

TAURUS SHEAR BALER

MODEL ARS117



C. E. G. srl



BLULINE



REDLINE



BLACKLINE

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1 OVERVIEW

ARS “RAPID” shears balers are powerful and fast with best in class performance. All versions have an 7.2 meter squeeze box, with 3 cylinders per wing, capable of supplying 450 tons of compression force. The ARS 117 has 1100 metric tons of shear force.

ARS shears incorporate a heavy structure (HS); **no foundations are needed**, as all ARS series shears are come with a 650mm high solid steel supporting frame. The frame consists of two connected segments, one supports the shear head and squeeze box , while also providing protection for the hydraulic pipe work thanks to its inverted H shaped beams. The oil tank, power pack and all key hydraulic components (like main pumps, valves, distribution manifolds etc.) rest on the second frame segment: all of these components are then protected by a modular, sturdy platform—which is fixed on top of the frame and also acts as the base for the operator’s cabin.

Thick steel plate protection is also provided for all critical parts (wing cylinders, shear head, etc.) as well as for the main compression cylinder, which is protected by an ingenious covered “railcar” like device which moves in sync with the main compression cylinder.

ARS shears are designed from the ground up as **Heavy Duty (HD) machines**, that guarantee a high output of all kinds of HMS scrap, such as:

- **Demolition- pipes- I-beams- billets- rebar**
- **railway sleepers- structural- plates including skeleton plates & ELV scrap vehicles.**

All ARS model shears include as standard:

Laser control to set cutting length

Laser integrated sensors to optimize the control of the shear and clamp positioning

Shearing cycle economizer

Working cycle economizer

Touch-screen control panel

Original screw lock tensioner to eliminate blade swing.

ARS shears incorporate the TAURUS flagship “twin swinging wing system” with over stroke.



2 DESCRIPTION OF THE "TAURUS" SHEAR-BALER

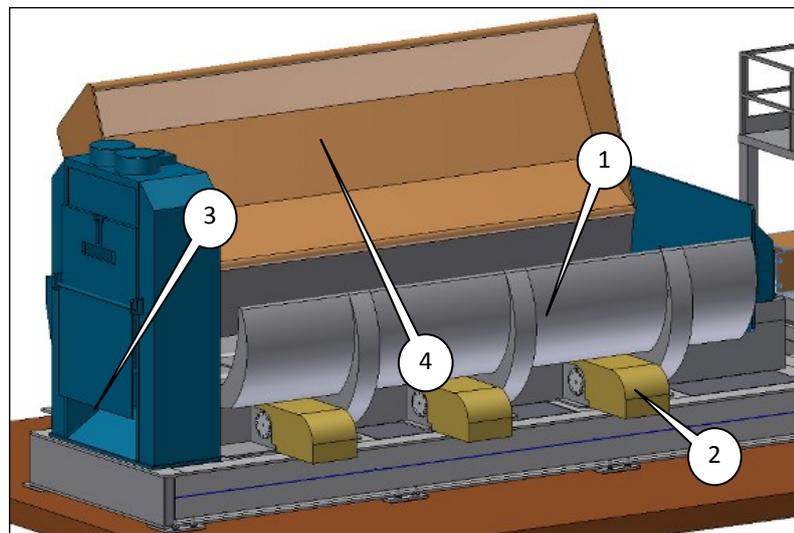
OPERATING CYCLE

Loading

The pre-compression and feed box with swinging wings (1) driven by the internal crossed cylinders (2) allows the rapid compression of ferrous and non-ferrous scraps, heterogeneous and also cumbersome scrap, reducing it to dimensions such to pass through the mouth of the shears (3).

Due to the way it has been designed, the structure of the box allows scrap to be loaded from both sides.

