



# SCRAP METAL PROCESSING EQUIPMENT



Mobile hydraulic shears

Stationary hydraulic shears

Baling presses

# ZDAS

# Advantages of ZDAS Scrap Metal Processing Equipment

- **CONSTRUCTION PROJECTS** of all machines are computer simulated and checked by means of the finite elements method in order to ensure trouble-free operation during their entire operational lifetime
- **MATERIAL** of the wear-stressed parts (especially friction plates) is chosen for its extremely high resistance to abrasion during heavy operation
- **SUBCONTRACTORS** are chosen from prestigious companies with long time experience, trusted references and superior service
- **TECHNICAL DESIGN** is focused on efficiency, simplicity, ease of operation and trouble-free maintenance
- **PROGRESSIVE ATTITUDE** and unique technical solutions are often protected by patents registered by ZDAS designers
- **SERVICE** Department of ZDAS is well-known for its high-quality service in both the Czech Republic and abroad. The production, delivery and installation of spare parts are included in its service and are carried out in a timely manner and for a reasonable price.



MOBILE HYDRAULIC SHEARS

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STATIONARY HYDRAULIC SHEARS

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BALING PRESSES

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## ZDAS shearing and baling equipment

Scrap shearing	Light bulky scrap	CNS 630-S – Shears
	Bulky and bar scrap	CNS 400 K Container Shears CNS 730 SM Semi-mobile Shears
	Heavy bulky scrap	CNS-PVM, CNS-CV2
Scrap baling	Amortisation and processing of scrap metal	CPB 100/200 Baling Presses
	Scrap Metal from pressing shops	CPS 160/320 Baling Presses
	Amortisation and processing of scrap metal, especially for scrap metal treatment plants	CPS 320/630/1000 Baling Presses CPB 400/630 Baling Presses

## Comparison of specific weights of steel scrap before and after processing

	BALING		SHEARING
	CPS	CPB	
Scrap before processing (kg/m <sup>3</sup> )	120 ÷ 350		
Scrap after processing (kg/m <sup>3</sup> )	2,000 ÷ 3,500	2,000 ÷ 3,000	530 ÷ 780
Specific weight increase (after processing)	up to 30 times heavier	up to 25 times heavier	up to 6.5 times heavier

# MOBILE SCRAP SHEARS

## CONTAINER SCRAP SHEARS

# CNS 400 K

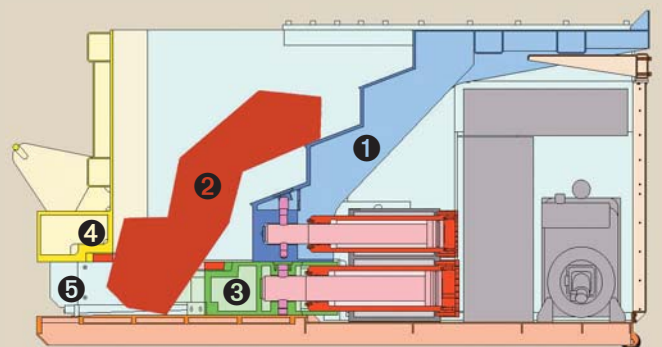
- Europe's best selling mobile container shears
- Appropriate for cutting mixed scrap
- Up to 12 tons of processed scrap per hour
- Continuous loading during the cutting cycle
- Diesel or electric engines
- Easy to transport, simple to operate
- Original engineered solution
- Highly stressed parts are made of castings
- More than 180 machines in operation
- Highly reliable with an extended service life
- ZDAS's mobile shears comply with emission limits



*The CNS 400 K container shears with top hopper being filled with bar scrap*

### Shears workflow

Scrap is filled into the hopper by means of a grab loader. Due to the horizontal movement of the holder **1** and the scrap's dead weight, it **2** falls to the bottom of the loading chamber and into the cutting space. After having been compressed on the front wall, the scrap is cut by the horizontally-moving tool-holding slide **3** via the blades on the front wall **4**. While the tool-holding slide is moving horizontally, the processed material is pushed out via the blades on the container's **5** front wall. While returning to the rear position, the loaded scrap moves under its own weight into the shears' interior.



*Container shears mode of operation*

# ZDAS



Output of processed scrap from the container shears

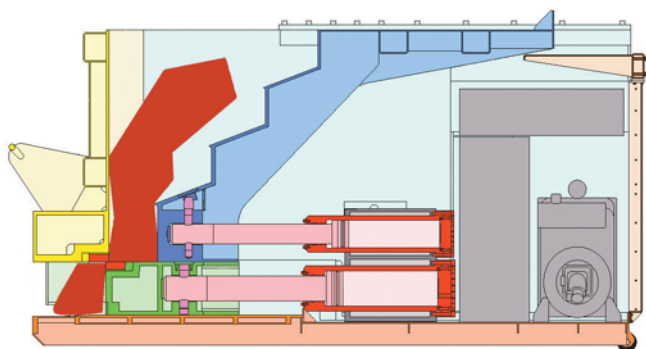


Loading the CNS 400 K shears with a grab loader

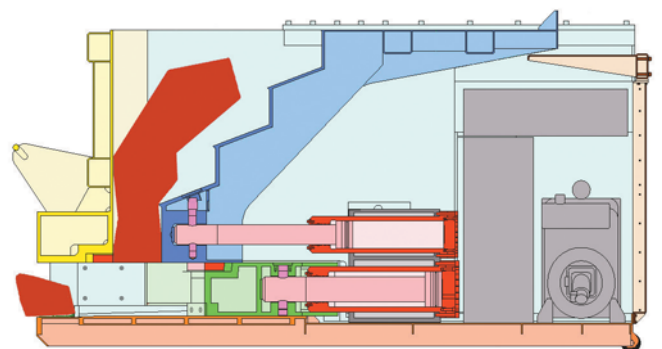
## Basic technical parameters of the CNS 400 K shears

