



RECYCLING

ADURO QZ SHREDDER

GENTLE AND FAST DISINTEGRATION
OF COMPOSITE MATERIALS

ANDRITZ

ENGINEERED SUCCESS



AUGMENTED REALITY CONTENT

Download the ANDRITZ AR APP from our website or the AppStore/PlayStore, scan the icon and experience the enhanced content!



- 1 Exchangeable wear liner
- 2 Service door
- 3 Acceleration tools (chains)
- 4 Drive
- 5 Tool holder
- 6 Discharge gate
- 7 High-torque drive train
- 8 Cooling system
- 9 Bearing unit
- 10 Rigid support structure

ADuro QZ shredder

With the ADuro QZ, ANDRITZ has revolutionized traditional shredding technology. The machine does not use any cutting tools, but breaks up the input material gently and quickly by using the effects of impact forces.

The ADuro QZ has had a lasting impact on many recycling processes. Wherever composite materials and metals are involved, this cross-flow shredder has evolved to become the centerpiece of a complete processing line and is used successfully worldwide. All of the subsequent processing steps profit from material disintegration by the ADuro QZ and are much more efficient as a result.

The ADuro QZ is suitable for a number of different materials and composites. The machine focuses on disintegration of the input material, but avoids damaging the individual components. Hence, it is possible to access disintegrated valuable waste material quickly, without potential harmful substances emanating from individual parts.

THE HEART OF A REFRIGERATOR RECYCLING PLANT

With the potentially hazardous materials found in electronics, it is difficult to break down and safely recycle components. This is a challenge that ANDRITZ has successfully conquered. The completely sealed system of the ADuro QZ takes in the refrigerators in batches and separates them into their individual components. Subsequent matrix degassing extracts the CFC from the insulating foam. With this gentle and environmentally friendly method of processing, the ANDRITZ recycling plants for refrigerators comply with highest European environmental standards. The individual iron, copper, aluminum, plastics and polyurethane foam fractions extracted can be returned directly to the economic cycle.

MAIN ADVANTAGES OF THE ADURO QZ

- Efficient single-stage processing
- Ideal for a wide range of input materials
- No sharp cutting of hazardous components
- Reduced internal wear due to acceleration tool technology
- Gentle and fast breaking-down of composites
- Quick access to valuable component fractions
- Insensitive to solid metal parts
- Quick tool changing
- Use of highly tempered special steel for walls and tools
- Batch operation and continuous feeding possible
- Cooling system for process chamber and bearing unit



Innovative processing technology

In comparison with conventional cutting systems, the ADuro QZ offers significant advantages in terms of results and wear.

The ADuro QZ gently breaks up the input material in a single-stage process and is insensitive to solid metal parts. The operating principle of the ADuro QZ shredder is based on flexible, rotating chains that accelerate the input material to achieve variable speeds and paths. The material is disintegrated and opened up by the impact of the accelerated materials colliding with one another. The different physical properties of the material as well as the individually adjustable holding time determine the form and size of the processed material.

