



**Cutting Technologies**  
*Catalogue 2015*



bend and cut





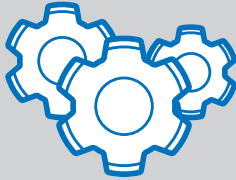
bend and cut

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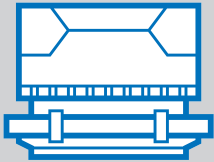
# Gasparini Industries



Over **40 years** of excellence in bending and cutting processes.



More than **8.000 machines** installed worldwide.



Two product platforms: **press brakes and guillotine shears.**

### Precision, reliability, performance.

X-Cut shears are at the top of the market thanks to the exclusive Blade Pads system which guarantees the **best** cutting quality.

**Technical skills and design approach** resulting in **innovative solutions for high performance machines.**

### Listening, communication and cooperation. A full service provider.

Our *TechCenter*, staffed with a highly specialized team of experts with a high degree of know-how in continuous evolution, is our strong point.

Discussions with our customers about their project, paying particular attention to the analysis of their needs, is the only way to achieve technological solutions that better meet their requirements. We provide a full service: before, during and after the purchase. This is indeed our responsibility, since our sole aim is to supply the customer with real solutions.





### Tailor made solutions.

Thanks to a wide range of models and accessories we are able to produce a machine that better suits the customer's requirements.

High end machines that provide a perfect cut on any lengths, up to the highest thickness.

On request we can quote complete shearing lines equipped with front feeder, stacking device, conveying and automation systems.



# X-CUT







**Ref. 01**

The best cutting quality worldwide: the exclusive *Blade Pads* system guarantees cutting linearity and accuracy under any conditions.

**Ref. 02**

*Delem DAC 360 CNC* Delem DAC 360 CNC with material data base stored in the control.

**Ref. 03**

*Stand By* function (option).

**Ref. 04**

Long lasting lower blades with four cutting edges, also suitable to cut stainless steel.

**Ref. 05**

No torsion of the sheet plate thanks to the *Anti-Torsion* device (option)

**Ref. 06**

Front supports with balls, reference stop and rule.

**Ref. 07**

Manual strip feeders.

**Ref. 08**

Front box for scraps and small pieces (option).

**Ref. 09**

Independent hydraulic hold-downs as standard on all machines.

**Ref. 10**

Back gauge: hardened and ground with rack and pinion drive.

**Ref. 11**

Milled monolithic bench with milled slots to facilitate the support movement.

**Ref. 12**

*LED* illumination of the working area.

**Ref. 13**

New hydraulic circuit developed by *Gasparini*

**Ref. 14**

New design: unique, technological, Italian  
The same "look and feel" for all the product families.

# “What effects are occurring during the shearing process?”

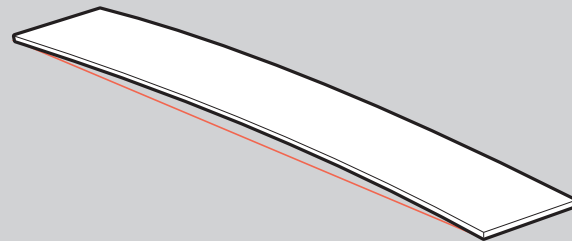
*“The most common effects are: the torsion effect, and the straightness defect.”*

A high quality machine shall be equipped in such a way to reduce as much as possible the effects arising during the shearing process.

Such effects occurring during the shearing process – if not adequately compensated – will negatively affect the final quality of the sheared material.

## Straightness error

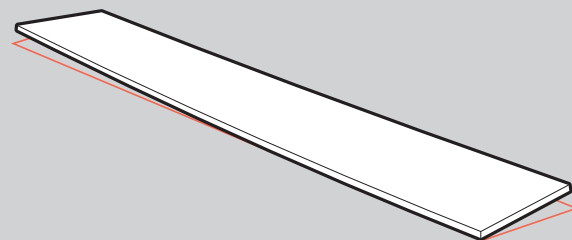
This error results in a work piece bowed along its plane (the surface remains flat) at the end of the cut action. It is related to the strip width, thickness, material strength and previous cold rolling direction /residual stresses). To reduce this effect it is recommended to use a smaller cutting angle and to do precuts (trims) along the rolling direction.



## Torsion effect

This effect results in a sheet metal twisted along its axis at the end of cut action.

This effect typically happens when shearing narrow strips. Shearing conditions that enhance this effect are related to the sheet metal geometry, material features and, of course, the cutting parameters.