		DIESEL	ELECTRIC
TYPE OF MACHINE		CNS 400 K	CNS 400 K-E
Outer dimensions (L x W x H)	mm	5,330 x 2,500 x 2,700	5,330 x 2,500 x 2,700
Processing (steel scrap)	t/hr.	7-12	7-12
Cutting force	t	400	400
Max. cutting section (with tensile strength of 440 MPa)			
- Diameter	mm	110	110
- Square	mm	90 x 90	90 x 90
Engine output	kW	100	75*

\* At 400 V / 50 Hz



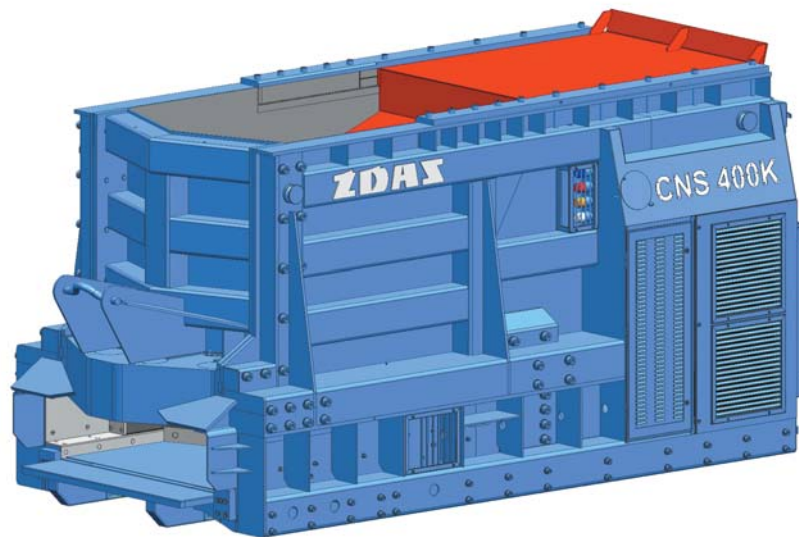
Protracting of the tool-holding slide (shearing scrap)



Retracting of the tool-holding slide



The CNS 400 K shears  
on a hooklift trailer



Loading  
the CNS 400 K  
shears with long  
scrap



Loading the container shears on a carrier



Processing scrap

# ZDAS

Compared to standard stationary shears, ZDAS container shears offer an original method of cutting by means of a horizontal movable tool-holding slide. This slide is located on the lower part of the loading chamber.

The shears can be remotely operated.

Like standard large-volume containers, these shears can also be lifted and moved by a hooklift truck.

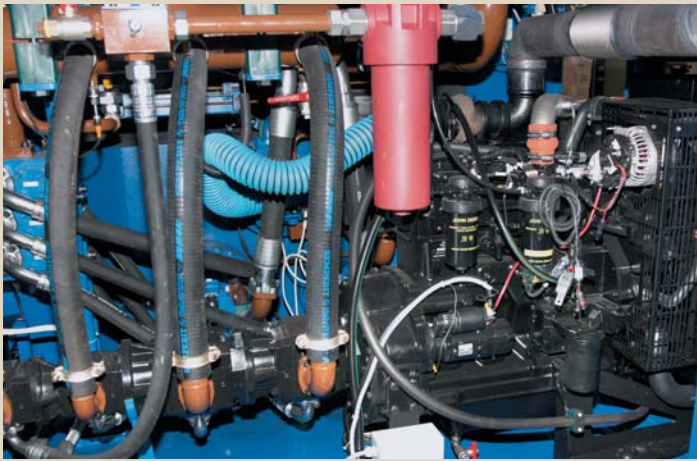
The shears can be delivered with both diesel and electric engines. In addition to the standard version, Tropic and Arctic variants are also available.

Layout of the workplace with the CNS 400 K shears



The CNS 400 K shears are offered with the following options:

- Top hopper
- Guide for loading long pieces – internal hopper



Combination of diesel engine and pump for the shears drive

## CNS 400 K – Diesel

- Due to the effective diesel-hydraulic power pack, low consumption is achieved – as low as 1.2 l per one ton of scrap (depending on the type of scrap)
- A control system from reputable suppliers, which displays error messages, is installed in the machine's distribution box
- Hydraulic components with extended service lives are supplied by well-respected global manufacturers
- The standard water-cooled diesel engine guarantees trouble-free operation even at extreme temperatures of  $-20\text{ }^{\circ}\text{C}$  to  $35\text{ }^{\circ}\text{C}$