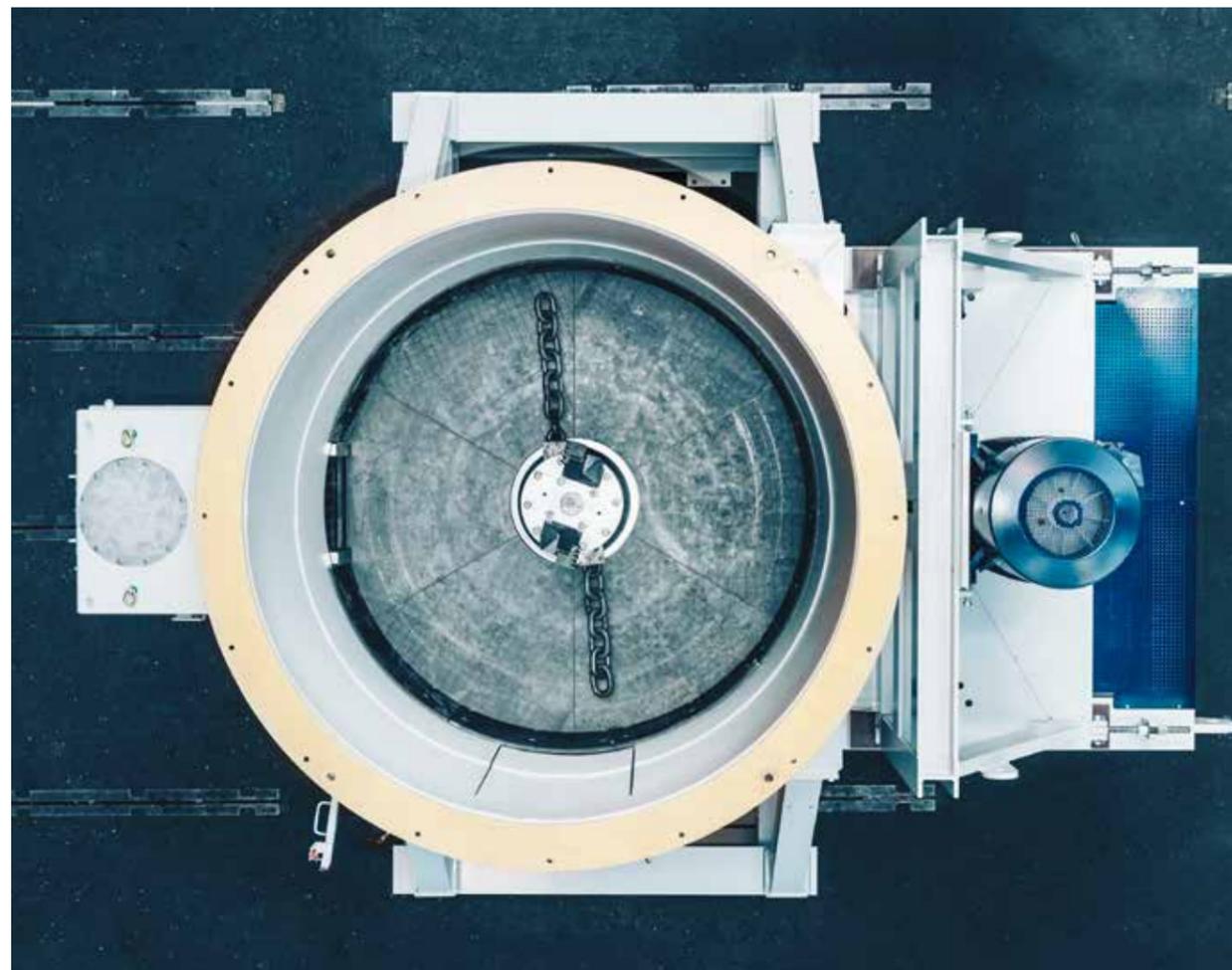
The individual fractions (like iron, plastic, printed circuit boards, cables, and copper coils) are exposed

and can be easily separated in downstream processes. Components that contain hazardous substances, such as batteries and capacitors, remain intact and can be disposed of without any negative impact on the environment.

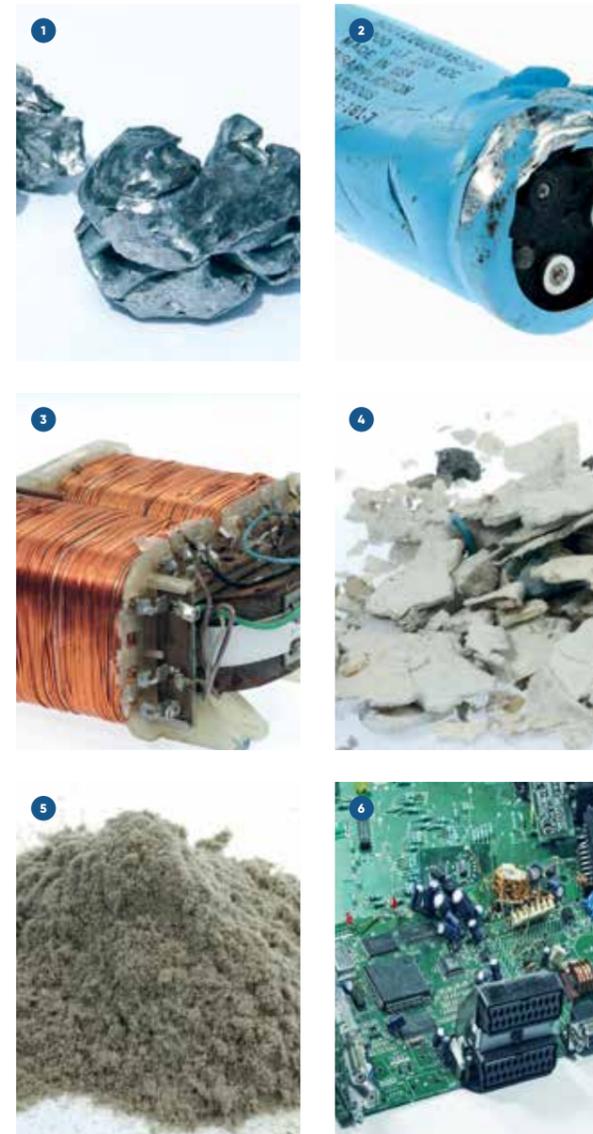
INNOVATIVE DISINTEGRATION TOOLS:

We offer innovative wear parts called A-HPC - ANDRITZ high-performance chains - for the ADuro QZ. These parts provide long tool life and result in lower operating costs.

