

# TANASHARK mobile shredder

Unique **VERSATILITY**



**TANA**  
From Waste to Value

# Introduction to shredding

## Principles and priorities of waste management

- Reduction of waste
- Recycling of waste components
- Re-use of waste components
- Final disposal of rejected waste



**Recycling**



**Re-use**



**Biological treatment**



**Energy production**



## Driving forces for TANASHARK mobile shredders' development

### Economic interest

- Need to reduce high costs related to transportation and final disposal of solid waste
- High production potential of RDF-Refuse Derived Fuel
- European Union Greenhouse Gas Emission Trading Scheme (EU ETS) January 2005:
  - No CO<sub>2</sub> emission permits needed to be purchased when biomass is incinerated
  - Further trading of the extra permits in the CO<sub>2</sub> allowance market

### Growing requirements for solid waste handling in EU

- Compulsory pre-treatment of solid waste before the final disposal (EU Landfill Directive) since January 2005
- No biodegradable waste in the landfills in the future

### Revised concept of waste worldwide

- From waste to value through to recycling, re-using and energy recovery.

High energy and raw material prices, emission and disposal regulations together with high disposal and transport costs will inevitably lead to situation where mechanical treatment of solid waste fractions will increase considerably. This means that a lot of new shredding capacity is needed.

### Main areas of application

- Volume reduction of waste
- Pre-treatment of waste
- Separation of waste
- Recycling
- Production of SRF (Solid Recovered Fuel)



### Major waste fractions requiring shredding

#### Municipal Solid Waste

Household waste  
Commercial waste  
Bulky waste  
Green waste  
Compost

#### Wood waste

Forestry  
Agriculture  
Industrial waste  
Root stocks  
Railway sleepers

#### Others

Tyres  
Construction waste  
Demolition waste  
Plastics  
Paper

# One investment – multiple uses



## Customer benefits

The TANA Shark brings the customer tangible benefits measurable in money

<b>One machine/unit</b>	Less investment
<b>Modular construction</b>	Increased flexibility between models
<b>Purpose-built rotor and counter tool designs + rotor screen</b>	Optimized end product size and capacity
<b>Quick change of rotors and counter tools</b>	High level of uptime

# Tomorrow's solutions for today

## Mobile shredder challenges

In order to reach the optimum capacity and size of end product, waste management operators have often chosen a separate shredder for different kinds of materials. This solution has worked well as long as there are only certain types of waste fractions to be treated. However, as treated material changes, it usually requires additional equipment to optimize the treatment process.

Another frequent solution has been to treat the material in two stages by using a primary and a secondary shredder in the same process. This naturally increases the investment required as well as the operation costs. Further problems are often caused by the difficulties in synchronizing the two different types of shredders. These are some of the challenges we saw when developing our new mobile shredder.

## Revolutionizing traditional thinking on shredding

In its R&D Tana Oy has invested heavily in exploring customer feedback. As a result, the new generation of TANA Shark Mobile Shredder is unique in its versatility. The TANA Shark is suitable for the mechanical treatment of most recoverable, recyclable and reusable materials – whether it was just for volume reduction, recyclable material production or renewable energy fuel production.

The versatility of the TANA Shark makes it possible for a customer to invest in one shredder unit that allows a quick and cost efficient conversion to suit most waste fractions. The TANA Shark may be used either as a primary shredder or in producing the required particle size in one phase. It is available as a single rotor model. The investment or efficiency is not compromised in spite of changes in waste material types or contracts.

## Basics of versatility

TANA Shark's versatility is based on its power transmission and torque, the interchangeability of the counter tools, the adjustable plug-in rotor screens and the optional shredding process programming tailored to different waste fractions.



# Versatility in practice



### Drop-in counter tools

The amount of the counter tools play an essential role in determining the capacity of the shredder and the particle size of the end product. TANA Shark's counter-tools have two wearing surfaces. Due to a drop-in attachment mechanism they are quick and easy to remove and turn. For volume reduction purposes it is possible to remove up to two thirds of their total amount.

### Adjustable plug-in rotor screens

Another factor affecting the end-product size is the rotor screen. A variety of rotor screens with different mesh sizes and shapes are available for TANA Shark. The rotor screens are of the plug-in type, making the installation and removal work easy in field conditions. Additionally, the screen of the new generation's TANA Shark is adjustable. If the rotor to screen clearance is too wide the capacity decreases and may eventually cause screen clogging. In the new model the clearance can be fine tuned for a maximum performance.

### TANA Control System (TCS)

For optimization of capacity/particle size -ratio, the TANA Shark is operated through the TANA Control System (TCS), complete with pre-programmed process parameters for the most common waste fractions. The optional OneTouch function enables the operator to select the desired program at the press of a button. As part of the start-up of the machine the program parameters may be fine-tuned according to the customer's specific requirements. As a novelty the TANA Shark is equipped with a remote management system (RMS). It is a prerequisite for a quicker and more accurate factory support and more importantly will offer the customer possibilities for fleet management and eventually also follow-up of the operating costs of the machine.