Combination of electric engine and pump for the shears drive

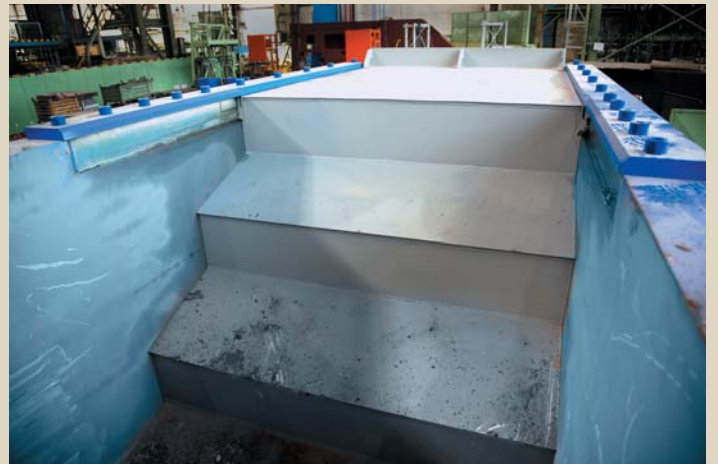
## CNS 400 K-E – Electric

- For scrap yards with access to electricity, ZDAS offers a variant of the shears with an electric engine
- Control system including error messages is installed inside the machine's distribution box and is supplied by well-respected manufacturers
- Lower costs for one ton of processed scrap
- Quiet operation
- Minimum amount of engine maintenance
- Longer service life of the pumps when working at lower speeds
- Maintenance downtime is reduced

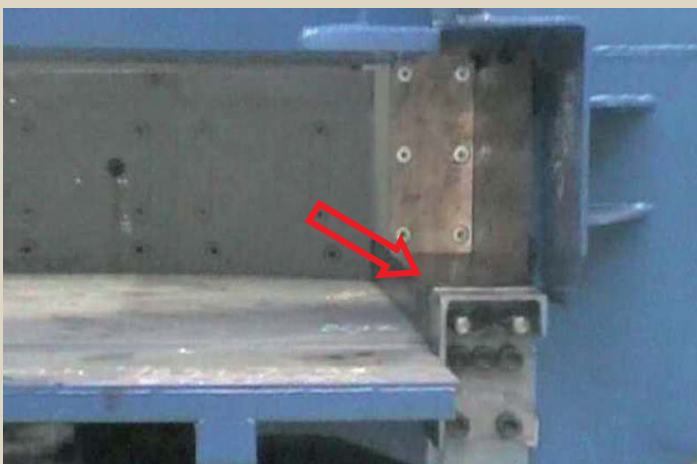
Both diesel and electric versions can be supplied in **Tropic** (up to  $+45\text{ }^{\circ}\text{C}$ ) or **Arctic** (up to  $-30\text{ }^{\circ}\text{C}$ ) variants



View of the cutting blades, which are the full width of the loading chamber



View of the scrap holding space



Accurate guiding of the tool-holding slide ensures transmission of maximum cutting force to the scrap



Remote control of the shears ensures safe operation and control by one operator





*CNS 730 SM shears loaded on a flatbed trailer*

## SEMI-MOBILE SCRAP SHEARS

# CNS 730 SM

- New generation of ZDAS semi-mobile shears
- Suitable for cutting heavier and larger pieces of scrap
- High performance – up to 20 tons of processed scrap per hour
- Diesel or electric engines
- Extremely stressed parts are made of castings

# ZDAS



*CNS 730 SM shear ready to be loaded on a flatbed trailer*

As a result of the overwhelming success of ZDAS standard container shears, a more powerful series having 730 metric tons of cutting force was developed. The horizontal tool-holding slide cutting technique was kept and the framework was reinforced appropriately. In order to maintain the high performance of the shears, a higher output hydraulic drive was installed.

The top hopper enables filling of the load space with bulky or long scrap. With respect to their robust construction and force, the CNS 730 M shears are fully comparable to the stationary shears from their competitors. The difference is that they can be easily moved using a flatbed trailer. The shears can be loaded on a flatbed using their own hydraulic lifting legs and/or they can be loaded by crane. Within several minutes they are ready for transport to another scrap yard.

## Basic technical parameters of the CNS 730 SM shears

		DIESEL	ELECTRIC
TYPE OF MACHINE		CNS 730 SM	CNS 730 E
Outer dimensions (L x W x H)	mm	7,950 x 2,500 x 2,700	8,300 x 2,500 x 2,700
Processing (steel scrap)	t/hr.	12-20	12-20
Cutting force	t	730	730
Max. cutting section (with material strength of 440 MPa)			
- diameter	mm	160	160
- square	mm	140 x 140	140 x 140
Engine output	kW	186	2 x 75*

