

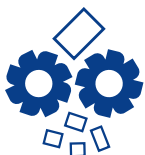


## SHREDDER TYPE ZTLL 420 x 750 up to 5.000 x 3.500

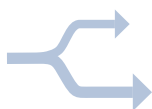
*Universally applicable for efficient shredding of materials of all kind*



With certification  
according to DIN 66399-2



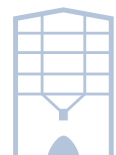
SHREDDING



SORTING



CONVEYING



STORING

[www.zeno.de](http://www.zeno.de)



## The shredder type ZTLL

The ZENO shredder ZTLL is the result of more than 35 years experience in mechanical engineering and the construction of plants. It crushes materials of any kind, such as packaging material, chip- and hardboard, boxes, paper, cardboard, veneer, plastics and foams, tires, data carriers, WEEE and many more.

This high-performance machine is manufactured in many different sizes, depending on throughput, input material and grain sizes with machine weights from 1 to 50 tons.



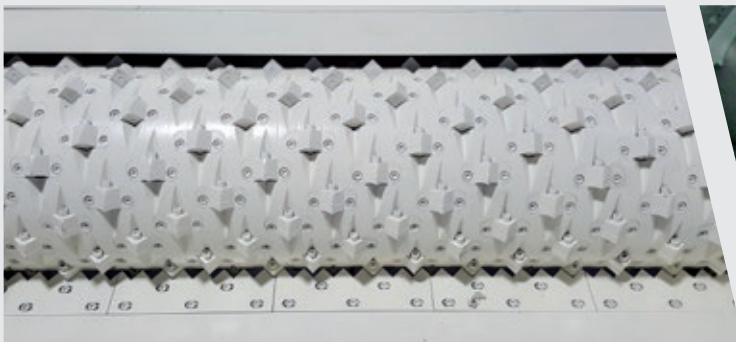
## The technical advantages of the ZTLL

- ▶ The hopper can be filled by hand, wheel loaders or conveyors. Special supervision is not necessary since the machine is equipped with an automatic shut-off device. It turns off the pusher and the rotor when the machine is empty.
- ▶ A constant throughput is ensured by a load-dependent feed control of the hydraulic pusher.
- ▶ Noise reduction and smooth running are ensured by the heavy full steel rotor, the stable machine frame and the heavy weight of the machine.
- ▶ The by the "Technical Committee Wood" determined workplace-related emissions of the ZTLL 1200 x 1600: 81,1dB(A) in idle, 85,5dB(A) in processing of wood waste. Emissions of other models have to be determined depending on ambient and material.
- ▶ The chip size can be easily varied by changing the screen.
- ▶ Discharge either mechanically by subsequent conveyors or pneumatic via suction.

## The ZENO cutting system

The ZTLL shredders are equipped with a powerful solid steel rotor. The cutting geometry of the rotor offers an up to 60% higher cutting performance compared to conventional shredders. This means that there is only a low temperature rise during the crushing process. Thus, the material is crushed gently.

The hardened cutting tools are fixed on tool holders that are force-fit bolted into the full steel rotor. These cutting tools are placed in a diamond-shaped pattern and crush the material between the serrated counter knife system. The cutting tools can be turned and ensure a long tool life and a high throughput.



Rotor with cutting plates on tool holders  
with serrated counter blade

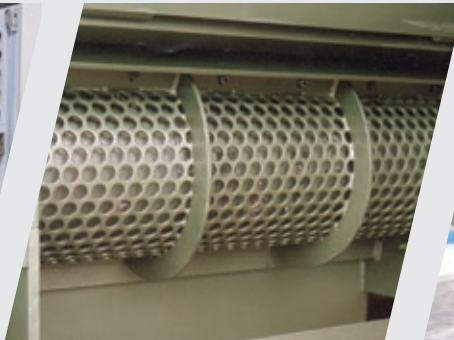


Rotor with single teeth

## The equipment



The cabinet in a steel housing according to VDE standards, with freely programmable logic controller (PLC) monitors regulates all functions of the ZENO shredder. Additional drives can be integrated into the cabinet when needed.



Screen in heavy welded construction. The diameter of screen holes affects the final grain size of the wood chips. For different grain sizes the screen can easily be changed.



Drive situation with electric motor and industrial transmission through V-belts countershaft. Power transfer to the full steel rotor shaft via splines and additional ring clamping elements.



The hydraulic pusher in honeycomb-reinforced welded construction runs on permanently lubricated rollers on bolted steel rails. In smaller machines, the rollers are equipped with slide bearings that are lubricated at maintenance intervals.



The two-cylinder-design in conjunction with a double pump allows up to four times faster retraction of the pusher and reduces idle times.



Hydraulic unit for the pusher and screen quick-change device of the ZTLL.