# BLADE PADS, a precision system

## *For an accurate and straight cut*

### Feature

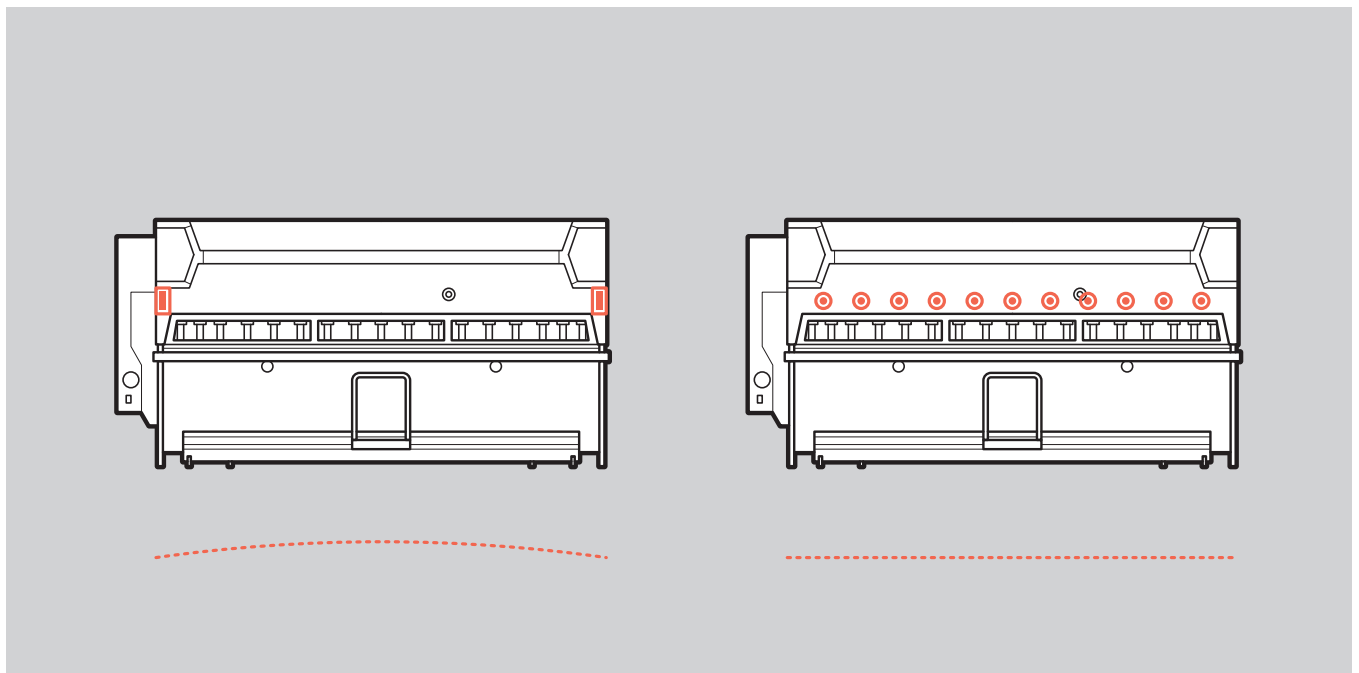
Different from traditional shears which are typically equipped with two lateral blade guides, X-Cut shears are fitted with a series of adjustable pads that force accurate blade straightness every 200 mm throughout the entire length.

### Function

The *Blade Pads* system guarantees cutting linearity and accuracy under all conditions, to achieve the best cutting quality worldwide. A precise and smooth movement contributes to the cutting linearity and accuracy.

- The absence of the lateral blade sliding guides, avoids stresses, wear and maintenance of such components.
- Elimination of the wear of the constraints between cylinders and blade ram.
- Thanks to the balanced load, a periodic recovery of the clearance is not needed, resulting in reduced maintenance operations compared to a shear fitted with traditional lateral blade sliding guides.
- The solution allows the back gauge to be anchored to the shear structure.

- ▮ Lateral blade sliding guides (competitor's method): this method produces a bowed cut
- Blade Pads (Gasparini's solution): produces a straight cut



# “Can we control the material torsion effect?”

*“Yes, stabilizing the work-piece to the backside.”*

During the cutting process the material tends to twist; therefore it is recommended to support the plate against the top blade. This contrasting action avoids the torsion effects depending on the material geometry and features as well as the cutting parameters.