\* At 400 V / 50 Hz



Examples of heavy scrap processing



Loading scrap into the CNS 730 SM shears



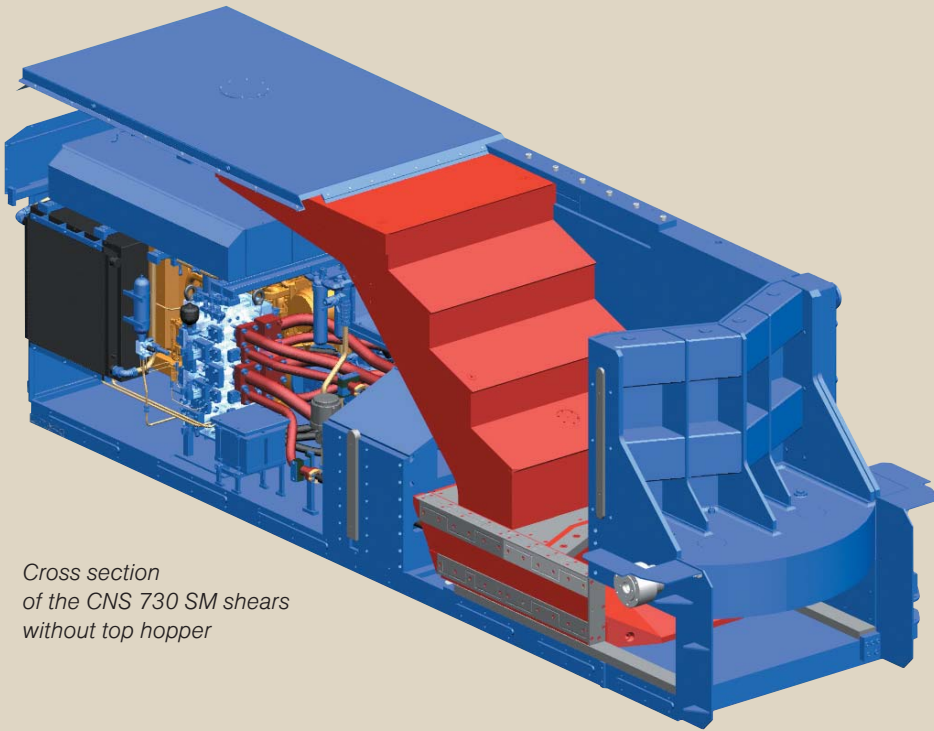
View of the cutting area

The CNS 730 SM shears are offered with the following options:

- Top hopper
- Guide for loading long pieces
  - internal hopper
- Simple loading/unloading using the hydraulic legs

# CNS 730 SM – Diesel

- High performance shears with consumption as low as 2.5 l of oil per one ton of processed scrap
- Control systems from reputable suppliers are used
- A pusher with 190 tons of force enables the scrap to be pre-compacted
- A combination of pumps eliminates hydraulic shocks and the water-cooled diesel engine is reliable even at extreme temperatures of  $-20\text{ }^{\circ}\text{C}$  to  $+35\text{ }^{\circ}\text{C}$



Cross section of the CNS 730 SM shears without top hopper

# CNS 730 E – Electric

- ZDAS offers an optional electric engine for local scrap yards in industrial or suburban areas with access to electricity
- Lower costs for one ton of processed scrap
- Quiet and ecological operation
- Low maintenance on the engine
- Longer service life of the pumps when working at lower speeds
- Simple maintenance and operation

## Further advantages:

- Continuous loading of scrap into the hopper while pushing out the processed scrap
- High-capacity oil tank enables as much as 16 hours of continuous operation
- No foundation is needed to install the shears – all you need is an even and firm surface



Remote control of the shears by the scrap yard operator



Control system panel with screen

# STATIONARY SCRAP SHEARS

## CNS-PVM

### CNS stationary shears with side compression

- ZDAS new stationary scrap shears
- Excellent price/quality ratio
- Suitable for cutting large quantities of heavy, bulky or amortisation scrap
- Produced in series with cutting forces from 8 to 16 MN and outputs from 20 to 95 tons/hr.
- Scrap can be loaded during automatic cutting cycle with minimum time loss
- Low height of the hopper enables easy scrap loading via a mobile loader



Workplace with CNS-PVM hydraulic shear

### Basic technical parameters

		CNS-PVM
Cutting force	t	800; 1,000; 1,600
Length of charging chamber	mm	6,000; 8,000; 10,000
Width of charging chamber	mm	2,000–2,500
Height of charging chamber	mm	1,600–2,300
Maximum strength of the processed material	MPa	440
Installed input of the main pumps	kW	3 x 110 – 8 x 110
Shears output (steel scrap)	t/hr.	20–95

## Advantages:

- Possibility to load scrap during cutting
- PLC diagnostics
- Central lubrication
- Sensors on all rollers
- Drive located inside of container
- Hydraulic clamping of knives
- Monitors hydraulic oil levels

