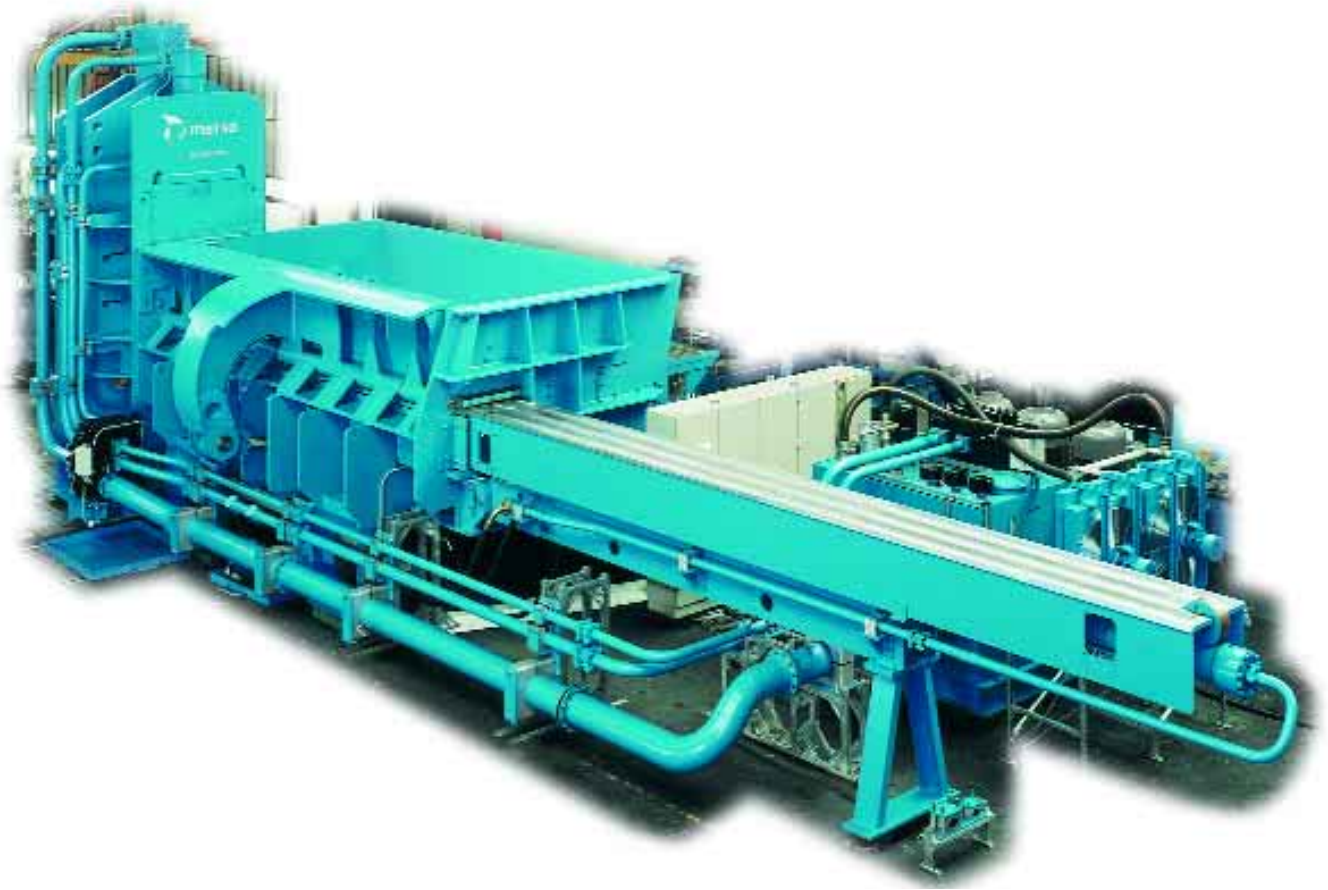




# Lindemann EC Scrap Shears

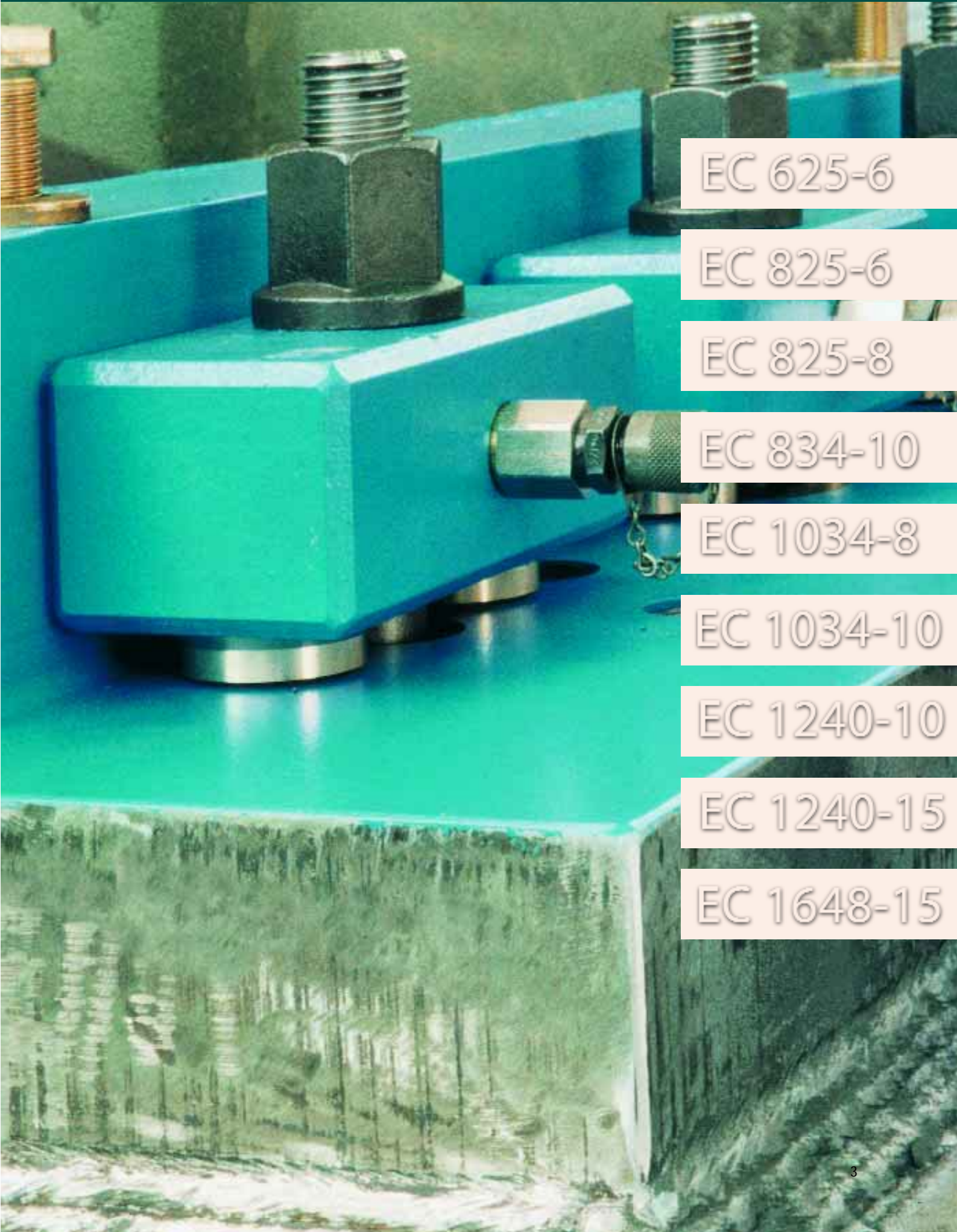




## Experience does not just fall into your lap

Names that are well known in the international recycling industry, such as Lindemann and Oberländer Recycling Technik, are today part of Metso Minerals. With over 1,500 scrap shears sold worldwide and a wealth of technical innovations, these companies have set new standards for hydraulic scrap shears for decades, and shaped the criteria by which they are judged.

