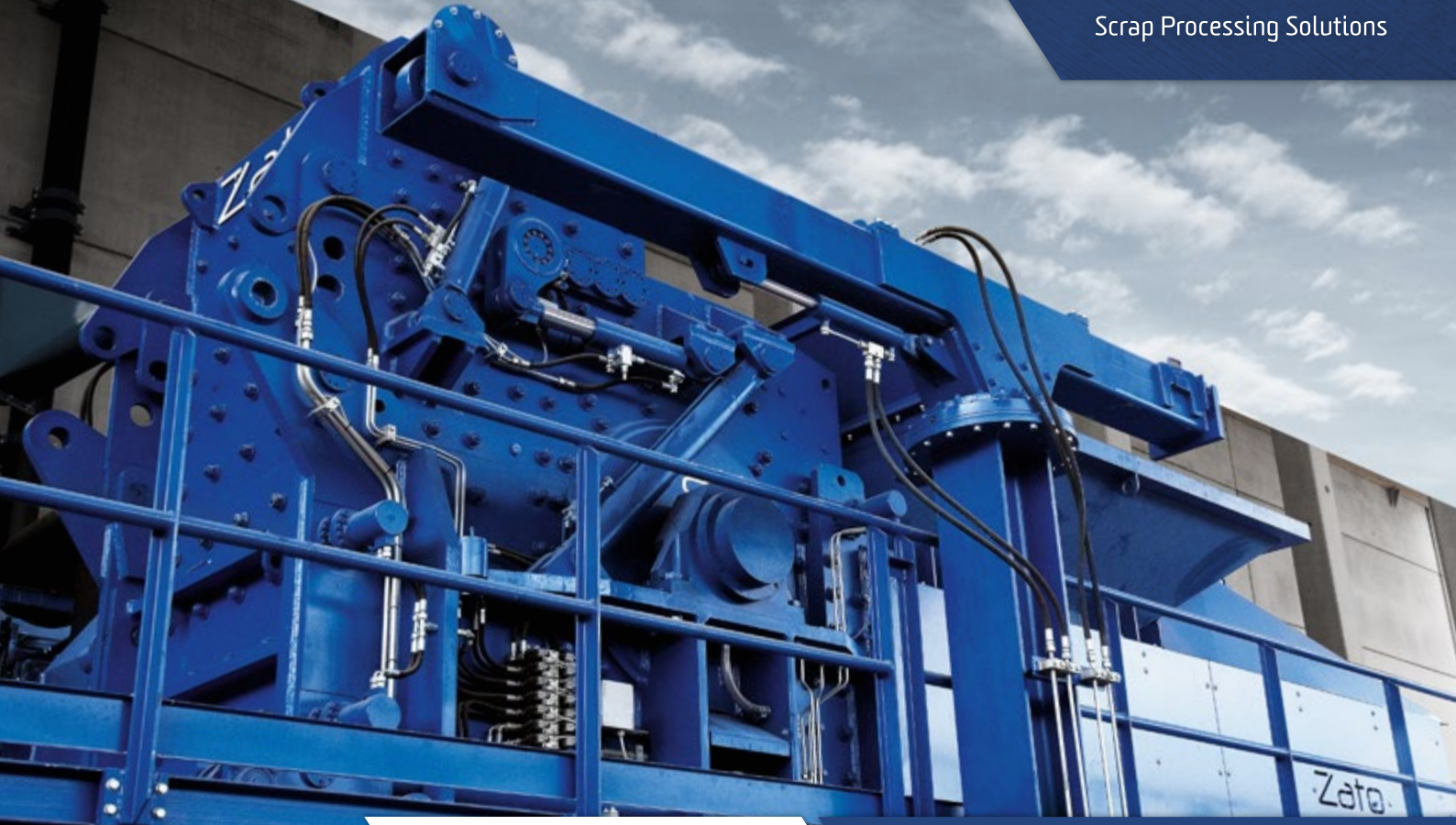


# Zato

Scrap Processing Solutions



Hammer Mill

## BLUE SHARK

# SOLID STRONG



[www.zatoshredder.com](http://www.zatoshredder.com)

