

The efficient scrap shear from Metso Recycling
Lindemann Power[®]Cut



The Lindemann Power®Cut

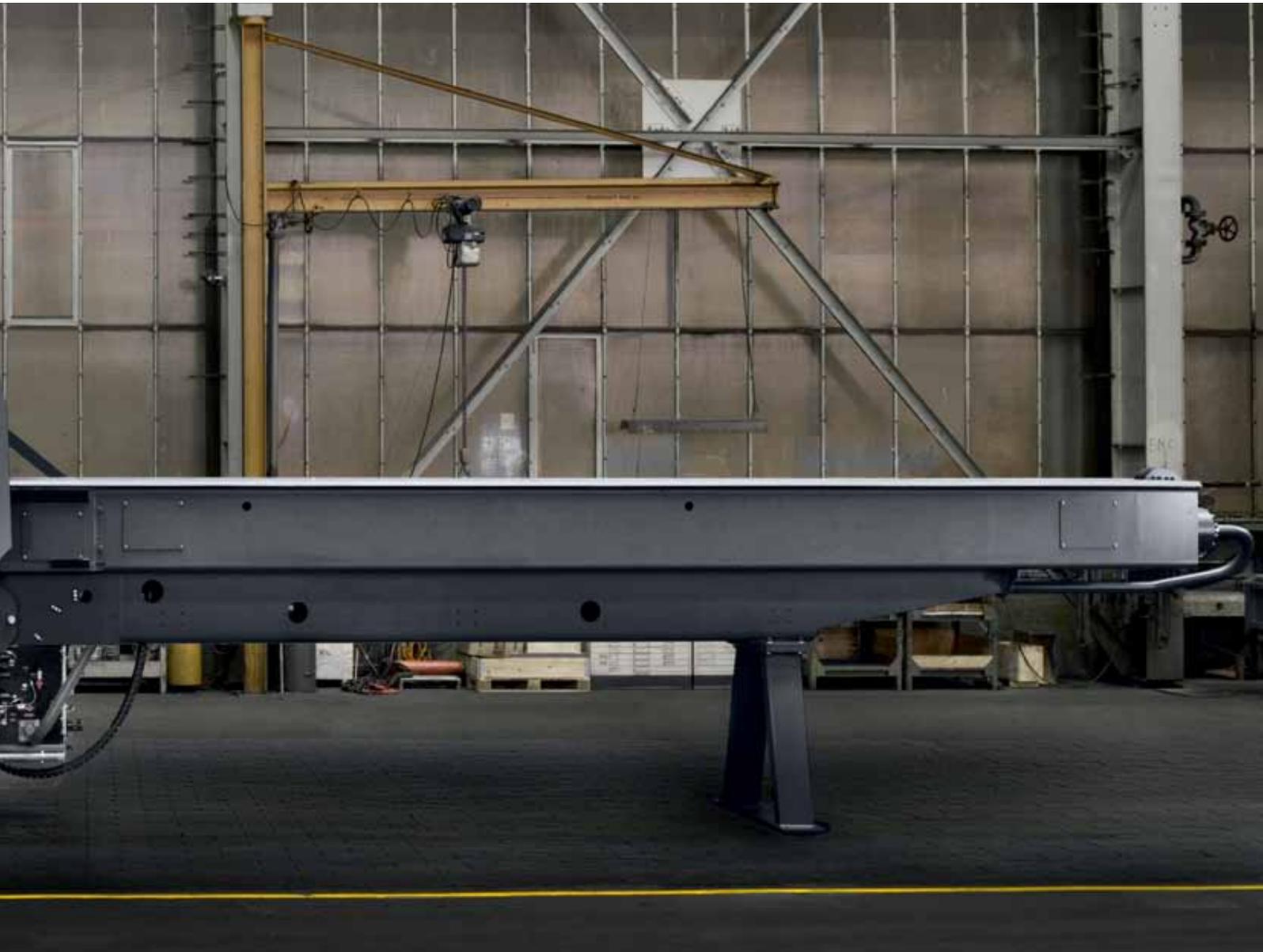
Strong concept, strong performance and second to none efficiency

Over 90 years of experience in the recycling field and commitment to meeting the needs of our customers have paid off. The technology is recognized worldwide as leading, manifests itself in superior productivity with extremely short downtimes. The Metso Recycling quality ensures an outstanding service life and resale values – the lowest total cost of ownership.