# ZDAS



Front view of the shear and side cover of the pusher



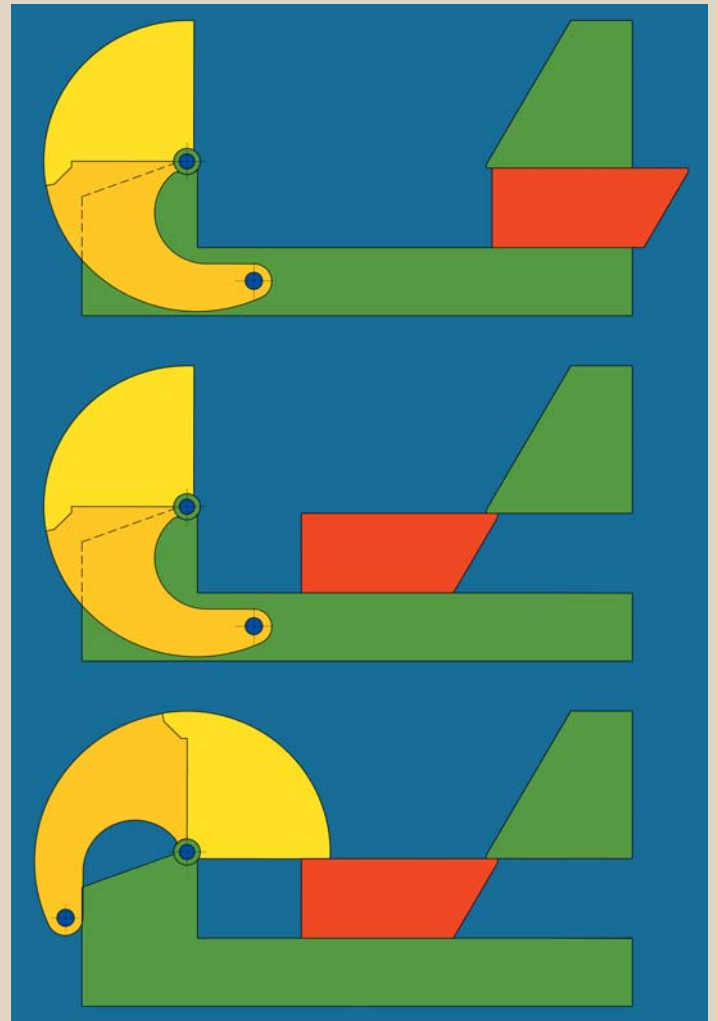
Moving cover of the cutting area



Hydraulic cylinders operating the folding cover



The pusher's hydraulic drive



Schematic of the scrap compression principle

# STATIONARY SCRAP SHEARS CNS-CV2

## CNS stationary shears with the option of baling

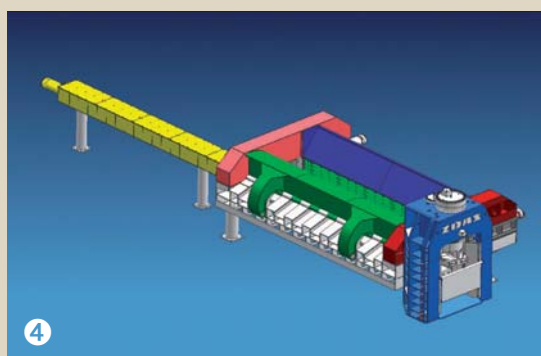
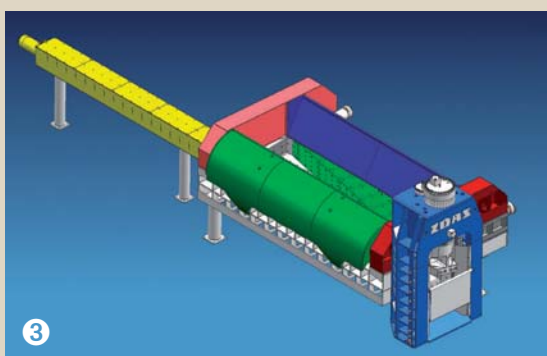
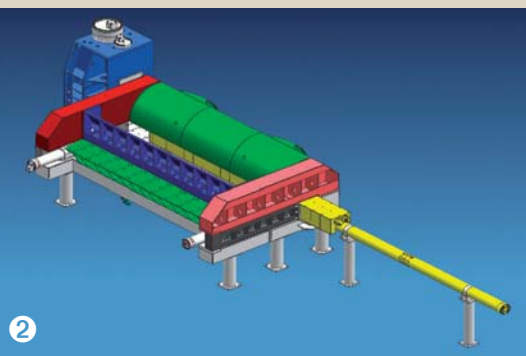
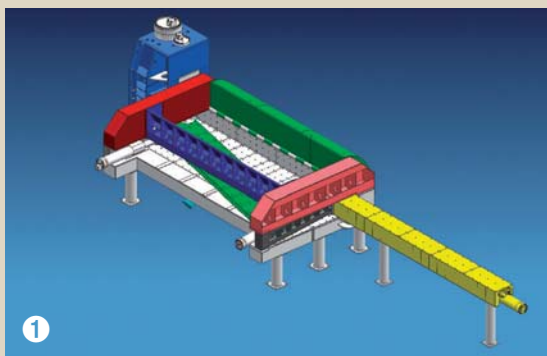
- Cuts and bales steel scrap
- High shearing force
- Patented press before shearing technology and high deformation forces allow for processing of extremely hard scrap
- CNS shears can operate in an extreme range of temperatures
- Remote connection to the ZDAS Service Center enables efficient technical assistance



### System of scrap processing with a jaw and cover with the option of baling

With a tensile strength of 440 MPa, the shears are designed to cut and bale bulky amortization and bar scrap

CNS-CV2 shears at the plant of a Russian customer



- 1 Side precompression of scrap by a swinging movement of the jaw
- 2 Movement of the swinging cover moves scrap up to the height of the pusher
- 3 Extended movement of the press cylinder bales the scrap and moves it to the cutting area
- 4 Compressed scrap is either pushed out as a bale or is cut to a working length