ZTLL solid steel rotor with bolted drive shaft. ZENO has developed a rotor shaft attachment, which is very easy to maintain and easy to replace, screwed into a solid steel rotor.



Bearing of the rotor shaft with double-row roller bearings. These are attached in in-house produced steel flanges, form-fit bolted to the side wall.

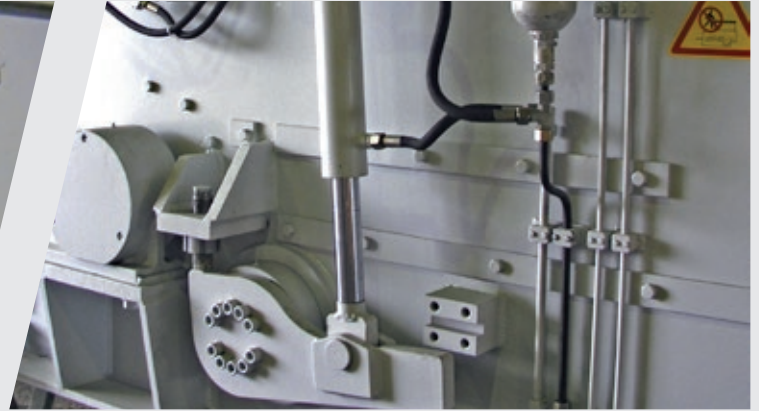
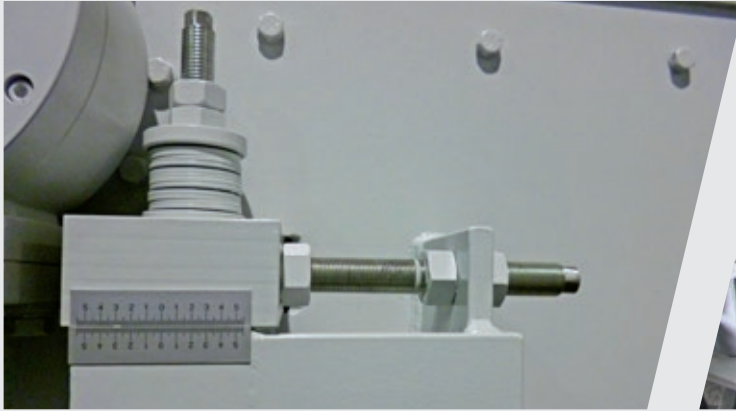


Supporting of the rotor shaft with spherical roller bearings in in-house manufactured heavy block housings.





## Special equipment & accessories



Another unique and cost-reducing feature, only available on ZENO shredders, is the patented cutting gap adjustment device. This easy-to-use system allows you to externally adjust the gap optimally between the cutting blades and counter-knife when it has increased by the wear of the tools. Only an optimally adjusted cutting gap guarantees a high throughput with low energy consumption. The tool life can be doubled or even tripled by adjusting the cutting gap.



### Hopper with tipping device

The hydraulically swiveling hopper allows the load of long items, such as chipboard remains etc.



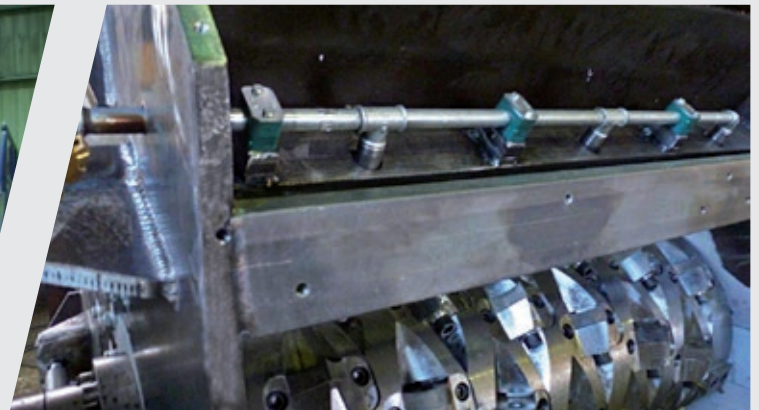
### Mobile version

The ZTLL with outfeed conveyor and alternator on standard container hook loading.



### Hopper special design

with suction, increased volume, heavier round tube design and level monitoring.



### Water injection

During the shredding process, the material is sprayed with water. Hereby, contaminations and adhesions are dissolved and dust is bound.

## Special equipment & accessories



### Hydraulic screen quick-change device

Easy removal of foreign objects. Quick change of the drawer to change the particle size. The hydraulically pre-stressed screen differs from foreign objects.