Metso Minerals possesses not only the know-how but also the tradition of innovating spirit needed to continue on the same course. We present proof of this in our latest generation of scrap shears, which reveals features that have never been seen in such abundance in any other series of scrap shears to date.



EC 625-6

EC 825-6

EC 825-8

EC 834-10

EC 1034-8

EC 1034-10

EC 1240-10

EC 1240-15

EC 1648-15

## Lindemann's new EC generation

The designation „EC“ is an abbreviation for „EtaCut“, which incorporates the Greek letter  $\eta$  (eta), the technical symbol for efficiency. Here it stands for the extremely high effectiveness and low life-cycle costs of the new generation of Lindemann scrap shears. These are reflected in increased processing flexibility, low specific power consumption, enhanced operational reliability, and reduced maintenance costs.

The new generation also features an unprecedented degree of pre-assembly at the works. This includes, not only the frame and the box, but also pipelines, control blocks, hydraulic units, and supporting structure. This results in reduced assembly times at the site as well as improved maintenance conditions.





## Universal and effective

Scrap shears must be able to process the widest possible range of scrap types economically. Whether you want to cut mixed and heavy scrap, bale light scrap and car bodies, or break up castings and rails – the Lindemann EC scrap shear offers you all those possibilities with effortless ease, thanks to the effective, coordinated interaction of all its components.

Side press and lid operate with extreme overstroke. They reliably compact the scrap into logs that are narrower and lower than the shear opening.

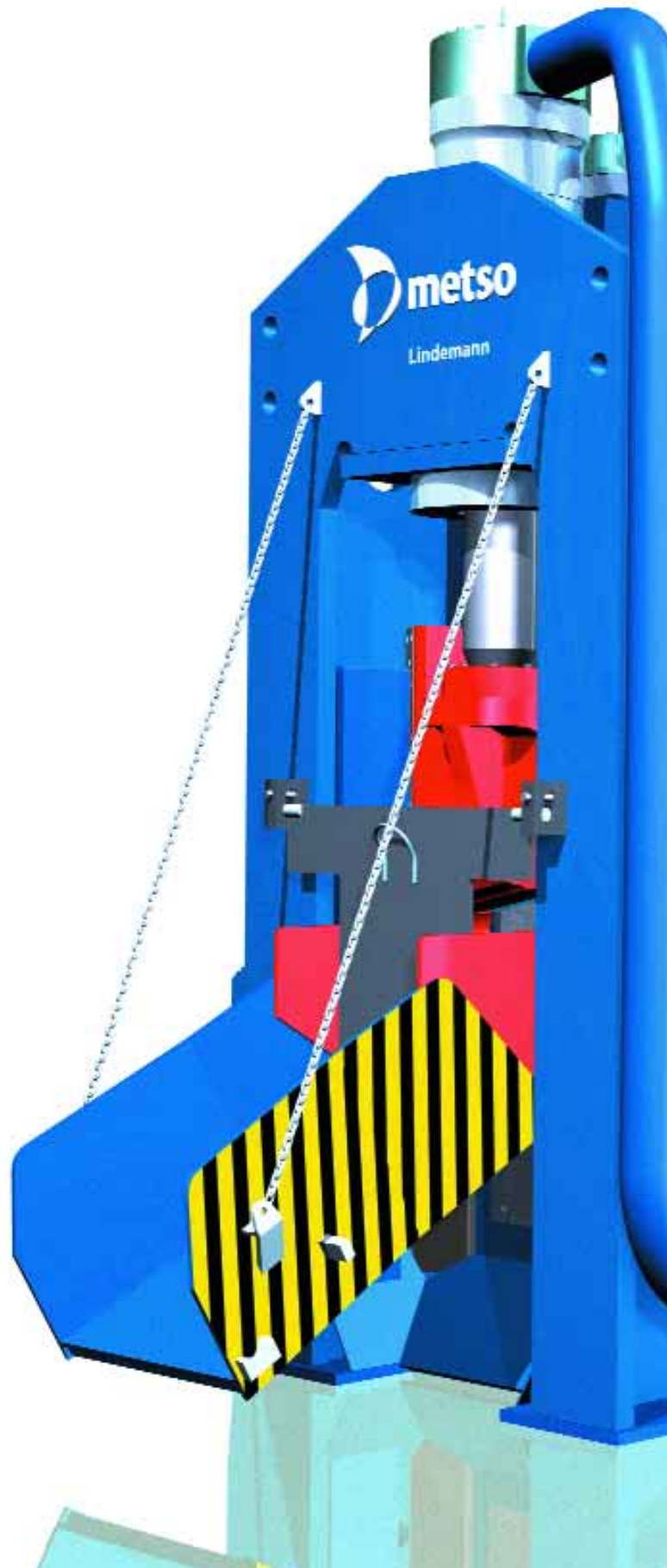
The new kinematics of the lid ensures that the force it applies is greatest where it really counts. For reasons of safety, the lid cylinder is so arranged that it is protected from falling scrap.