THE IDEAL SOLUTION FOR  
THE TRANSFORMATION  
OF MEDIUM-HEAVY SCRAP  
INTO HIGH QUALITY PROLER



METAL  
RECYCLING



STEEL MILLS



AUTO  
RECYCLING



ALUMINIUM  
FOUNDRIES





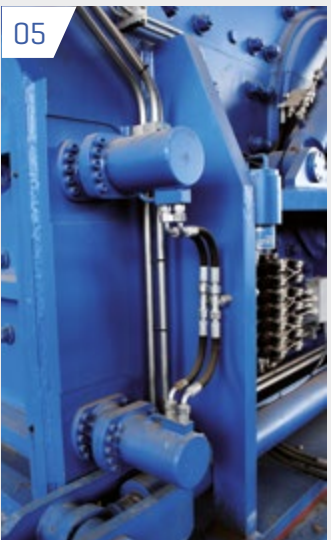
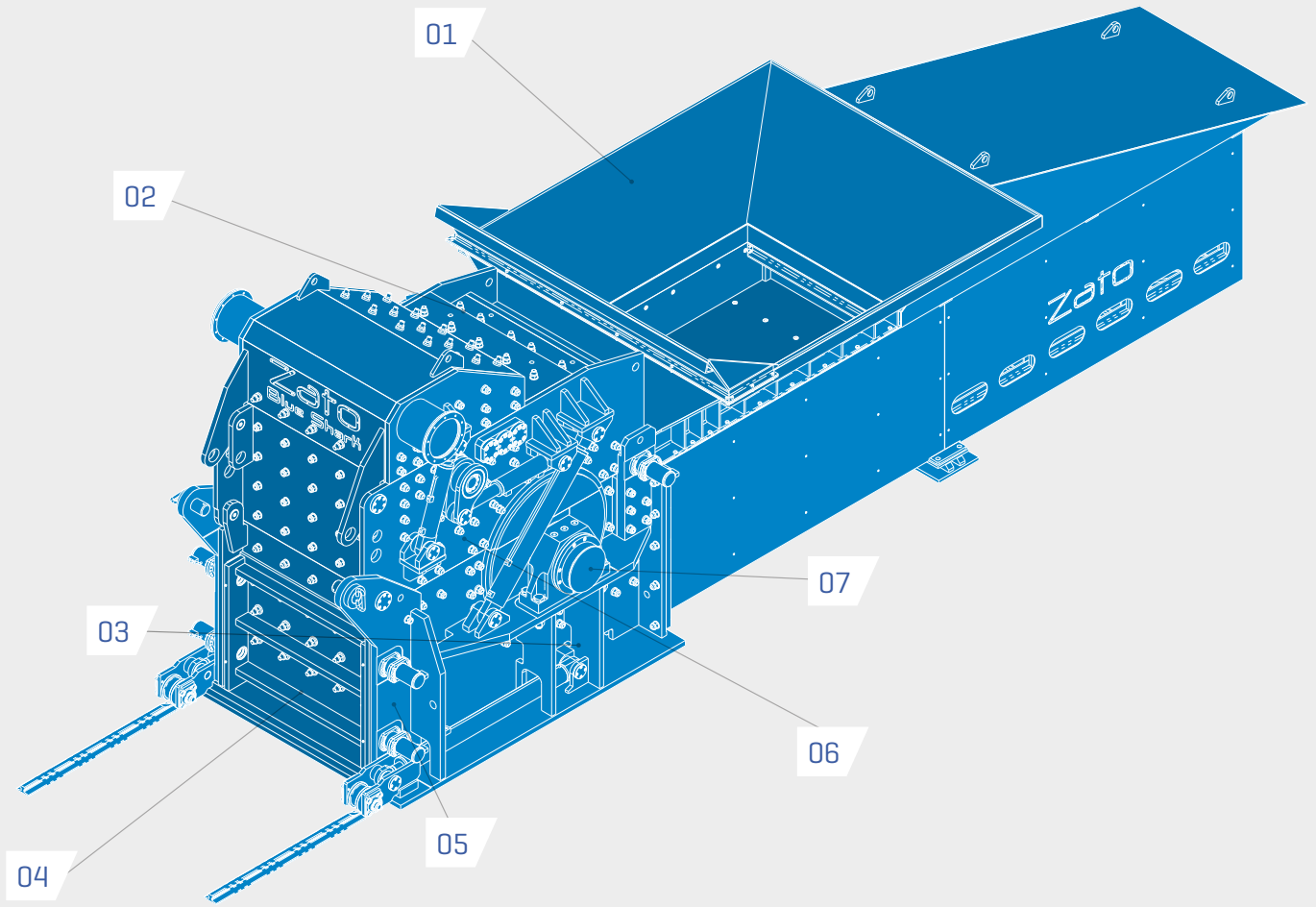
THE IDEAL SOLUTION FOR THE TRANSFORMATION OF MEDIUM-HEAVY SCRAP INTO HIGH QUALITY PROLER

## SOLID STRONG

Unmistakably unique, our range of hammer mills offers advantages that go beyond all expectations. The innovative loading technology, by way of automatic hydraulic pushers, applied for the first time to hammer mills offers huge advantages: compactness, high efficiency and savings in management and maintenance costs. The result – maximum exploitation of high power reserves. Since the grids can be completely removed from the machine body, any routine and/or supplementary maintenance operation is made easy. All machine movements are hydraulically driven, without the need to slackening

screws. The result: drastic reduction of maintenance times. Zato hammer mills are a profitable and long-lasting investment as they are realized with the best spare parts and steel qualities on the market.