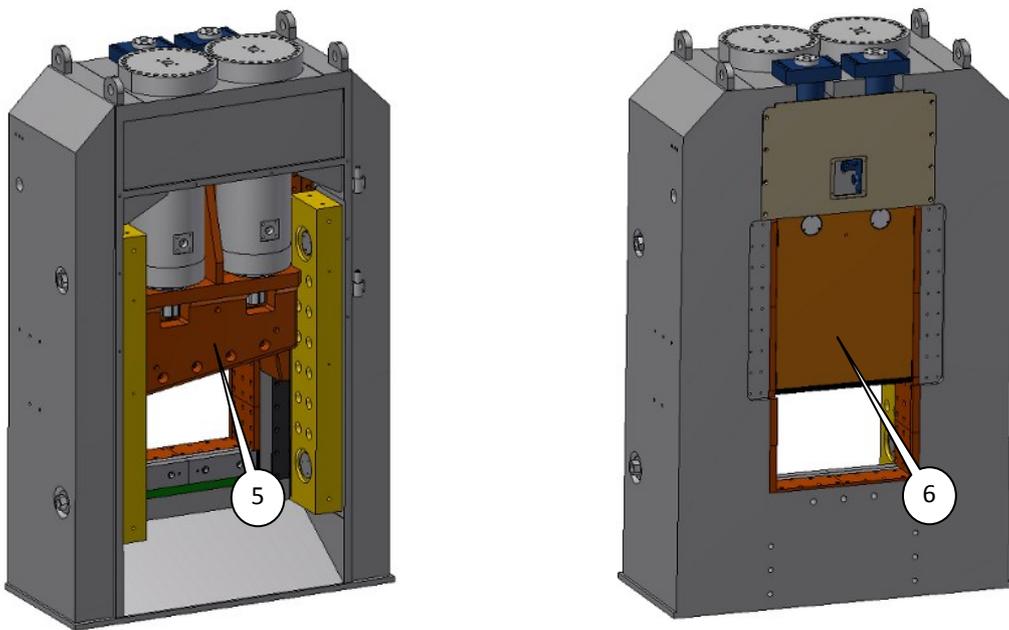
On request, a loading hopper positioned laterally to the box (4) can be supplied decreasing loading times and increasing production rate of the shear-baler.



Operating cycle

When the first compression has been performed, which reduces the scrap to a log, with wings closed, the feed piston intervenes which, as well as making the scrap pack advance by the pre-determined length, further compresses the material longitudinally, thus increasing its density. Therefore the material, pushed by the feed cylinder, is positioned under the shear knives to be cut. (5) The clamp positioned in front of the blades further compresses vertically the material to be cut before being sheared. (6)

Furthermore, the presence of the clamp allows the reduction of the mobile knife work stroke and therefore the acceleration of the cutting times with consequent saving of energy and increase of production.



Automatic a repetitive cycle (with or without the intervention of the clamp).

By pressing the “AUTOMATIC” button: the feed cylinder pushes the material already pre-compressed, under the shears by the pre-determined length.

When requested, the vertical clamp descends, then the guillotine makes its cut, after which the clamp and the mobile blade-holder return to the start position and the cycle resumes automatically.

The machine is equipped with EPS device: External Position System. A particular device that optimizes the operation cycle of the shear determining the stroke of the mobile blade-holder at each cycle according to the height of the material to be cut; this is all automatic and without operator intervention.

A particular program is envisioned to eliminate the idle shearing cycles, through which the automatic shearing cycle starts only when the scrap is underneath the shears.

Manual

All machine’s operations can be done step by step in manual mode.



3 SHEAR HEAD

Cutting force:

TAURUS BluLine ARS 117: 1,100 metric tons

The shear head is operated hydraulically by 2 cylinders.

The benefits of the twin cylinder configuration are:

- to minimize the sliding friction between the blade holder and guides which reduces wear and tare
- to better balance the movable blade during the shearing operation
- 2 smaller cylinders are easier to service than one large one

Eccentric pins are used to adjust the clearance between the slides and blades, to maintain the right position during time.