### Bi-directional rotor

The shredding rotor may be operated in either direction to maximize feed throughput. This function assists in enabling uninterrupted flow of the material fractions through the shredder.



**Trusty operational reliability**



## **TANA Control System (TCS) provides cost efficiency, operational reliability and longer lifetime**

Tana Control System (TCS) monitors all operative functions in the TANA Shark. It prevents machine damage caused by any problems in the driveline and controls the rotor movements depending on the selected work mode. The TCS LCD panel acts as the instrument panel displaying to the operator more than 100 different pieces of information, e.g. the malfunctions log, fuel consumption, loading rate, service intervals, etc.

For service and maintenance staff, the TCS functions as a set-up screen for the system base adjustments and acts also as a diagnostics tool. All system alarms and machine malfunctions are logged in the TCS memory for easy monitoring and downloading at a later date.

This in effect reduces downtime costs and limits potential damage to the powertrain.

TCS also prevents overloading of the powertrain and automatically adjusts the TANA Shark for the optimum output level. Whenever the loading of the shredder approaches its limits, TCS adjusts the hydraulic pumps accordingly and changes rotary direction when necessary. The rotary direction is also reversed during less-than-optimum loading to increase throughput.

## **Easy and safe operation**

The TANA Shark is available with a remote control unit (RCU) which allows the operator of the loading machine (e.g. a wheel loader) to operate the shredder from his cab. This boosts operational safety and ease of use.

## **Powered by Caterpillar engines**

The TANA Shark is powered by one of the world's leading diesel engine manufacturers, Caterpillar. It is renowned for its reliability and operational economy.

## **Simplicity means reliability**

The TANA Shark utilises a hydrostatic powertrain identical to the one used in TANA landfill compactors. The reliable Bosch-Rexroth hydraulic pumps and motors are linked to TCS, creating an efficient and maintenance-friendly power transmission system.

The unchallenged advantages of the TANA Shark are the pressure cut-off system protecting the shredder from hydraulic shocks. The closed centre hydraulic system allows reversing the rotor when required.

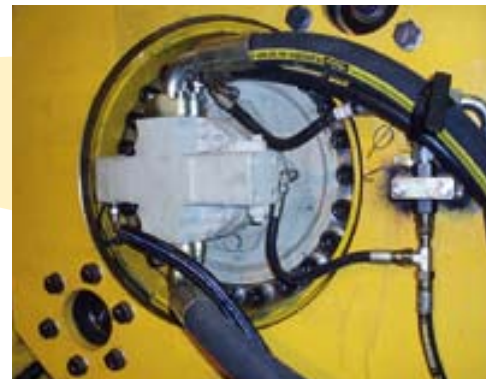
## **TANA rotor carrier assembly**

Shredding of materials causes a high pressure to the rotor tube and it always bends a little. The placement of the gears at the ends of the rotor tube makes them vulnerable for damages unless they are protected. Tana has a patented rotor carrier assembly mechanism, swing, allowing a few degrees movement of the rotor tube to every direction without damaging the gear-boxes.

## **Optimum end-product quality**

The shredding performance of the TANA Shark is in a class of its own. The TANA Shark uses small, reduced gapping between the shredding tools and the counter tools, producing uniform quality end product at high capacities with most waste fractions. The counter tool panels open to remove non-crushable materials from the feed stream.

The adjustable plug-in rotor screen further optimizes the end product size.



# Ease of service and maintenance

The rotor, the shredding tools and the counter tools are all easily accessible since the counter tool panel is opened to service at the service platform.



## Serviceability is key to productivity

The ease of service and maintenance of a shredder in hard, dirty operative conditions is one of the most important key factors. The TANA Shark addresses these issues by having the diesel engine, the radiators and coolers, and the filter sets fitted in very service-friendly locations. The engine bay with the hood opening to both sides of the machine covered with FOPS provides an ideal environment for carrying out the scheduled service. The pre-screening of the airflow to the radiators and an oversized engine air filter greatly reduce the daily service attention required.

The rotor, the shredding tools and the counter tools are all easily accessible once the counter tool panel is opened to serve as the service platform.

The attachment mechanism of the cutting tools is very simple. Changing all the cutting tools on the rotor only takes a few hours. Due to the drop-in mechanism of the counter tools they only need to be pushed out of their place with a special tool for this. And when it is time to change the rotor, the attachment mechanism (pat. pend.) enables a quick and easy removal of it.

Fire safety is another key issue when operating in dry and dusty conditions. The low-speed rotor of the TANA Shark minimizes sparks and the bolt-on wear parts make welding work unnecessary in site conditions.

## Designed to be simple and strong

The simplicity of the TANA Shark's structure allows the removal and re-installation of any component without the need for major disassembly. For example, the conveyor may be quickly uncoupled and removed as a complete unit. The framework materials are high-quality steel for easier welding and maintenance. All wear parts are made of the very durable hardened steel.