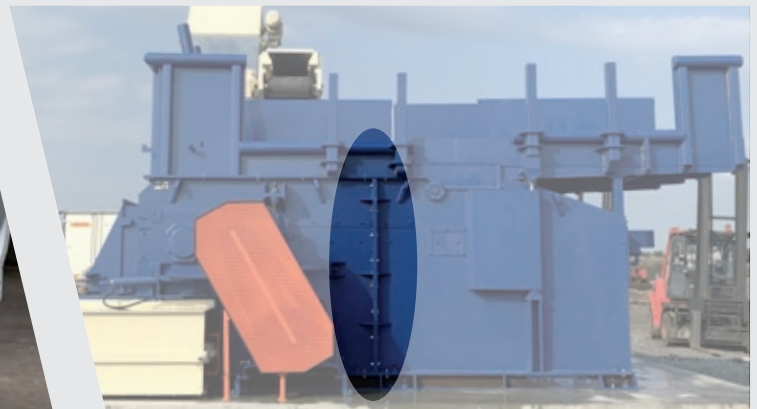
### Cutting system with 2 counter knives

The equipment of the machine with two counter knives allows the shredding to a small grain size at one step without pre-shredding and increases the throughput.



### Inductive torque monitoring

To protect the machine against damages by foreign objects, the drive unit is permanently monitored. The torque cut-off-system switches off immediately in case of overload – damages and down-time can be prevented.



### Split version

For larger machines, the machine stand can be manufactured in a split version. The front and rear parts are transported separately without expensive special transport and assembled on site.



### Roll stop

The rolling of round logs or other round items such as barrels, is prevented by the roll stop.



### Grooved slide bottom

So that during the crushing of thin waste, such as e.g. veneer residues, no material may lay down the slide, the ZTLL is available with profiled bottom slide.





## The ZENO shredder ZTLL in operation

Each machine is designed technically specific for your purposes.



Processing plant for used wood pallets



ZENO hard disk shredder



Shredder for plastics and rubber



ZENO shredder for rejects and braids



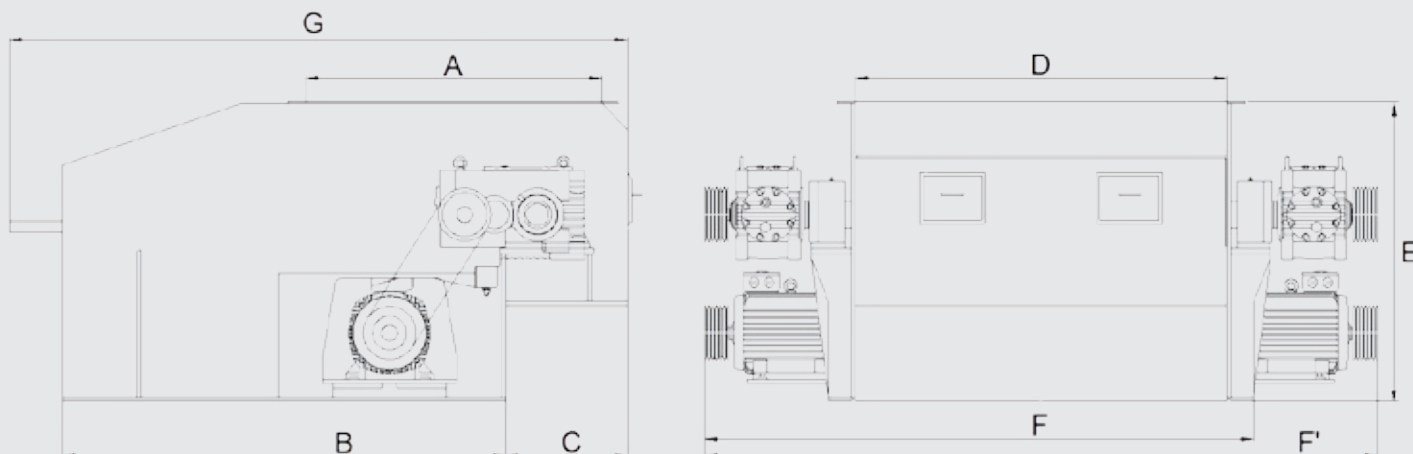
Shredder with discharging trough chain conveyor