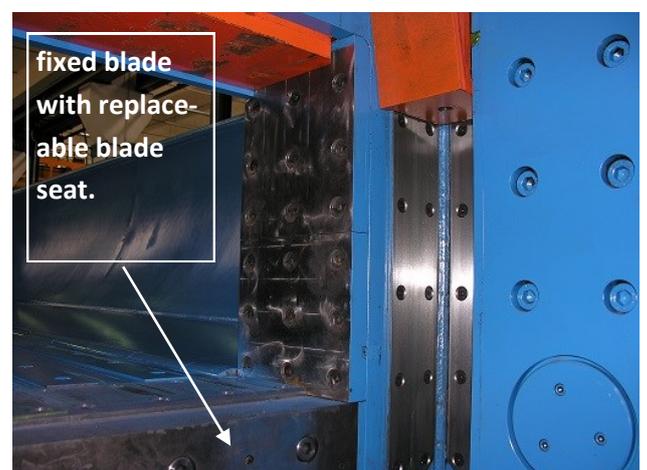
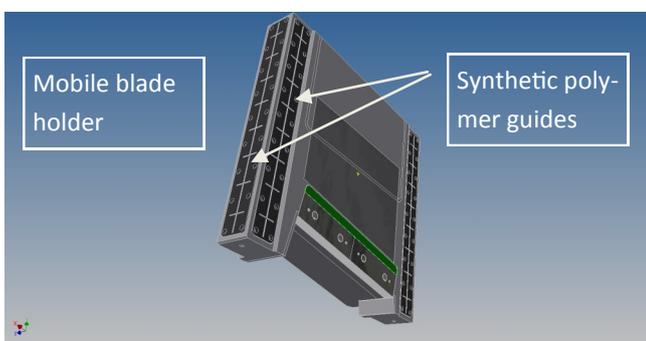
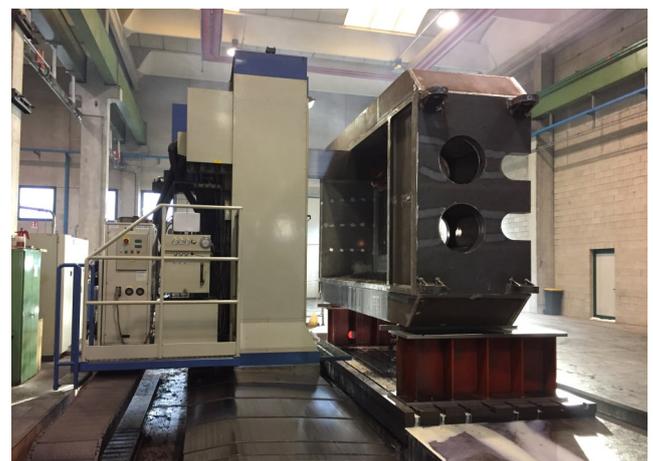
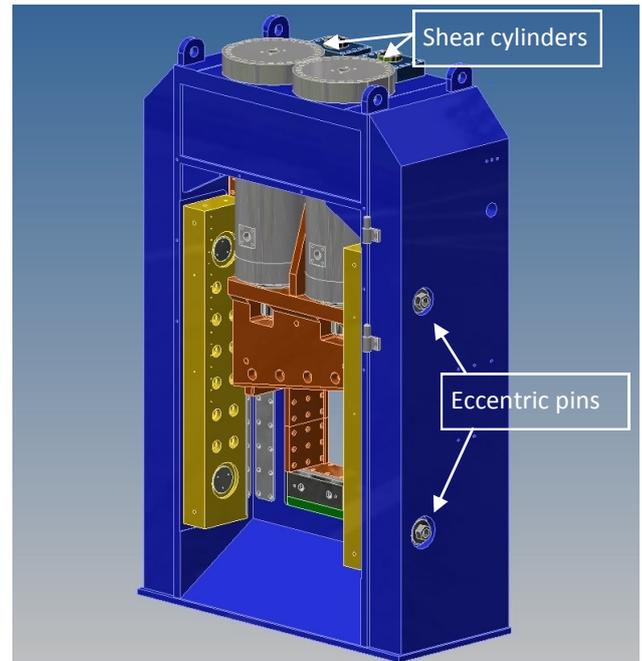
interchangeable bolted on guides can easily be replaced when worn to avoid expensive reconditioning shear head walls.

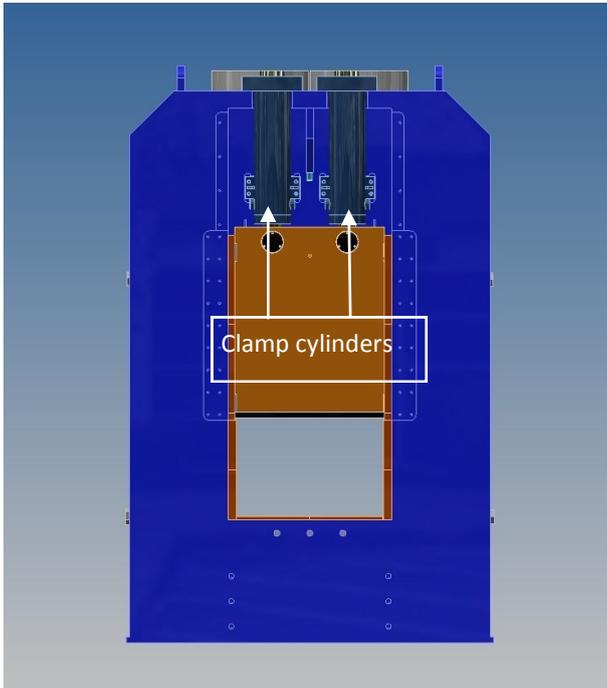
Wear plates made of 40mm thick Hardox steel to protect the parts subject to wear

Mobile blade holder guides made from hardened steel and a **synthetic polymer** which embeds foreign bodies in the polymer to avoid damage to the guides.