# Technical data

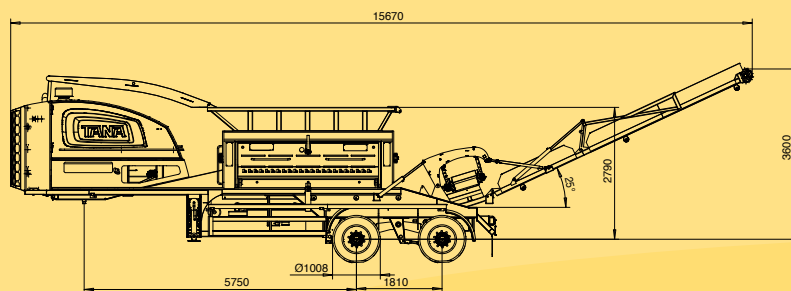
## TANASHARK 220D

### General information

Operating weight .....	25 000 kg
Total length in transportation .....	10 580 mm
Total length in operation .....	15 670 mm
Total width .....	2 540 mm
Total height in transportation .....	4 000 mm
Engine .....	Caterpillar C15, 540 hp
Rotor drive gears .....	2 x 110 kNm
Nominal rotor torque .....	220 kNm

### Shredding tools

Rotor shredding length .....	3 000 mm
Rotor speed .....	max. 30 rpm
Rotor diameter .....	850 mm
Rotor knives .....	24 pcs
Counter knives .....	25 pcs



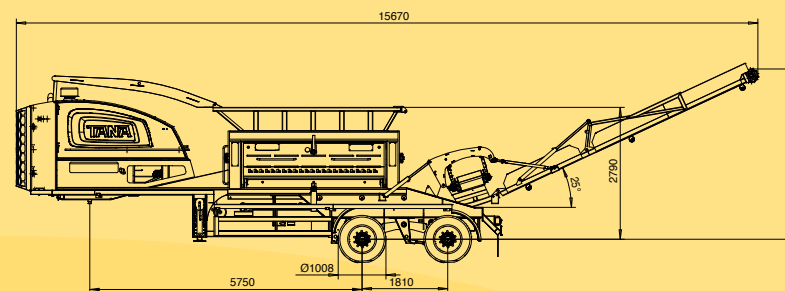
## TANASHARK 440D (Available in the autumn 2008)

### General information

Operating weight .....	29 000 kg
Total length in transportation .....	10 580 mm
Total length in operation .....	15 670 mm
Total width .....	2 540 mm
Total height in transportation .....	4 000 mm
Engine .....	Caterpillar C15, 540 hp
Rotor drive gears .....	2 x 220 kNm
Nominal rotor torque .....	440 kNm

### Shredding tools

Rotor shredding length .....	3 000 mm
Rotor speed .....	max. 30 rpm
Rotor diameter .....	850 mm
Rotor knives .....	24 pcs
Counter knives .....	25 pcs



Weights and measurements are given within normal tolerances.  
The manufacturer reserves the right to changes without prior notification.

# Tana – innovative solid waste treatment technology worldwide



The history of Tana goes back to the late Sixties when the business started as a family-run garage operation. A lot has changed in the past four decades – Tana today is a successful manufacturer and exporter of five models of the well-known TANA Gx Series landfill compactors, ranging from 26 to 52 metric tonnes in operating weight. And recently we have introduced the TANA Shark mobile shredder products to compliment the landfill compactor line.

Tana's worldwide distribution network reaches some 40 countries in Europe, Asia, Australasia, South-America and Africa. We cooperate with very experienced dealers who have strong commitment and expertise in the solid waste management field in their respective regions. Through their efforts and your experience-based feedback from different markets we have been able to continuously improve and develop our product lines. As a result, we are able to offer you the most comprehensive line of landfill compactors and the most versatile slow-speed shredder on the market today.

The new Shark range of mobile solid waste shredders has been designed to cater for your specific needs wherever you may be. The increasing quality requirements for the end product will keep both you and us on our toes for a long time – we believe in the Shark's ability to match and surpass these challenges.

We handle our spare parts logistics through our dealers worldwide and carry parts for end-of-life models for years to come. Our factory-based Product Support Team includes regionally dedicated After Sales Managers and Rollmasters whose years of expertise ensure the resolution of even the rarest problems. They act as a support line between the manufacturer and the dealer, and interact directly with the end user if necessary.

As we approach our 40th Anniversary, we thank you, the Valued Customer. We also welcome new customers to join forces with us – let's work together to make your waste management processes even more efficient and profitable!

Sincerely at your service,

TANA team

# TANASHARK – Unique Versatility

## TANASHARK

- Is suitable for most waste fractions
- Provides highly uniform particle size
- Offers the features of a pre-shredder and a secondary shredder at a competitive price
- Can produce small particle size in one phase
- Offers unique versatility
- Offers competitive capacity
- Has a patented rotor carrier assembly
- Produces the widest particle size variety on the market 50–500 mm

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