ADuro QZ shredder: bird's-eye view of acceleration tools and chain head



OUTPUT MATERIALS



INPUT MATERIALS

- Electronic scrap
- Refrigerators
- Printed circuit boards
- Composite materials (metal/plastic, iron/non-ferrous metals, aluminum/plastic)
- Scrap cans
- Automotive parts
- Hazardous waste (paint tins, aerosol cans, batteries)
- Production waste (steel/aluminum turnings)
- Glass-fiber reinforced plastics (GFRP)

A MULTI-TALENT AT WORK

Originally designed for processing refrigerators and electrical scrap, the ADuro QZ has evolved from an innovation to a real multi-talent. The machine also disintegrates metal and plastic composites, glass-fiber reinforced plastics (GFRP), metal shavings, engine blocks and many other input materials in a large number of applications. ANDRITZ Recycling offers complete process systems for a large number of materials: from infed to disintegration of the materials, to strict separation of the valuable fractions.

- 1 Metal sheets
- 2 Condensers
- 3 Transformers
- 4 Plastic
- 5 Polyurethane from refrigerators
- 6 Printed circuit boards

SIZES AND TECHNICAL DATA

	Drive power [kW]	Chamber diameter [mm]	Inner chamber height [mm]	Weight [t]
QZ-1200	90	1,200	1,230	6
QZ-1600	160	1,600	1,675	14.2
QZ-2000	250	1,910	2,045	22
QZ-2500	315	2,540	2,040	29
QZ-2500HP	450	2,540	2,040	31

Special application: ADuro QZ for bio waste treatment

The well-proven ADuro QZ is capable of processing different materials, such as packaged food, organic waste, or energy crops, and preparing them ideally for the fermentation process in biogas plants.

The ADuro QZ for bio waste processing has a modern, compact and also stable design and is available in different sizes ranging from 900 mm to 1,600 mm. Ease of maintenance is a hallmark of the machine design. Besides the large service door, the ADuro QZ allows easy access to the discharge, belt, and belt pulleys. The wear plates inside the machine can be replaced very quickly, while the advanced discharge geometry helps the material to pass through the machine

smoothly without any blockages. At the same time, the special sealing system ensures best machine protection. In addition to the classic chains, ANDRITZ Recycling offers a wide range of accelerating and shredding elements for optimum substrate treatment. When combined, these elements form a unique overall system – depending on the material and the desired effect – that can be further upgraded to provide substantially longer service life.



DIVERSITY IS WHAT MAKES THE DIFFERENCE

The ADuro QZ treats grass clippings, which are otherwise difficult to handle, as well as cow, horse, and poultry manure quickly and effectively. Flexible tools inside the machine produce a homogeneous substrate that has a positive effect on many important factors in a biogas facility.

If the ADuro QZ is used, the gas formation and fermentation times are shorter, the overall gas yield in the fermenter is higher, and the economic efficiency of the entire plant is enhanced. Any foreign objects present, such as packaging, are detached from the organic material and removed easily.

ANDRITZ Recycling offers the complete process chain, from infeed of the input material, to its disintegration, to feeding it to the fermenter. The individual process stages can be controlled through a common interface or included in the plant's overall electronic control system. Existing biogas plants can also be upgraded easily with an ADuro QZ for more efficient use of gas potential.

MAIN BENEFITS

- Suitable for a wide range of different input materials
- Faster fermentation
- Avoidance of floating layers
- Shorter stirring times
- Higher gas quality
- Increased process stability
- Gentle processing of packaged food to prevent the formation of microplastic
- Insensitive to contaminants
- Easy removal of contaminants from organic material
- Low wear due to operating principle without knives

INPUT MATERIALS



Organic waste



Renewable resources



Horse manure



Packaged food

SIZES AND TECHNICAL DATA

	Drive power [kW]	Chamber diameter [mm]	Inner chamber height [mm]	Weight [t]
QZ-900BIO	55/75	900	870	2.9
QZ-1200BIO	75/90/110	1,200	1,170	4.5
QZ-1600BIO	132/160	1,600	1,170	6.0



GLOBAL TECHNOLOGY – LOCAL SERVICE

ANDRITZ Recycling is more than an equipment supplier. We develop recycling solutions that pay off for our customers. Our knowledge and expertise are available to help customers truly optimize their operations. As a part of the international ANDRITZ GROUP, we are backed by the strength of an extensive global network of service specialists, machining centers, rebuild shops, and service locations. From the supply of spare parts, routine work during a scheduled shutdown, to quick response during a disruption, we are available to keep operations running smoothly.

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