## ANTI TORSION DEVICE

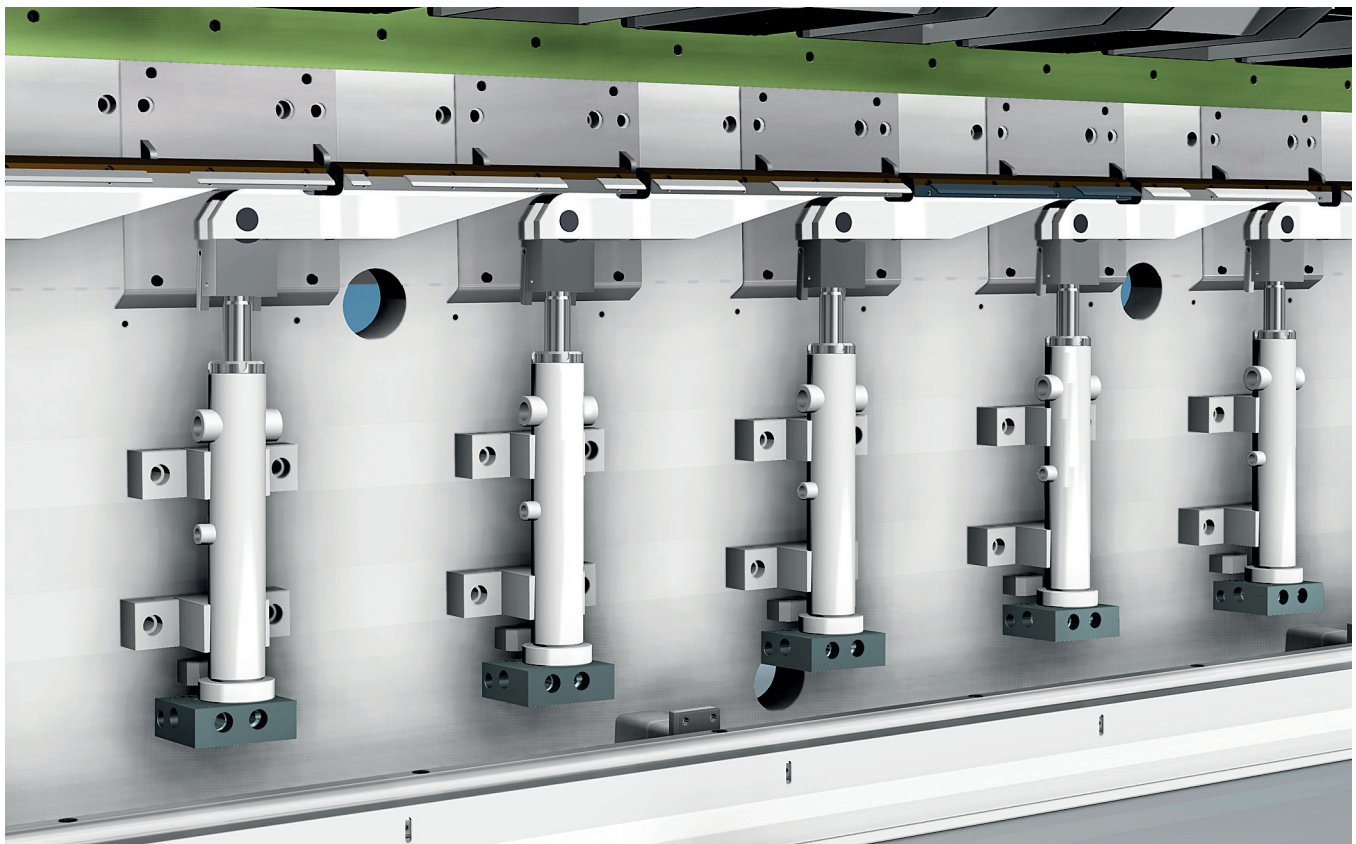
*No sheet metal twist with the Anti Torsion Device*

### Features

The exclusive *Anti Torsion Device* consists of a series of hydraulic cylinders fitted below the lower blade which support the plate against the top blade.

### Function

This device ensures a contrasting action that is carried out during the cutting phase. The cylinders perform a counter-pressure proportional to the cutting thickness, thus compensating the material torsion effect.