The perfected design of the side press, combined with increased mechanical synchronism, ensures that the force of the cylinder comes to bear with maximum effect at every point in the press box, even when the scrap is positioned eccentrically. Slanted positioning, and the resulting frictional losses, cannot occur. Furthermore, the form-locking attachment of the side-press cylinder avoids any strain on the weld seam.

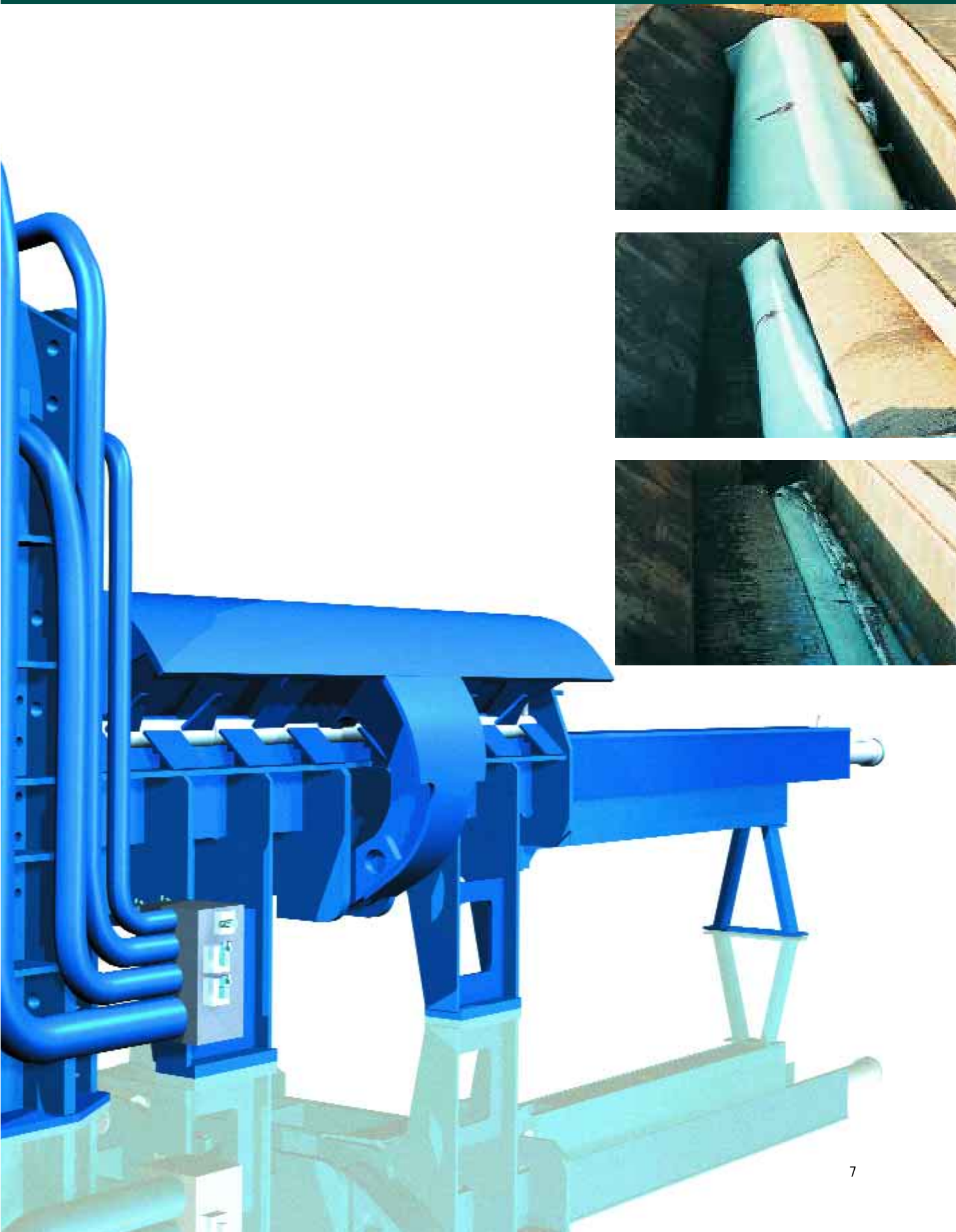
The volumetric capacity of the feeding hopper integrated in the press box is greater than the filling volume required for the next operating cycle. Stop periods for loading are thus avoided, and the utilization of the shears is increased.

The supporting table, as a component part of the blade slide, ensures that even short pieces of scrap are cut. And the breaker-bar increases cutting capacity by up to 30 percent, depending on scrap type, with the same input of energy. Hard and brittle scrap is broken even during initial bending and does not come into contact with the upper blade, so that the service life of the blades is prolonged. And finally, the integrated mobile scrap chute ensures reliable discharge of scrap with less noise.