## Basic technical parameters

		CNS-CV2
Cutting force	t	800; 1,100; 1,600
Length of charging chamber	mm	6,000; 8,000; 10,000
Width of charging chamber	mm	2,000–2,500
Height of charging chamber	mm	2,000
Maximum tensile strength of the processed material	MPa	440
Maximum thickness of the baled material wall	mm	6
Installed input of the main pumps	kW	4 x 75 – 6 x 75
Shears output (steel scrap)	t/hr.	23–45



Input before shearing



Pushing out the cut scrap



Input before baling



Output of the bale



CNS shear in operation at a Russian customer's plant

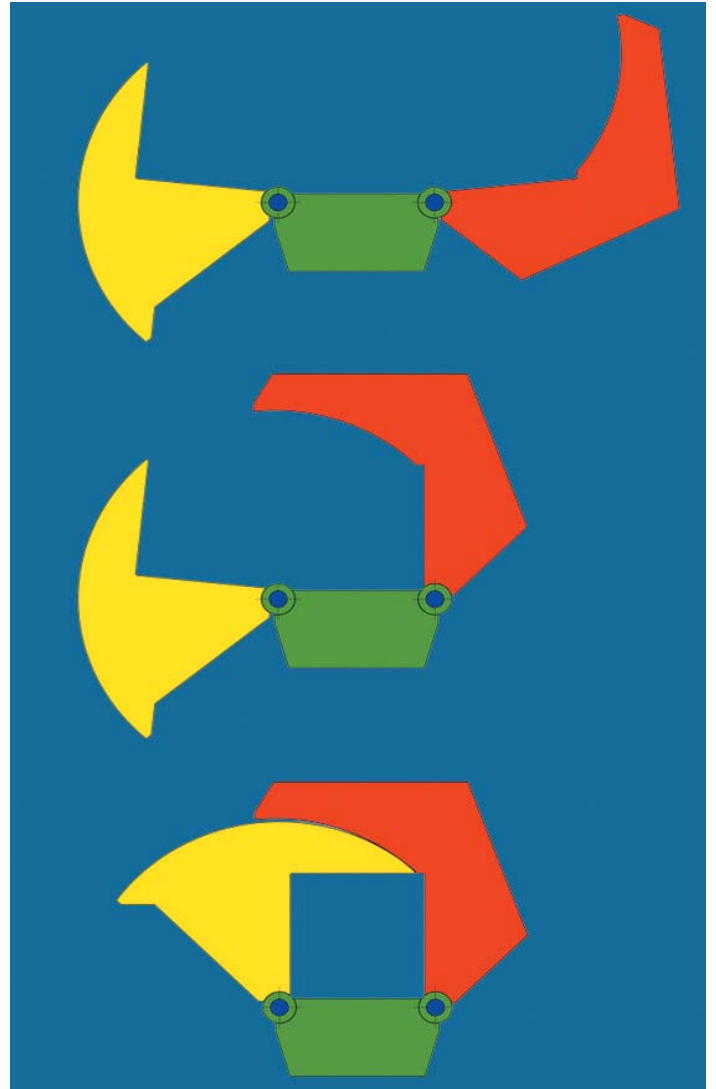
# STATIONARY WING SHEARS

# CNS 630-S



CNS 630-S wing shear is a stationary shear with high output

- Precompression of cut scrap using two swing-mounted side plates – wings
- The width and height of the scrap is reduced and the entire contents is compressed into a square
- The clamp pushes the scrap into the shearing area
- The holder pushes the scrap and the blade sledge shears it
- The entire cycle is automatic
- Scrap can be charged into the tilting hopper during shearing and then dumped out into the open charging chamber at the end of the cycle
- The shears are controlled either directly from the operating cabin or from the portable panel by the loading operator



Schematic of the wing shear scrap compression principle

## Basic technical parameters

		CNS 630-S
Max. shearing force	kN	6,300
Max. number of cuts	1/min.	6
Max. output	t/hr.	15
Max. diameter to be sheared	mm	150
Tensile strength of material to be sheared	MPa	440
Length of charging chamber	mm	5,250
Width of charging chamber	mm	2,100
Height of pusher	mm	600
Shearing width	mm	640
Length of shears	mm	13,800
Width of shears	mm	5,950
Height of shears	mm	5,800



Side view of the CNS 630 shears



# BALING PRESS WITH COVER **ZDAS**

## CPB 100

### MOBILE EQUIPMENT



Opening the cover enables sufficient space for scrap feeding

#### ZDAS Baling Presses are offered in two versions

- With folding cover – pressing in two directions (CPB)
- With horizontal and vertical pusher – pressing in three directions (CPS)
- Steel and non-ferrous metals up to 8 mm thick can be pressed, depending on dimensions of the press
- ZDAS baling presses achieve up to 25 times higher specific weight with steel scrap density of 140 kg/m<sup>3</sup>



CPB 100 baling press is easy to relocate



CPB 100 press efficiently processes municipal waste

#### Basic technical parameters of selected presses

		Standard Design			
		CPB 100	CPB 200	CPB 400	
Max. pressing force	kN	1,000	2,000	4,000	
Bale	- Height	mm	300	400	600
	- Width	mm	300	400	400
Charging chamber	- Length	mm	1,300	1,800	2,600
	- Width	mm	1,000	1,300	2,600
	- Depth	mm	700	800	1,500
Max. thickness of the steel scrap	mm	3	5	8	
Max. number of bales	1/hr.	29	27	55	
Max. output (steel scrap)	t/hr.	4.1	10	26	
Power input installed of the main pumps	kW	18	55	2 x 75	