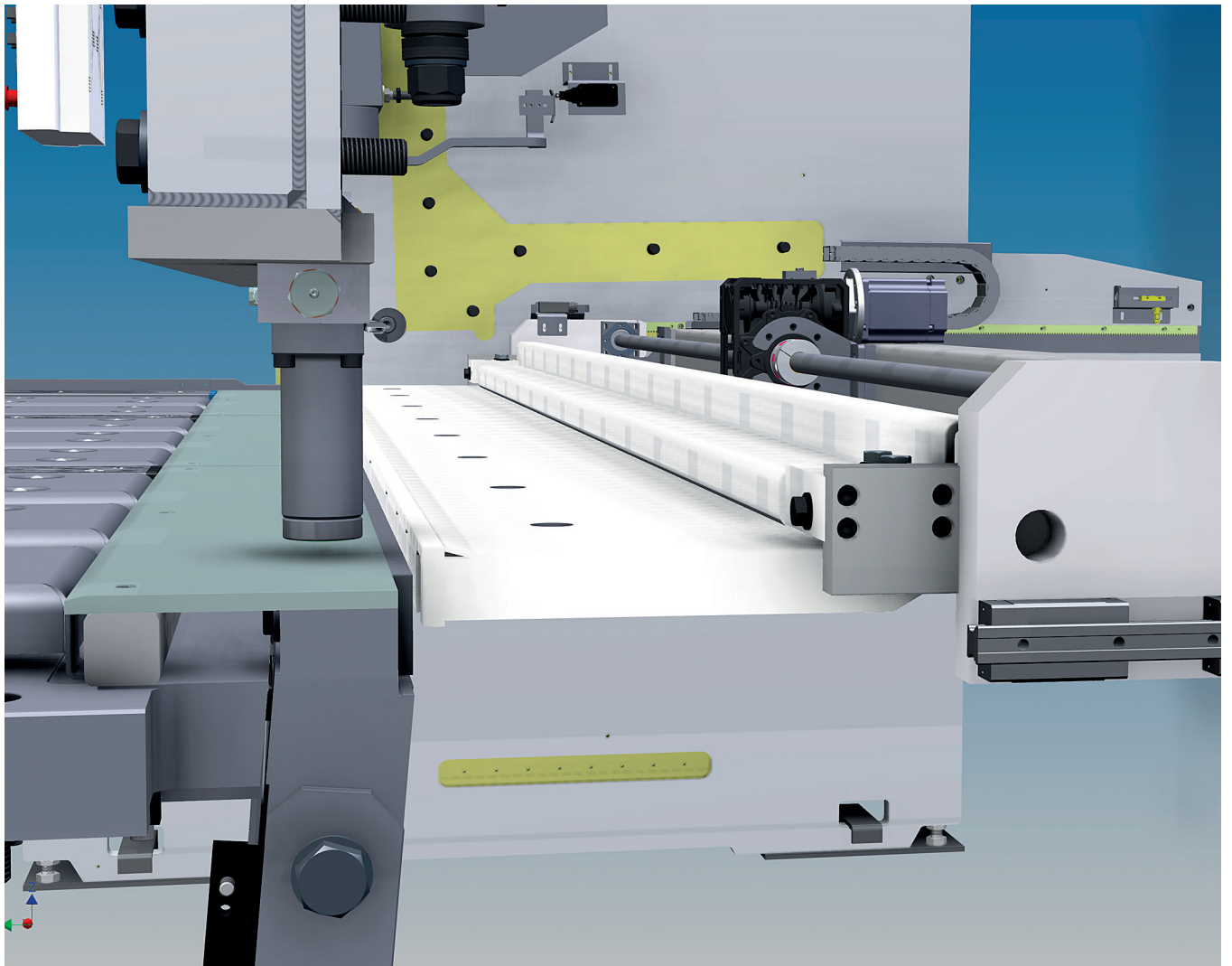
# “How do we achieve such a precision?”

*“Thanks to the back gauge which is anchored to the shear structure. It is not subject to the vibrations caused by the blade ram movement.”*

Since the back gauge is anchored to the shear structure, it is not affected by the vibrations caused by the blade ram movement.

Thanks to this solution, the back gauge moves very rapidly (500mm/s) and accurately ( $\pm 0,05$  mm). Furthermore it guarantees a high repeatability ( $\pm 0,03$  mm).

Maintenance operations are reduced to a minimum, thanks to the elimination of the continuous adjustments caused by the movement of the blade ram, thus guaranteeing over time, the same original precision levels.









# Delem DAC-360

## CNC Software

### Delem DAC-360 Control

Gasparini Industries' shears are equipped as a standard with the best CNC available on the market. The CNC is equipped with a wide selection of functions allowing total control of the shearing process, with the possibility to adjust all the cutting parameters.

### Advantages

- Material database stored in the CNC with sheet plate thicknesses, mechanical features and relevant cutting parameters
- Cutting angle adjustment
- Blade gap adjustment
- Possibility to select the work piece length and the ability to control the cutting length, thus reducing the cycle time.
- Program memory up to 100 cutting programs



Gasparini Industries srl - Catalogue 2015  
This issue has been printed in July 2015.

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**Gasparini Industries s.r.l.**

Via F. Filzi, 33  
31036 - Istrana (Treviso - TV)  
Italia - Italy

t (+39) 0422 8355  
f (+39) 0422 835600  
e [info@gasparini.it](mailto:info@gasparini.it)