Naturally, if special conditions at the site require that the transmission of oscillations or vibrations into the ground be prevented, we can also offer options for vibration-damped installation.



# Features & Benefits



## Faster, more direct, more reliable

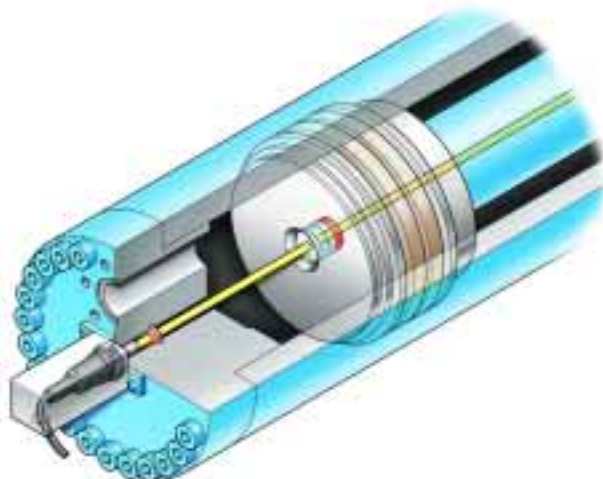
Our drive and control system permits maximum throughput with low specific power consumption. With no increase in driving power, the cycle times of Lindemann EC shears have been further reduced by up to 15 percent, even though all effective compression forces have been increased. The factors contributing to this include:

- our special oil transfer control, by which hydraulic oil from the reverse movement of one cylinder is fed directly into another, operating in the low-pressure range, to increase speed;
- new positioning systems using integrated path sensors or lasers. These ensure precise determination of the positions, speed and acceleration of the pistons over their entire travel distance, and thus permit precise steering towards the optimum hydraulic switch points. They also permit cutting length adjustment which is accurate to a millimeter.
- optimized dampening of the cutting shock, and logic blocks which make for faster yet smoother operating cycles without hydraulic shocks.