REF 1



## OPENING THE CAP OF THE UPPER GRIDS

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The two upper sections are closed and locked by means of hydraulic pins, driven by proportional solenoid valves controlled via a push-button panel and supplied by the control unit.

Hydraulic cylinders open and lock these pins.

When they are operated, the cylinders push the cap upwards so that you can safely and easily work on the grids

REF. 1

REF 2



## REMOVING THE CRADLE OF THE LOWER GRID

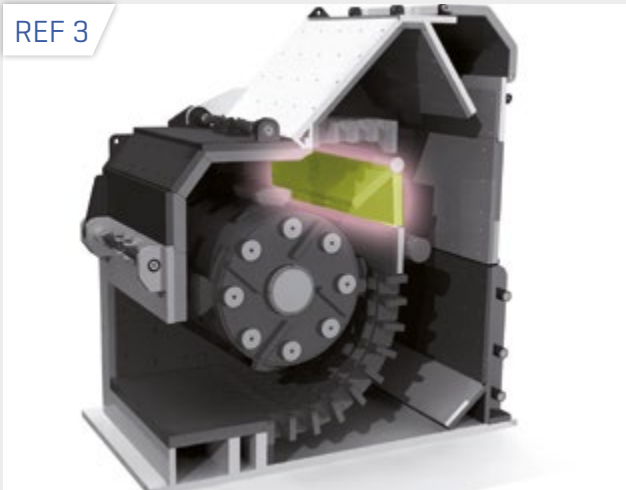
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The cradle, which houses the lower grid, is also closed by hydraulic pins.

When the pins are removed, the two hydraulic cylinders push the cradle on two guides external to the shredder until they are fully retracted so that you can change the grids

REF. 2

REF 3



## RAPID DISCHARGE

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Inside the cover, a hydraulic bulkhead – the rapid discharge – serves as an outlet to eject those heavy blocks which have not been shredded

REF. 3

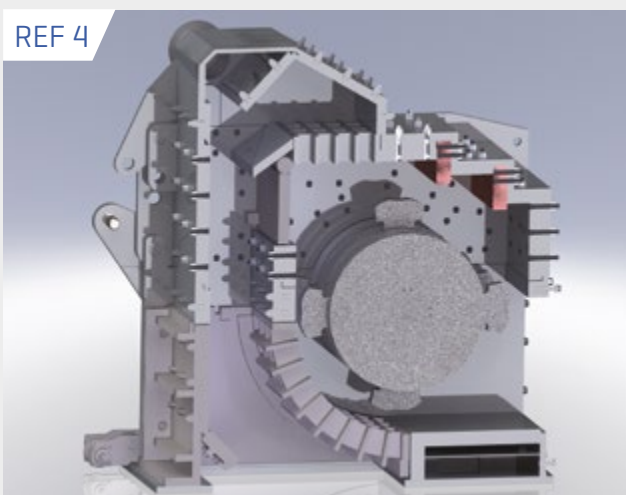
## INTERNAL STEPS

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The machine body, fully shielded with strong Hardox 400 sheets, is structured so that the material receives strong shocks inside it; the action of the rotor also helps to crush the material.

REF. 4

REF 4



REF 5



## SHAFT AND HAMMERS

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The hammers are hinged onto the 7 discs of the rotor by 4 steel shafts and steel supports designed and manufactured by Zato. The bearings with double row of rollers are lubricated by an oil circuit. Steel spacers separate the discs on the rotor and the entire assembly is fixed with bolts to ensure better elasticity and longer life.

Each disc is externally covered with special anti-wear material.

Upon request, the rotor is supplied with hammer protection shields that help increase the moment of inertia, thus resulting in a significant increase in production per hour.

REF. 5

## PLC/RADIO REMOTE CONTROL

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The adjustment system actively and constantly acts on the rotor. It slows down or increases revs automatically depending on operating conditions, on the friction received at the milling stage, and on the type of material at the crushing stage. The radio remote control allows operators to manually control the machine if necessary: it powers the machine on or off and activates the rapid discharge function. In the HP3000 model, fitted with a movable rotor, the machine-supply-rotor interaction is adjusted by the PLC, which receives all energy data and perfectly controls how the rotor approaches or moves away from the grid in automatic mode and during milling. Thus, the size of the materials is set and hammer wearing is optimized. For safety at work and improved performance. And low management costs.