ZENO shredder for RDF



Shredding plant for waste PVC windows



ZTLL	A clear width [mm]	B [mm]	C [mm]	D clear width [mm]	E [mm]	F/F'	G [mm]	Weight [kg]	Motor [kW]
420 x 750	750	1.215 (B+C)	-	420	700	850	1.370	1.100	7,5 - 11
600 x 1.000	1.000	1.500 (B+C)	-	600	850	1.120	1.635	1.550	11 - 15
800 x 1.000	1.000	1.500 (B+C)	-	800	850	1.330	1.635	1.950	15 - 30
1.000 x 1.200	1.200	2.050 (B+C)	-	1.000	1.000	1.570	2.310	2.550	18,5 - 37
1.200 x 1.600	1.600	2.400	650 mm at rotor turning circle Ø 380 700 mm at rotor turning circle Ø 450 750 mm at rotor turning circle Ø 600 800 mm at rotor turning circle Ø 710	1.200	1.900	2.300	3.400	4.600	30 - 55
1.200 x 2.300	2.300	3.100		1.200	1.900	2.200	4.000	5.600	30 - 75
1.400 x 1.600	1.600	2.200		1.400	1.400	2.300	3.200	5.400	37 - 75
1.400 x 2.300	2.300	3.700		1.400	1.800	2.300	5.050	9.000	37 - 75
1.600 x 1.600	1.600	2.800		1.600	1.900	2.700	3.500	7.000	45 - 90
1.600 x 1.800	1.800	2.800		1.600	1.900	2.900	4.000	8.000	55 - 90
1.600 x 2.300	2.300	4.000		1.600	1.900	2.600	4.700	9.500	55 - 90
1.800 x 1.600	1.600	3.600		1.800	2.100	2.700	3.600	8.500	55 - 90
1.800 x 1.900	1.900	3.000		1.800	2.000	2.800	4.500	9.000	75 - 110
1.800 x 2.300	2.300	3.500		1.800	2.000	2.800	4.700	10.000	75 - 110
1.800 x 3.000	3.000	5.800		1.800	1.700	2.400	6.400	13.000	75 - 110
2.000 x 1.900	1.900	3.000		2.000	1.940	2.500	4.100	10.000	75 - 110
2.000 x 2.300	2.300	3.600		2.000	1.900	3.000	4.500	11.000	75 - 110
2.000 x 3.000	3.000	5.700		2.000	1.900	3.100	6.400	15.000	90 - 132
2.200 x 2.300	2.300	3.700		2.200	1.850	3.100	5.000	13.000	75 - 110
2.500 x 1.900	1.900	3.100		2.500	2.100	3.400/4.200	4.200	19.000	2 x 55 - 160
2.500 x 2.300	2.300	3.800		2.500	1.800	3.400/4.200	5.000	21.000	2 x 55 - 160
2.500 x 2.500	2.500	4.500		2.500	2.050	3.400/4.200	6.000	20.000	2 x 75 - 160
2.500 x 3.500	3.500	6.300		2.500	1.900	3.400/4.200	7.500	21.000	2 x 75 - 180
3.000 x 1.900	1.900	3.000		3.000	2.100	3.900/4.500	4.200	25.000	2 x 75 - 160
3.000 x 2.500	2.500	4.700		3.000	2.200	3.900/4.500	6.000	25.000	2 x 75 - 160
3.000 x 3.500	3.500	5.600		3.000	2.200	3.900/4.500	6.500	27.000	2 x 90 - 200
3.500 x 2.500	2.500	4.700		3.500	2.200	3.900/4.500	6.000	30.000	2 x 90 - 200
3.500 x 3.500	3.500	5.600		3.500	2.200	3.900/4.500	6.500	26.000	2 x 90 - 200
4.000 x 2.500	2.500	5.600		4.000	2.200	5.100/6.000	6.000	31.000	2 x 90 - 200
4.000 x 3.500	3.500	5.600		4.000	2.200	5.100/6.000	6.500	32.000	2 x 90 - 200
5.000 x 3.500	3.500	5.800		5.000	2.200	6.200/6.700	7.500	35.000	2 x 110-250

Hopper as needed. We reserve the right for changes to the technical progress.





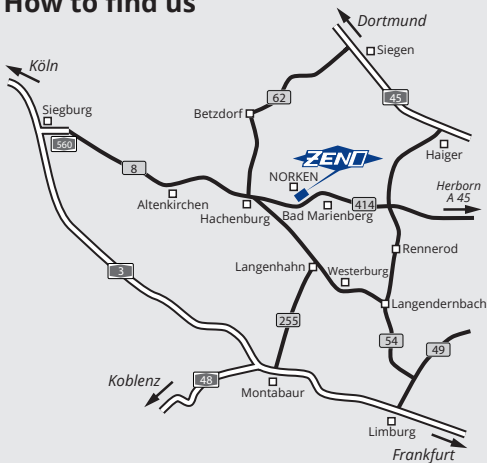
ZENO – a highly efficient company with modern production sites and a practice-oriented manufacturing program.



### The enterprise

For more than 40 years - as a member of the company group KRÜGER with more than 200 employees - ZENO delivers quality-recycling facilities throughout the world. On the sprawling premises you can find the commercial and technical office, diverse manufacturing and assembly halls, the paint shop, the cabinet construction, the pilot hall and an exhibition hall. On an area of 3.000 m<sup>2</sup> numerous second-hand machines are available for an immediate delivery. These machines are rebuilt and are sold with a factory warranty. A company owned fleet of several trucks, mobile cranes and installation vehicles is available for machine deliveries.

### How to find us



*Arrange an appointment with us and visit our exhibition centre with pilot plant for experimental purposes in Norken!*

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