# STATIONARY EQUIPMENT

# CPB 200



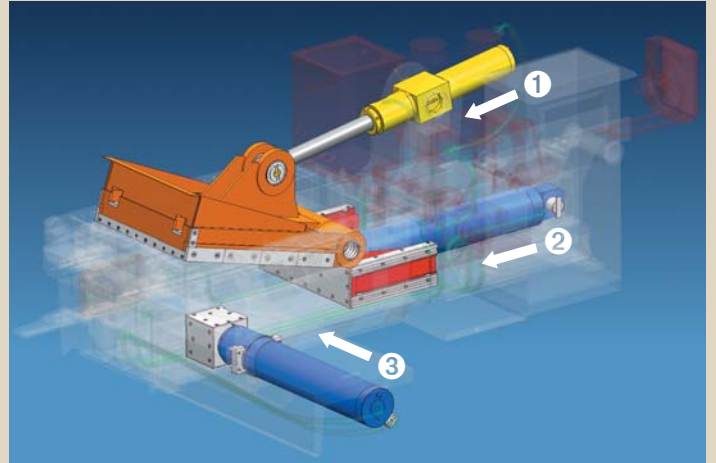
Tilting the hopper of the CPB 200 press enables easy scrap loading



CPB presses conform to strict environmental regulations



The press includes a bale conveyer



Schematic of hydraulic parts on a CPB press

# STATIONARY EQUIPMENT

# CPB 400



Opening the cover enables enough space for scrap feeding

## Accessories for ZDAS CPB baling presses

- Truck mounted crane with grabs
- Control cabin
- Bale removal
- Remote control of the press from the crane cabin

# ZDAS

# BALING PRESSES WITH FOLDING HOPPERS

- Effective processing of scrap from pressing shops
- Dosing equipment with scrap weighing device
- Environmentally friendly
- High operational output

## ZDAS



ZDAS baling presses offer a favourable price/quality ratio

### Basic technical parameters

		Standard Design		
		CPS 160	CPS 320	CPS 630
Pressing force: the last operation (repressing)	kN	1,600	3,300	6,300
Bale	- Height	300	400	600
	- Width	300	400	600
Charging chamber	- Length	1,480	1,650	5,000
	- Width	900	1,400	1,960
	- Depth	750	1,250	1,600
Max. thickness of steel scrap	mm	4	6	8
Max. number of bales	1/hr.	92	90	61
Max. output (steel scrap)	t/hr.	12.5	28	58
Power input installed of main pumps	kW	75	2 x 75	3 x 75

BALING  
PRESSES

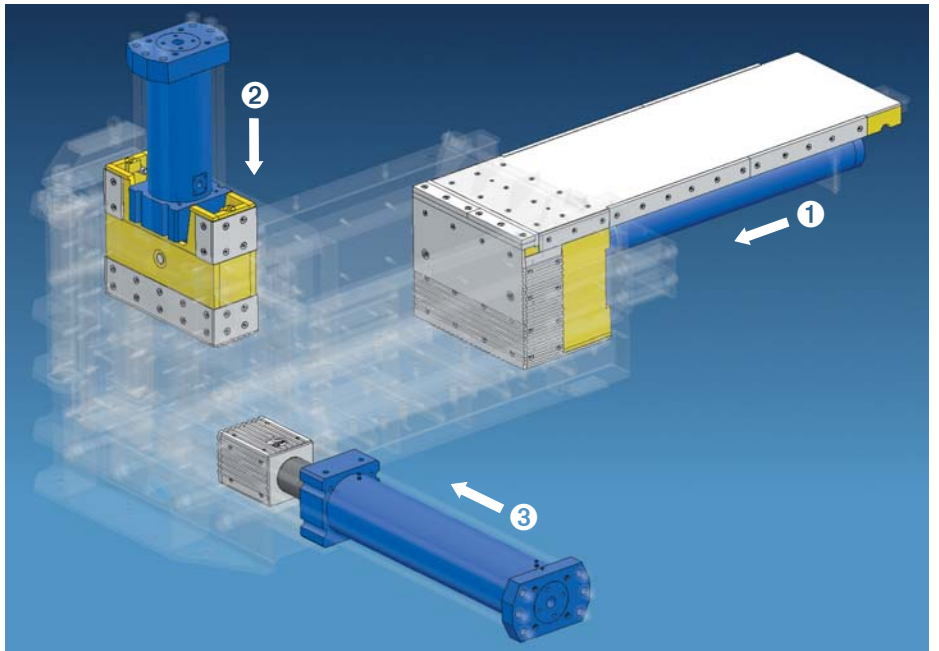
# CPS 160

- Effective processing of cut scrap from automotive factory pressing shops
- CPS 160 – Bale section: 300 x 300 mm
- CPS 320 – Bale section: 400 x 400 mm

# ZDAS



CPS 160 baling press at the pressing plant of a car body producer



Schematic of hydraulic parts from a CPS press



ZDAS CPS 320 baling press in a pressing shop of a large automotive manufacturer

# BALING PRESSES

# CPS 320



*CPS 320 press with a hopper*



*Output of bales*



*Press drive in a separate cabin*

CPS 320 baling presses can be implemented into scrap processing lines of pressing shops in automotive factories. The unit includes conveyers that bring cuttings from individual pressing workplaces and enable transport of compressed bales to the warehouse or directly to the dispatching area. A working cycle of 30 seconds/bale is achieved with an average bale weight of 200 kg, provided that loading is continuous.