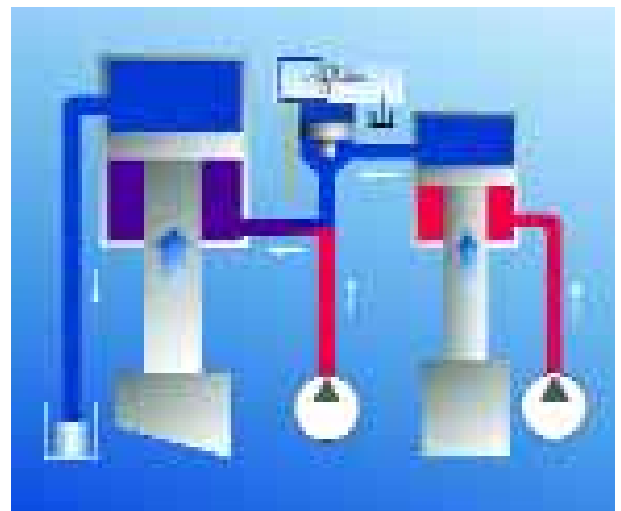
To increase operating reliability and lengthen the service life of the hydraulic components and the hydraulic oil, 5  $\mu\text{m}$  filters continually purify the oil in the by-pass oil flow.



*Hydraulic operation: compact, and geared to maximum efficiency*



*Integrated positioning system: protected and precise*



*Oil transfer control: faster, but with no extra supply of power*



## Informative and helpful

With our multi-information terminal, operation and, if need be, trouble-shooting, is easy. Graphics display, process data visualization, and on-line help in the language you desire embody the state of the art.

The shear control offers a number of automatic programs for effectively processing the widest possible variety of scrap grades. In fact, standard-version Lindemann EC shears can even determine independently the best program for the particular type of scrap. The load on the shear is continuously displayed at the multi-information terminal, so optimum productivity is assured.

The shear's operational data, production data and status reports can also be displayed and processed on decentralized computers. And the option of remote diagnosis via Teleservice offers the assurance of rapid, economical help.



*Our logicblocks enable fast ,yet smooth operating cycles*



*Multi-information terminal: comprehensive monitoring plus finest control*

## Maturely considered and highly functional

Wherever scrap is cut, protection against wear is eminently important. Metso Minerals has devoted particular attention to those areas that are most subject to wear and tear.

The comprehensive wear protection of Lindemann EC shears extends operating periods and reduces expensive repair and maintenance work. In addition, design features in the entire shear area facilitate replacement of the wear protection components, which are mostly bolted, eliminating the need to remove entire operating units when wear parts are exchanged.

The WearCon automatic wear monitoring system (patent pending), which forms part of the standard equipment, signals independently and well in advance when the time to exchange wear plates is approaching. Wear indicators fitted in exposed positions in the stamper body and pusher transmit the necessary information to the multi-information terminal via an electric signal. Our customers can thus plan their orders for replacement parts in good time and make the exchange of wear plates without any urgency.

With the proven prismatic guides of our blade slides, the face pressure has been yet further reduced through enlargement of the guide surfaces. In addition, the wear-protection combination of the guides of the blade slides, made from hardened steel and plastic, permits hard foreign bodies to become embedded in the plastic and thus cause no further damage to the guides. Plastic, furthermore, has excellent emergency running properties.