Lindemann Power®Cut, outstanding output with medium volumes

It can be very difficult to determine which scrap shear is the strongest or fastest – the decisive factor is the output at the yard and with any type of scrap that turns up. We have listened carefully to our customers' practical requirements and have translated our experience into technologies – we understand your business. The Lindemann Power®Cut has been specially developed to process medium production volumes with minimum energy consumption and costs. Flexibility is a factor, which is essential in cases where the recycler has to cope with changing types of scrap.





Strong concept, strong performance and second to none efficiency

Lindemann Power®Cut the efficiency class

Higher efficiency through intelligent hydraulic management

A single control block for the entire machine harmonises the cutting process and is less prone to faults. The combination of high and low pressure pumps incorporating an optimized switching sequence results in faster working cycles with reduced installed driving power. All high pressure pipes are bent instead of being welded, as is usual, so that flow losses are minimized and weak points which could result in leaks are avoided.

Higher efficiency through less downtime

Highly abrasion-resistant Lindur wear pates protect all parts of the machine coming in contact with scrap. A feature unique to Metso Recycling, almost all wear plates are bolted.



Technical data Power®Cut 816, 1025

Shearing force (t)	800 or 1000	
Blade width (mm)	800 or 1000	
Stamper force (t)	160 or 250	
Side compression (t)	250 or 340	
Lid compression (middle) (t)	270	
Pusher force (t)	120	
Feeding bed length (m)	6 or 8	
Drive	Electric	3 or 4 x 90 kW
	Diesel	400 kW
Production capacity (t/h)	up to 46	



Higher efficiency through a protected drive unit

The control system switchgear, together with the electric or diesel drive, is installed in a container. A separate pump room is, therefore, redundant and the most critical and valuable parts of the machine are protected from falling pieces of scrap.

Higher efficiency through location flexibility

Since the shear concept dispenses with a pump room, the new Lindemann Power®Cut can be relocated with relatively little effort due to the integrated transport device.

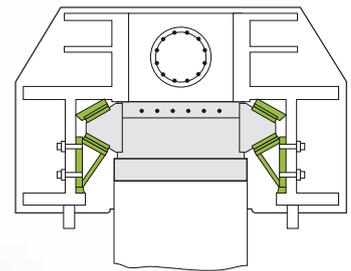
Higher efficiency through precise cutting

Position monitoring is achieved via non-contact sensors that are easier to service than conventional proximity switches. Integrated path measuring systems are used in the stamper and shear cylinder and also in the lid and side compression cylinders. The pusher cylinder is monitored by a protected laser system. This constant monitoring guarantees the precision of the pressing and cutting processes.



Higher efficiency during the cutting process

A breaker bar exerts forces on brittle material in such a way that it will break, even before contact with the upper blade. As a result, wear and the shearing force required are considerably reduced. The blade slide is arranged in an adjustable V-shaped ledge that permits the transfer of shear force with incomparable precision. The shock relief damper reduces the forces that ensue during the cutting process and results in a longer service life of the moving parts.



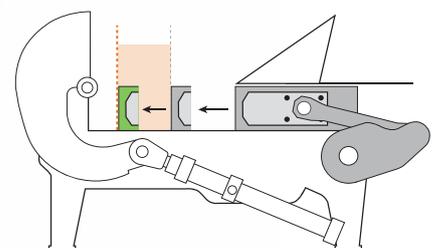
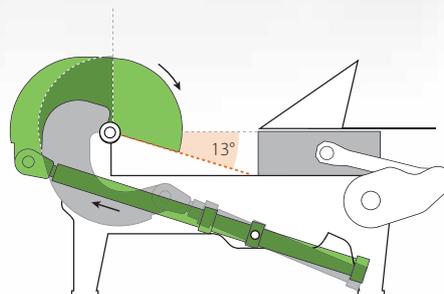
Higher efficiency through planned service

A hydraulic blade tensioning device* with online monitoring can reduce the downtime by half when changing blades. The PLC system allows effective monitoring of the hydraulic system to detect even the smallest leaks and defects at an early stage.

* available as an option

Higher efficiency through over stroking

The side compactor and the lid compress the scrap more than the cutting opening requires. This produces an exceptionally high density in the baled scrap and reduces wear when pushing.