The front surface of the mobile blade holder is also protected with a Hardox wear plate.

Fixed blade with replaceable blade seat to preserve tight clearances between the fixed and movable blades, even after many years of operation.

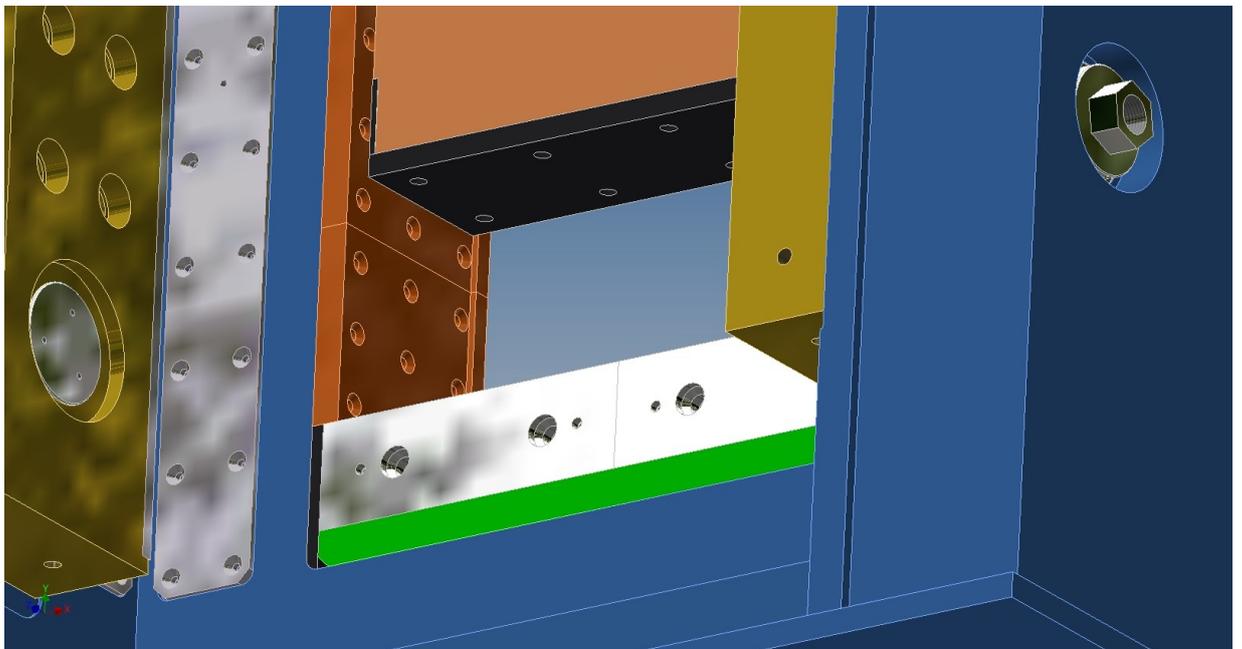
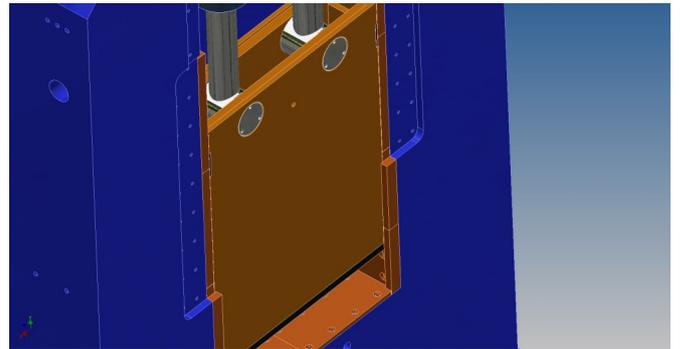