# ZDAS

# HYDRAULIC BALING PRESS

The CPS 630 hydraulic baling press is designed for processing amortisation scrap in scrap-processing-oriented companies. This baling press is especially suitable for processing the following: light large-volume depreciation scrap, crop ends of sheet with a thickness up to 8 mm, car bodies, parts of agricultural and transport machines, etc. To reach a high output, it is suitable to install a batching tilting hopper to ensure a continuous feed of scrap and discharge of final bales.

## HYDRAULIC BALING PRESSES CPS 630

### Features of the press:

- The three-stage pressing concept guarantees high compactness of bales
- Replaceable abrasion-resistant lining of working surfaces of the press
- Knives of the charging hopper enable cut off of protruding scrap
- The drive is a compact assembly group
- Simple operation by remote control
- The drive is provided with an environmentally-friendly oil tray

*Bale output*



# ZDAS

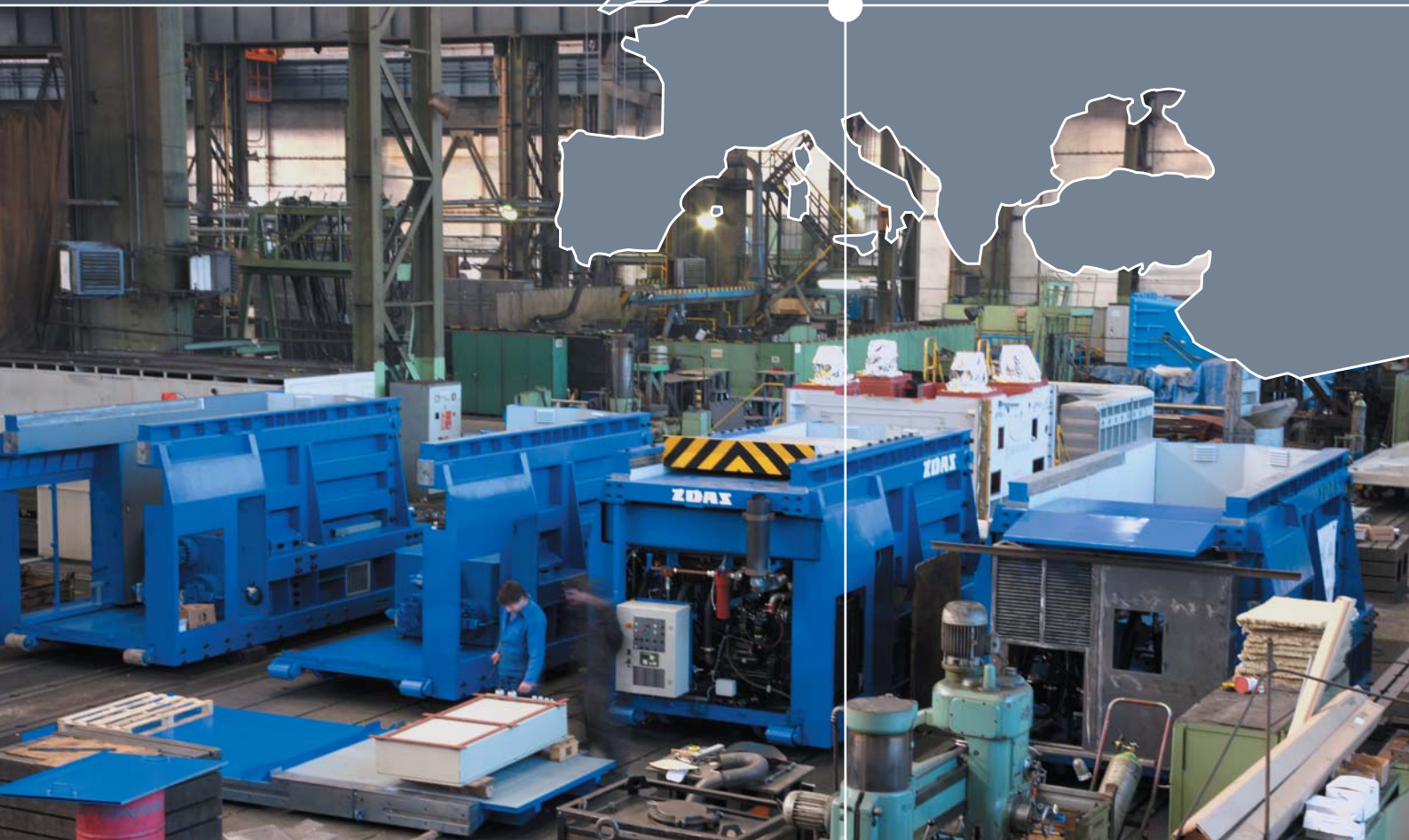


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*Production of scrap shears in the ZDAS manufacturing hall*

