incineration. And this doesn't even take into account the fact that after 100% of the energy is extracted, 100% of the material is used as an admixture in the cement.

SUPPLY BOTTLENECKS LOOM FOR CEMENT PLANTS

Despite this complete thermal reclamation of RDF energy content, some cement plants are threatened by undersupply of the fuel. The current low rates for disposal at many Central European waste incineration plants create an incentive to simply send waste there. It is a less effective way to deal with waste, but the dumping prices make it hard to resist. Yet these incinerators get miserable energy output, often less than 20 percent of the energy in the waste. The incinerator lobby doesn't like to hear this, and instead prefers to talk about individual peak efficiencies that can happen in the winter during maximum heat demand, but that cannot compare with the efficiencies of rotary kilns at cement plants.

DRAVA AND KOMPTECH

In Puconci the transaction between Komptech and its customer Drava was successful. "If I like the way a supplier works out, I stay with them," says Danijel Prevolšek. He and Gottfried Reither, who is responsible for systems technology at Komptech, already had a good working relationship from earlier projects. The Puconci MWTF is the first facility in Slovenia to use the Razor to "shave" waste into fuel.

REALLY JUST COURAGE

When asked what his motto would be to do a good job, Prevolšek says, "Courage - really just courage. You have to have the guts to just walk into Haselsteiner's office and sell him on the project." (Hans Peter Haselsteiner headed the Strabag construction group until 2013 and is very well known in Slovenia). "And one hundred percent determination," adds Prevolšek. With a project volume of almost the same scale as his company's revenue, this is understandable. ■



CEROP, Puconci



CEROP Javno podjetje Center za ravnanje z odpadki Puconci d.o.o.

Business purpose: Waste disposal, treatment and sorting plants and landfill operation

Founded: 2008

Location: Puconci, Slovenia

Townships covered: 27

Population served: 125,000

www.cerop.si

CEROP premium RDF, fresh from Puconci



The owner, and soon also the operator, of the Puconci MWTF is the municipal company CEROP, Javno podjetje Center za ravnanje z odpadki Puconci d.o.o. The project was handled by Drava Vodnogospodarsko Podjetje Ptuj d.d., a Slovenian company in Ptuj that works in waste treatment, river construction and waterworks. In addition to the system for making RDF from household waste, CEROP also has four other Komptech machines, a Topturn 3500, a Mashmaster 1300, a Mustang and a Joker trommel screen. They are indispensable for treating compost and residual waste compost.

In Puconci, the summers are more summery than in Frohnleiten, because Puconci is in the warmer lowland of Prekmurje ("Over the Mur river"). The Mur also flows through Frohnleiten. That used to be the only connection between the two places – but now there are also the Komptech machines. Today Puconci is Slovenia's most modern MWTF. Komptech supplied the machines and systems. At the heart of it all is a Razor, which is much more than just a big razor.



RASOR 5400

Blades	54
Counter blades	3
Rotor circumferential speed	7.8 m/s
Rotor rotational speed	149 rpm
Installed rotor power	250 kW
Throughput of 2-D fraction with 30 mm basket	5.7 t/h



A WIN-WIN SITUATION

Company „Ohio Mulch“ turns expired food into a top-grade soil using latest Komptech screening technology.

In practice
Ohio Mulch

Every day, supermarkets across the US throw away produce that is past its sell-by date. Some of it you wouldn't want to buy, but some of it is fresher than a lot of the things lurking in people's refrigerators at home. Regardless, rules are rules and out it goes. Stores do it because they have to, not because they want to – it's a double financial hit for them. Not only can they not sell the produce they themselves already paid for, they have to pay tipping fees to dispose of it.

Meanwhile Ohio Mulch, a gardening supply company, had another

problem. Most of the soil in Ohio is clay, and to get good soil to sell in their 25 retail stores they had to go out of state. So Ohio Mulch looked for ways to make their own. Composting was an obvious answer, but where to get a steady supply of the high-quality feedstock it takes to make highly nutritious soil? The answer was right down at the mall.

Kroger, an Ohio-based grocery chain, had over-aged produce it needed to get rid of. Lots of it. Every day. Ohio Mulch did some research and development work,

and set up a composting operation to use this material. The result was „Green Envy,” an exceptionally rich, all-natural compost. Green Envy is so good that it is gaining national attention, and was recently shown at a Miami home & gardening trade show. Other feedstock suppliers are getting on board, including restaurants like fast-food chain White Castle.

Ohio Mulch is a well-established, 33 year old company that knows its way around the waste processing business. It has long been making mulch out of green waste and other



Ron DuPerow and Travis Smith with Ohio Mulch's new Multistar.



materials. It even builds its own trommel screens. But for screening Green Envy, the company turned to the Komptech L3 Multistar star screen. The Multistar's ability to handle heavy, moist material and its precision screening gap control mean it can turn out a consistent product every time. As Ron Frost of Ohio Mulch put it:

"IT'S PHENOMENAL THE WAY YOU CAN PROGRAM THE MACHINE TO SEPARATE OUT THE EXACT INGREDIENT YOU WANT."

With the Multistar, Ohio Mulch has been able to get production down to a science. They can fine-tune the quality of Green Envy and get a consistent flow.

Ohio Mulch has 25 retail stores and three production facilities in Ohio, and a fourth production site in Georgia. The company sells Green Envy in its own stores as well as through other retailers – including Kroger. It's a "virtuous circle" that benefits everybody. The grocery chain no longer has to pay tipping fees for the produce it can't sell, and can even sell it in another form as compost. Ohio Mulch benefits from a steady source of highly nutritious feedstock for a top-quality product. The environment and ultimately all of us benefit because the resources that went into growing the produce in the first place are not lost, but instead repurposed as soil for new plants. A perfect win-win situation! ■

www.ohiomulch.com

It's getting green in Ohio.

Less fuel, more power.



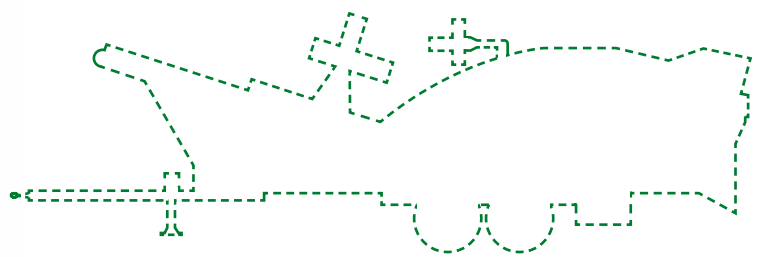
Cribus:
Up to 75 percent
lower energy costs



Crambo direct:
Up to 30 percent
lower energy costs



Terminator direct:
Up to 30 percent
lower energy costs



In preparation

Of course we're not the only people helping to make the world a greener place. But we're still very proud of our solutions for handling waste and biomass!