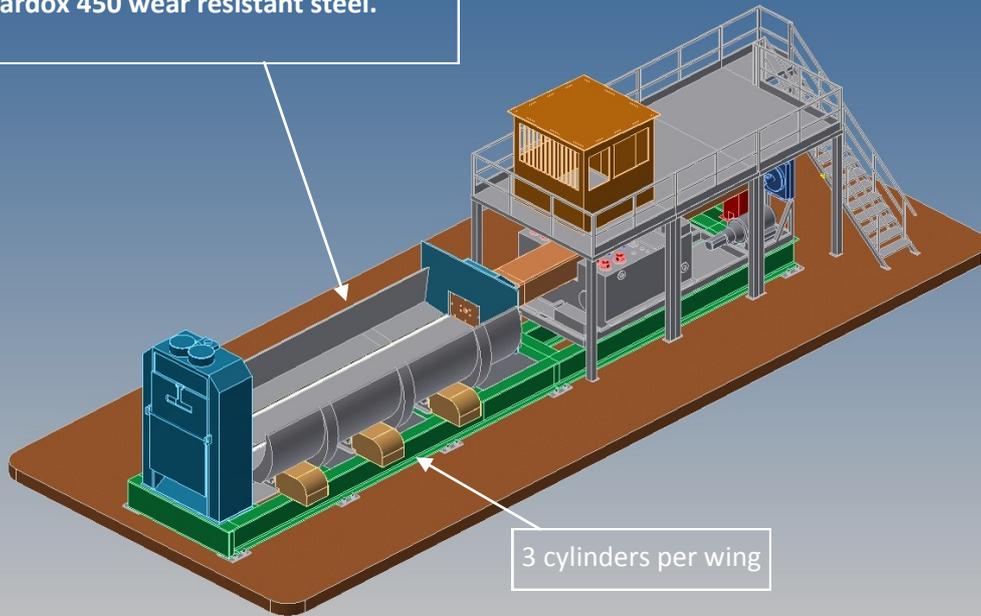
n. 2 clamp cylinders with a vertical compression force of 280 metric tons

- For a more even distribution of the clamp force
- Less wear on the clamp slides
- To achieve higher scrap density

Bolt on clamp slides can be replaced when worn, which avoids reconditioning of the clamp seats



The squeeze box: **2 swinging wings** comprised of 40 mm thick **Hardox 450 wear resistant steel**.



4 SQUEEZE BOX

Length: 7.2 meters

Width: 2.8 meters

Bale dimension: 1,000 mm x 700 mm

Lateral compression: 450 metric tons (each wing)

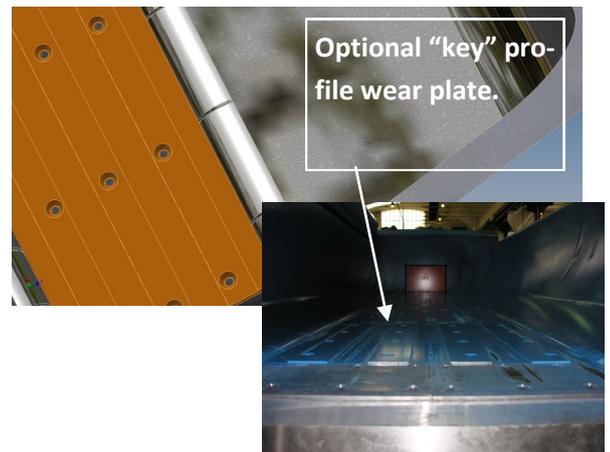
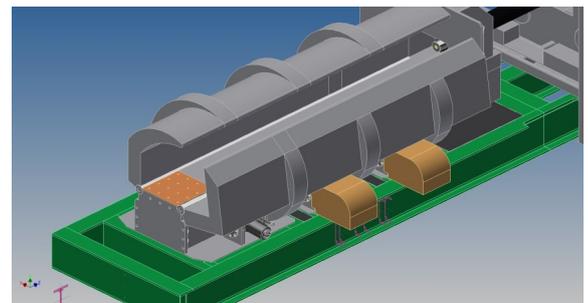
The squeeze box is equipped with **2 swinging wings** utilizing **3 hydraulic cylinders** per wing.

The **internal and external surfaces** are made of highly wear resistant **Hardox 450 steel** with a **thickness of 40 mm**.

An additional Hardox wear plate with a special “Key” profile can be fitted to the squeeze box floor. The key profile prevents jamming of the main ram from wires and/or rebar. The plates are screwed in place, not welded which allows for easy replacement when worn.

The structural components are welded using a submerged arc technique, which, when combined with the **internal honeycomb structure** of the wings assures high elasticity, maximum torsional rigidity and maximum resistance to eccentric forces generated during compacting.

Hinges are hard-faced and use **anti-wear protective coatings**.