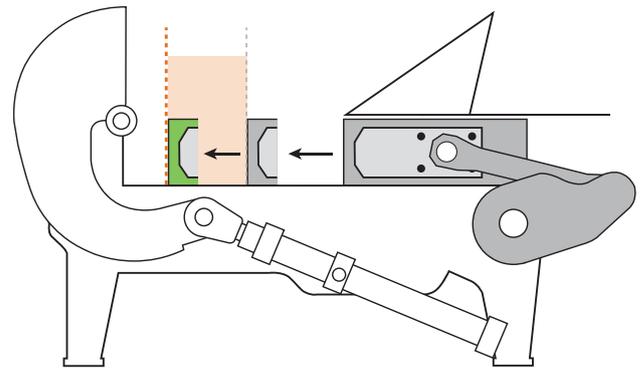




Over stroke of lid and side compactor

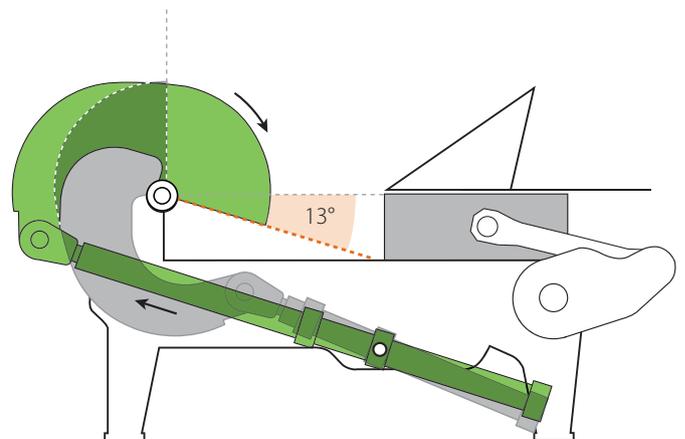
Where others have left off the Lindemann Power®Cut continues

When preparing the scrap for cutting, it is better to do more than necessary. The side compactor and press lid of the Lindemann Power®Cut operates with a large over stroke. The shears compact the scrap into a log that is narrower and lower than the shear opening, this reduces wear on the opening and wears plates, minimizes the necessary force and prevents jamming.



High level of technology ensures the perfect compaction of scrap

The design of the press lid ensures that maximum force develops. The lid cylinder is located under the machine to protect it against falling scrap. The side compactor is designed so that, together with the massive synchronous shaft, it makes the maximum cylinder force effective at every point in the press box – even when the scrap is positioned eccentrically. Tilting and the resultant friction losses are prevented to the greatest possible extent. The feed hopper integrated in the press box has a larger capacity than is necessary for the next work cycle. As a result, downtimes for loading are avoided and the capacity utilization of the shears is increased. Last but not least, the form-fitting manner in which the side pressure cylinder is attached prevents any weld seam stress.





Blade has prismatic guide and laser-controlled position measuring system

Precision increases power

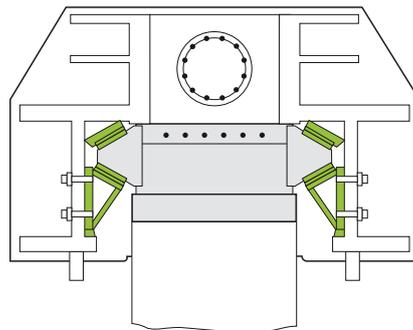
Less malfunctions during the process

Instead of the usual proximity and limit switches, in the case of the Lindemann Power®Cut a noncontact position-determining system is used. The positions of the lid, side-compression, stamper and shearing cylinders are continuously monitored by means of an electromagnetic path measuring system incorporated in the cylinders. The pusher cylinder is monitored with a protected laser system, which is installed underneath the slanted cover.



More efficiency when cutting

By guiding the blade slide in a V-shaped, adjustable rail, Metso Recycling has been able to achieve far greater cutting precision than you can obtain using other technologies. This saves energy when cutting and wear is considerably reduced due to the elimination of uncontrollable forces. In addition, the work of the blade is made easier: The breaker bar, in our Metso Recycling shears, pre-bends brittle material so that it can break without using the blade.





Container for drive and control system

Valuable parts housed safely

The Metso Recycling shear is known to be very robust

The most sensitive and valuable components of a scrap shear, such as the hydraulic and electronic elements, are installed in a standard-size container, which eliminates the need for a pump house. Consequently, time and costs are saved when setting up and the space requirement is reduced to a minimum. Strong outer walls protect against damage from pieces of scrap falling, e.g., from trucks or cranes. If required, the Lindemann Power®Cut can be equipped for winter operation in temperatures down to - 40°C.

Well thought out down to the last detail

Since the container replaces the pump house and the electrical and hydraulic components are preinstalled, costs and time are saved when setting up and the space required is reduced to a minimum. This saves time when installing and costs when transporting. The separate control cabin can be fully air-conditioned if required.