## HAMMER POLES EXTRACTOR

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The system is supplied with hydraulic equipment specifically designed so that shafts, hammers and protection shields can be removed. The extractor is directly driven by the hydraulic control unit of the shredder.

REF. 7



REF 7



REF 8



## SUPPORT STRUCTURE [optional]

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The solid structure on which the machine is fitted has sturdy electro-welded beams. Inside, all the auxiliary components of the system are found: vibrating surface, magnetic drum, first unloading belt, hydraulic unit, power station.

It has catwalks and safety railings.

The structure [not including the auxiliary components] weighs about 15 tons.

A second structure [about 9 tons] houses the engine and the reduction unit/hydrodynamic coupling unit.

It also has catwalks and safety railings.

REF. 8

REF 8



## MOVABLE ROTOR

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As standard, HP3000 models are equipped with a movable rotor [fitted on other models upon request].

Two lifting cylinders approach or move the rotor away from the unloading grids. This movement can be controlled manually, by radio remote control, as well as automatically, by the PLC.

The idea behind a movable rotor is mainly:

### 1. To remove the pieces not crushed.

When the rotor gets a downwards to upwards impact, it overcomes its own weight and two special valves [fitted with two cylinders that support the rotor] let the two cylinders slide upward. In this way, the impact is controlled and limited, the rapid discharge also opens and the piece is automatically ejected. Now, simply by the means of the radio remote control, the operator closes the rapid discharge and places the rotor back to the regular working height; all this in just a few seconds.

### 2. To release the rotor when it gets jammed and with material.

By means of the radio remote control the rotor is brought to its maximum height, enabled, and lowered towards the blocked scrap, thus acting as a mill.

### 3. To establish proler size

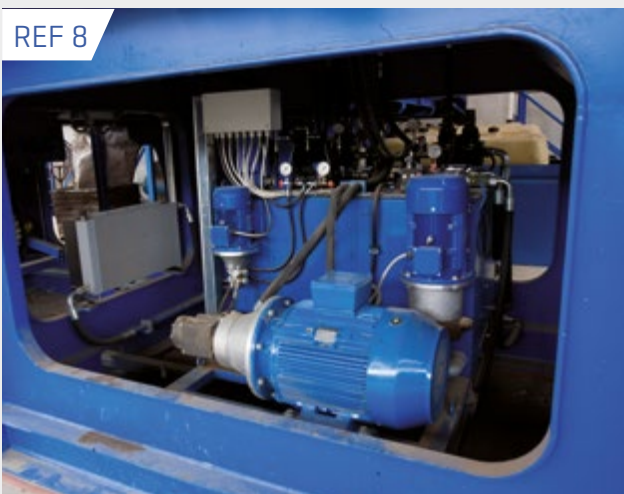
When the rotor approaches or moves away from the grid, the size of the crushed material can be set, thus optimizing hammer wear and tear.

### All the rotor movements can be executed while the machine is functioning.

The radio remote control:

- powers the machine on and off
- changes the rotor set-up
- opens the rapid discharge while stopping supply until the rapid discharge closes temporarily

REF 8



# REDUCTION UNIT AND HYDRAULIC COUPLING



Inside the steel electro-welded box you will find a pair of gears, the body of the hydro-dynamic coupling, hub, input shaft, output shaft and hub, oil tank, fuel pump, the coupling, lubrication pump, bearings, two speed detectors (input and output), oil level detector and filters, oil pressure sensor and alarms, and air heat exchanger. This results in remarkable advantages:

- No - load engine start - up
- Gentle loading start - up
- Overload absorption
- Impact on reduction unit is dampened
- Absorption of torsion vibrations
- Large radial load capacity
- Control of the torque delivered at start - up
- Long operating life since there are not friction pieces undergoing wear and tear.

In traditional methods, the sequence of the engine components is as follows:

Engine, joint coupling and hydraulic joint.

In this way, the rotor is coupled to the joint by means of the cardan shaft.

Since there is no mechanical coupling inside the joint, just contact via oil, the joint absorbs all impacts transmitted by the rotor without transmitting them in turn to the reduction unit. Thus, the reduction unit is protected against damage.



# FERROUS METALS / INERT MATERIALS SEPARATION

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## ZIG ZAG

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# BLUE SHARK