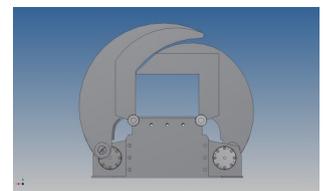
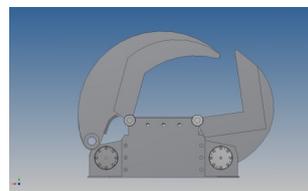
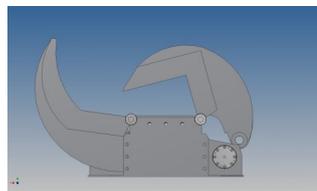
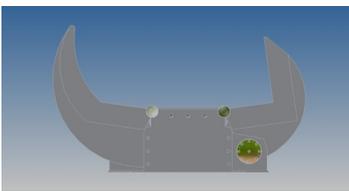
TAURUS BluLine swinging wing system

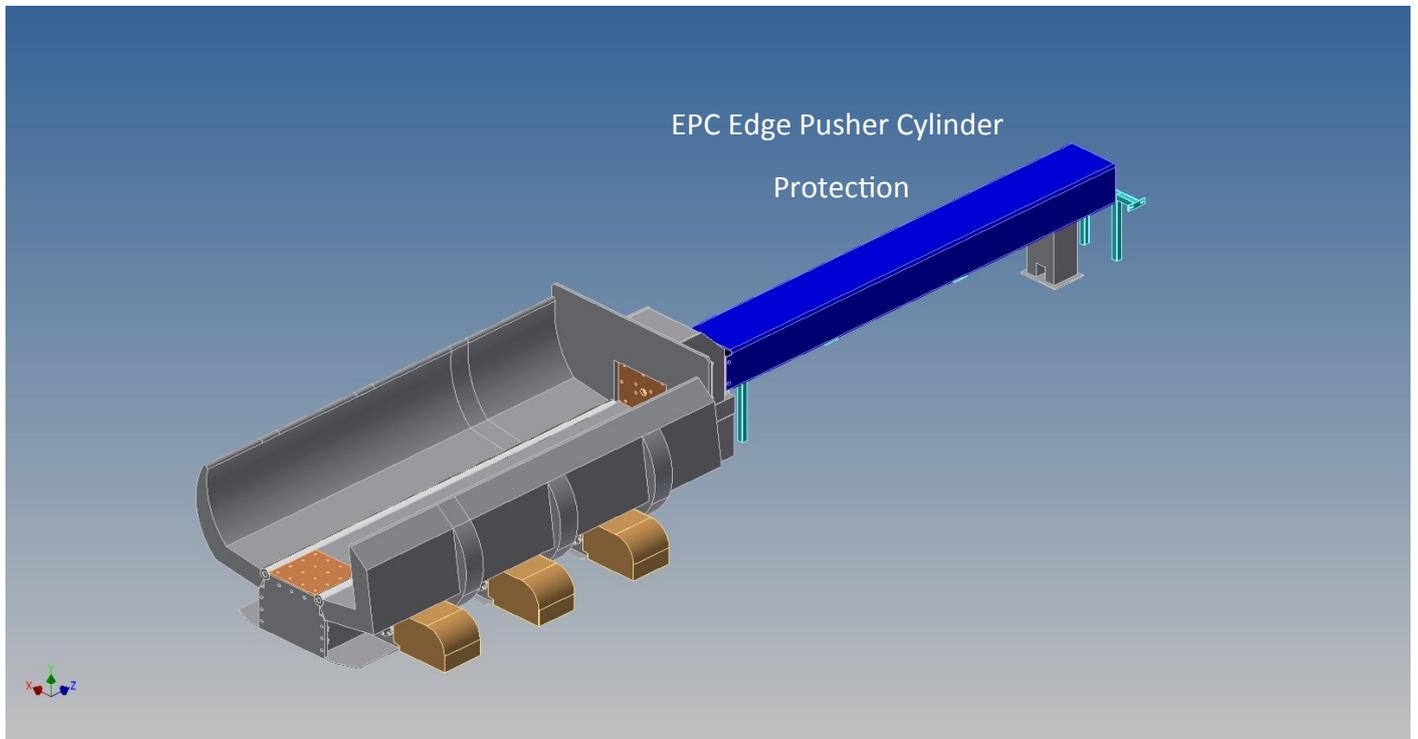
Both wings are equipped with an over stroke function (patent pending).

The new lever geometry in combination with the optimization of cylinders' position allow an **over stroke** on both compression wings.

The precise positioning of each wing is monitored by a toggle device, with a rotary encoder.

The combination of these features reduces scrap preparation time, increases scrap density and reduces internal wear.