Every source of energy provides efficiency in your Lindemann Power®Cut



Using the energy very efficiently

With an electric drive, the production output of the Lindemann Power®Cut can produce up to 51 tons per hour and up to 6 cuts per minute. The values apply under full load in normal operation with material. The oil supply circuits for shear and stamper are separate so that they can operate simultaneously instead of one after the other. The bent high pressure lines are in one piece and not welded-together shaped sections. This sophisticated technology minimizes leakages and causes less capacity losses. The generously dimensioned pipelines and control blocks also contribute towards this.



Output, even if the next power connection is miles away

The optionally available turbo-diesel motor develops 400 kW driving power. The machine delivers an output of up to 36 tons per hour and up to 5 cuts per minute. The values refer to full load in normal operation with material. The braking points can be optimally controlled by means of volumetric flow control of the hydraulic system. The axial piston pumps are driven directly and are both output and volume controlled. The tank volume is adequate for a 10-hour working day.



A Metso Recycling shear is designed to provide outstanding manufacturing quality and easy maintenance

Highest availability on the market

Only a machine that's running earns money

Scrap processing machines are, by definition constantly subject to high stresses: Steel processes steel. Metso Recycling places great value on workmanship and technology which reduce standstills to a minimum. Metso Recycling secure minimal wear due to high strength materials and the solid quality. Clever design principles enable easy replacement of wear parts during maintenance and highly developed monitoring systems report many faults before serious damage occurs.

Less wear

Highly abrasion-resistant Lindur wear plates protect all parts of the Lindemann Power®Cut coming in contact with scrap. A unique Metso Recycling feature is bolted wear plates which means they are quickly replaced. This reduces downtime when changing to about half. The computer-controlled central lubricating system ensures that the guide elements are adequately supplied with grease, which minimizes friction forces and prevents seizing.

Downtime is minimized

The optional hydraulic blade tensioning device continuously monitors the upper and lower blades for correct seat and, if necessary, automatically readjusts them. This makes manual control and readjustment virtually unnecessary and leads to 50% less downtime when changing blades and to increased operational reliability. An automatic pump test program can be performed via the control system. Any damage is detected at an early stage and reported to the operating terminal. Consequently, maintenance can be planned in good time and performed in a labor-saving manner. The optional remote diagnosis via teleservice allows quick and low-cost assistance in case of problems. Faults can be analyzed by Metso Recycling without being on the spot and the visit of the service technician can be better planned and superfluous.



Assembling an shear at the production site in Düsseldorf

Metso Recycling is the shear market leader

We have been ahead of our time for over 90 years

Whatever it is you value most about high-class workmanship – you can be sure that this perfection and attention to detail is reflected in shears from Metso Recycling. Numerous technical innovations that have been setting standards for hydraulic scrap shears in the recycling field for decades have been invented and refined at Metso Recycling - our inventiveness remains undiminished. With the Lindemann Power®Cut series, we have defined new technical milestones, which our customers acknowledge with increasing order placement.

Obtaining the title “global market leader” requires a lot of hard work

The first three hydraulic guillotine scrap shears in the world went to the USA in 1956. Since then, more than 1,500 of our scrap shears have been put into operation worldwide. In addition, since manufacturing began in Düsseldorf in 1913, baling and briquetting presses, as well as shredders and crushing plants have been successfully delivered from our works to locations all over the world.

We understand your business

Metso Recycling customers have high requirements, and we won't let our customers down. Our developments are aimed at optimizing process chains and supporting your business. Our shears are not just machines, but solutions. We place great value on manufacturing quality and reliability because we know that the failure of a machine costs our customers money. This concentration on quality has earned our machines a virtually legendary reputation that is reflected in the resale value.

The force of Metso is both global and Local

As a member of the multinational Finnish group, Metso we are represented all over the world. With more than 150 locations our service teams are available at short notice, even in the most remote corners of the world.

Metso Recycling Equipment

Our range:

Pre-Shredders
Shredders
Shredder Plants
Metal Crushers

Scrap Shears
Turnings Crushers
Briquetting Presses
Double Screw Presses
Anode Crushers

Screen Drums
Scrap Baling Presses
Waste Fine Shredders
Waste Pre Shredders

Metso Recycling Services

Uptime Services

Inspection Services
Parts Services
Repair and Refurbishment
Troubleshooting Services

Performance Services

Process Monitoring Services
Optimization Services
Upgrade Services
Training Services

Project and Engineering Services

Start-up Services
Health, Safety and Environmental Services
Engineering Services
Plant Relocation Services

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We reserve the right to make changes and improvements without notice, „Lindemann Power@Cut“, Metso Recycling, June 2012