The modular design of the new press boxes of 6, 8 and 10 meters' length substantially reduces the diversity of wear plates required for the press box, thus making it possible to supply wear plates without delay.



*Exemplary protection against wear in all areas subject to wear and tear*



*Stamper: completely protected by high-strength, exchangeable wear plates*

## Ease, economy, and all-round protection

Regular maintenance ensures high productivity over time. However, the maturely considered design of Lindemann EC shears cuts maintenance costs and makes maintenance work easier.

For example, standard equipment includes PLC-controlled central lubrication to ensure that all guide areas are adequately greased and that unnecessary wear, or worse, is avoided.

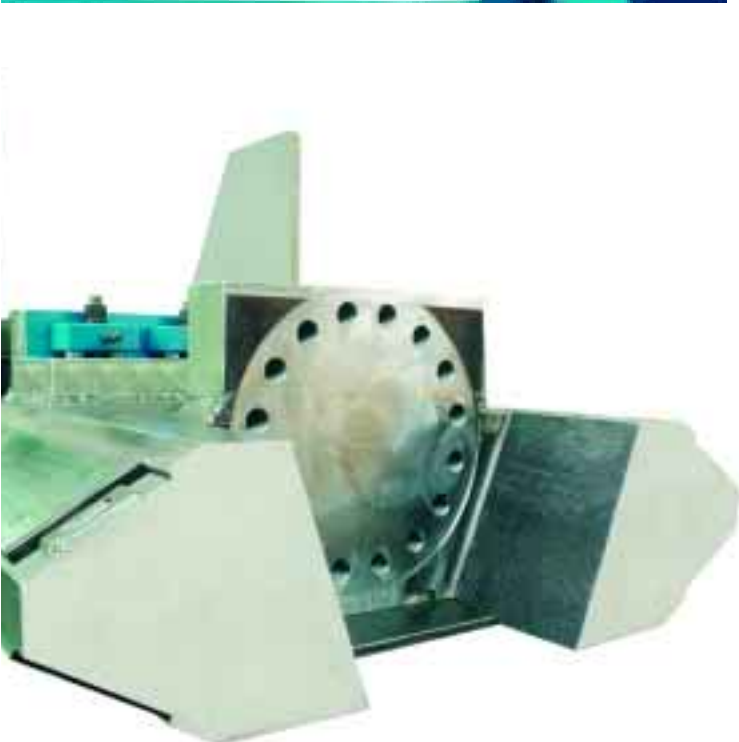
It also includes a hydraulic blade tensioning device which continuously monitors the correct setting and attachment of the shear blades and automatically adjusts the tension, if required. This results in increased operational reliability plus extended blade service life, and makes manual checking and readjustment unnecessary.

Obviously, we have also provided for the possibility of slightly adjusting the guides of the blade slide from outside. And the scope of supply of these shears also includes blade-changing platforms, which facilitate the exchange of cutting knives and provide increased safety for your maintenance personnel during their work.

The integrated infinitely variable positioning system, using path sensors or lasers, makes trouble due to dirt and falling scrap a thing of the past, whereas, with proximity and limit switches, it was unavoidable.

Use of the infinitely variable positioning system now also enables dynamic oil level control in scrap shears. The electronic monitor indicates even the slightest losses of oil and thus provides increased protection for the hydraulic components and the environment.

All cylinders are fitted with extra-broad piston rod glands for high security against leakage. In addition, the cylinders can be checked for imperviousness by means of a special checking inquiry.



*Blade slides: prismatic guides ensure low face pressure*

## Metso Minerals Recycling Equipment

### Our range:

Scrap shears  
Shredders  
Metal crushers  
Turnings crushers

Scrap baling presses  
Briquetting presses  
Double screw presses  
Anode crushers

NF-metal separators  
Trommel screens  
Sorting plants

Hammer mills  
CR crushers  
Rotor shears  
Bulky refuse shears

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