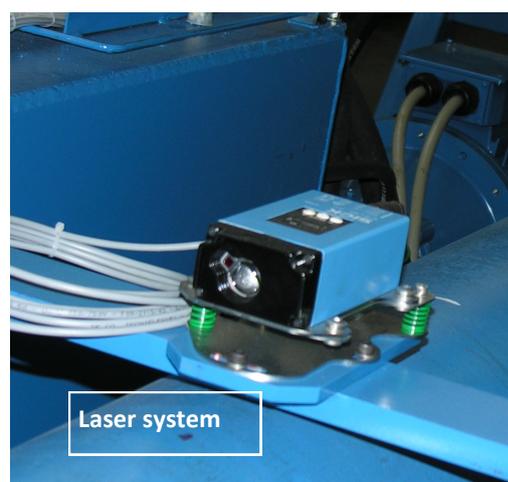


5 MAIN COMPRESSION

Longitudinal compression force: 150 metric tons

A **laser** is used to measure the precise position of the main ram which enables the precise setting of individual **cutting lengths**.

The main ram hydraulic cylinder is protected from damage by the **Edged Cover**.



6 HYDRAULIC UNIT

Hydraulic oil tank capacity: 3,500 l.

n. 4 **Linde piston pumps**

n. 2 distribution manifolds

n. 5 **Duplomatic valves**

n. 2 valves to manage shear and pusher high speed full return

Oil filtering system:

- Outflow: independent system filters to 10 microns

- Inflow: independent system filters to 25 microns

- air filters



7 POWER PACK

n. 2 **main electric motors x 160 kw each**

n. 2 electric fans for oil cooling. x 1,1 kw each

Soft starter



8 AUTOMATIC GREASE SYSTEM

The system automatically provides grease on shear's head motion components through distribution pipes .

Grease tank is positioned in the rear part of the machine.



9 ELECTRONIC CONTROL UNIT

PLC (Programmable Logic Controller) a dedicate, well thought out software manages all shear functions.

The individual operating programs can be activated either by an on board touch screen, a control unit installed in the operators cabin or, if requested, by remote control.

Individual fully automatic operational programs can be selected depending the type of scrap to be processed and the desired output requirements.

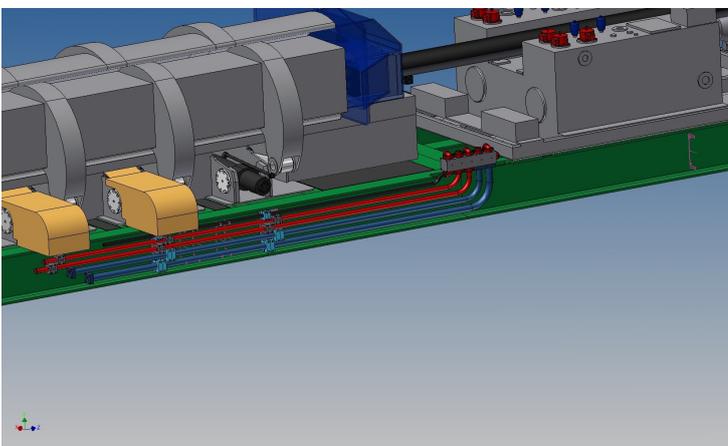
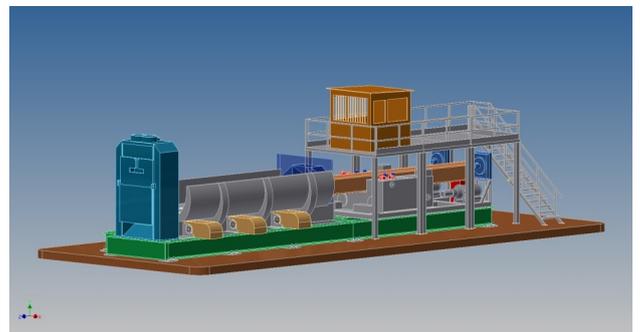
In manual mode, complete control is given to the operator, full stroke, partial stroke or baling mode can be set.



10 STEEL WORK PLATFORM

ARS models - like all Taurus BluLine static shears balers - are mounted on their own solid steel frame. The benefits of this are:

- **No foundations required**
A flat concrete surface is all that is needed
- Quicker assembly on site
- Vibration absorption
- Protection of the hydraulic pipes



11 OPERATOR CABIN

The operator cabin is mounted on the modular steel platform which includes safety railings and access stairs, all built to respect strict safety standards.

The platform also protects the hydraulic unit and the electric engines from falling scrap damage s.

On request, sound proof panels can be installed at side of the platform to reduce noise emissions.

Cabin dimensions: 2.000 mm x 2.000 mm

n. 4 platforms: 2.400 mm x 4.500 mm each



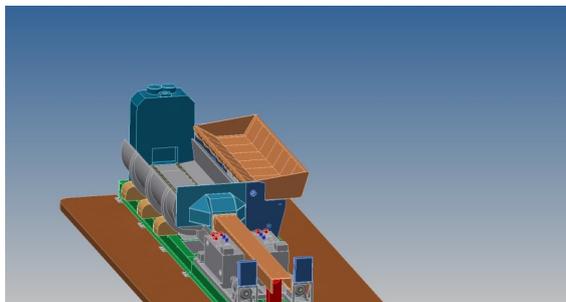
12 LOADING HOPPER

Loading hoppers are used to reduce cycle times. When a shear is processing a load of scrap, the hopper is filled with new scrap which is then transferred to the main compression box as soon as the last cycle has been completed.

The hopper is made of 16 mm thick, wear resistant Hardox 450 steel.

N. 2 lifting cylinders

Box length: mm 7.100



13 REMOTE CONTROL

The remote control unit comes with 22 channels to manage all of the shears functions and can also pre set the scraps cutting length.

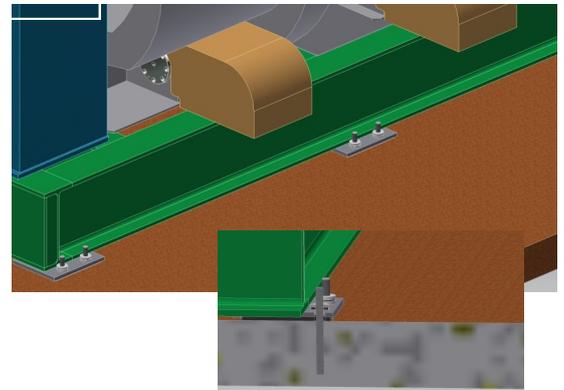


14 OPTIONS

a- VDP (Vibration Dampening Plates)

As long as ARS models are placed on a firm level concrete base, the shears can be equipped with vibration damping plates to isolate vibrations caused by dynamic forces acting on the surface.

The VDP's have been specifically developed by CEG for use with large scrap shears.



b- CAM + LASER

A curtain laser and /or video camera will quickly alert the operator to any material which falls behind the pusher cylinder.

These options help prevent damage or jamming from scrap which may fall behind the pusher cylinder.



15 SIZE CHART

Shear head height: 5.3M (steel work platform included)

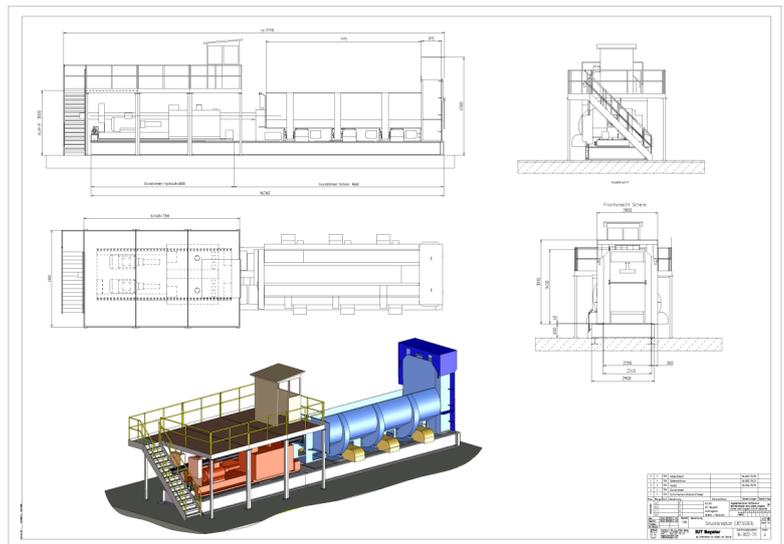
Width: 6.2M (loading hopper included)

Length: 17,5M (platform and stairs included)

Loading height: 2.7M

	ARS 117
Weight tons*	180

* with loading hopper



16 PRODUCTIVITY

Cutting capacity

	ARS 117
Square mm	170
Round mm	190
Flat mm	110 x 1.000

Average output* (mild steel)

Up to 40 tons / h for ARS 117

(*) Production capacity has been calculated using lengths of steel of between 600 and 800 mm and it also depends on the type and quantity of scrap being processed.

