Cutting Technologies
Catalogue 2015

GASPARINI
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.

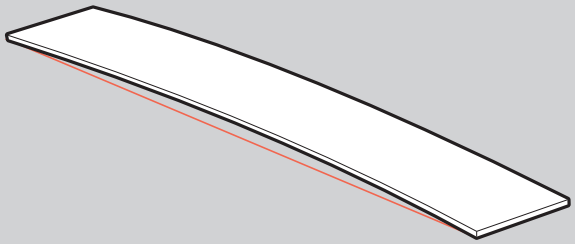
“What effects are occurring during the shearing process?”

“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.

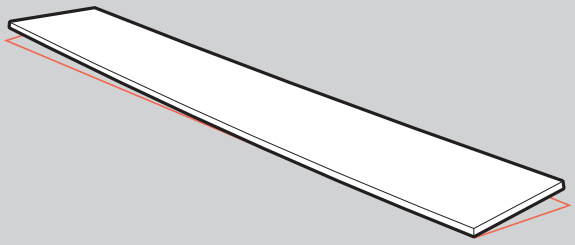
Straightness error

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

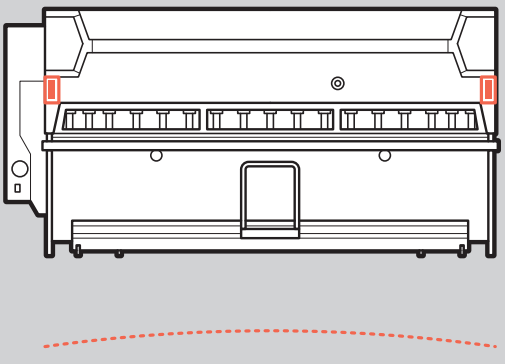
Different from traditional shears which are typically equipped with two lateral blade guides, X-Cut shears are fitted with a series of adjustable pads that force accurate blade straightness every 200 mm throughout the entire length.

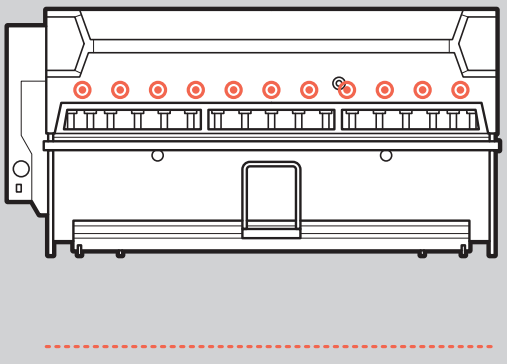
Function

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

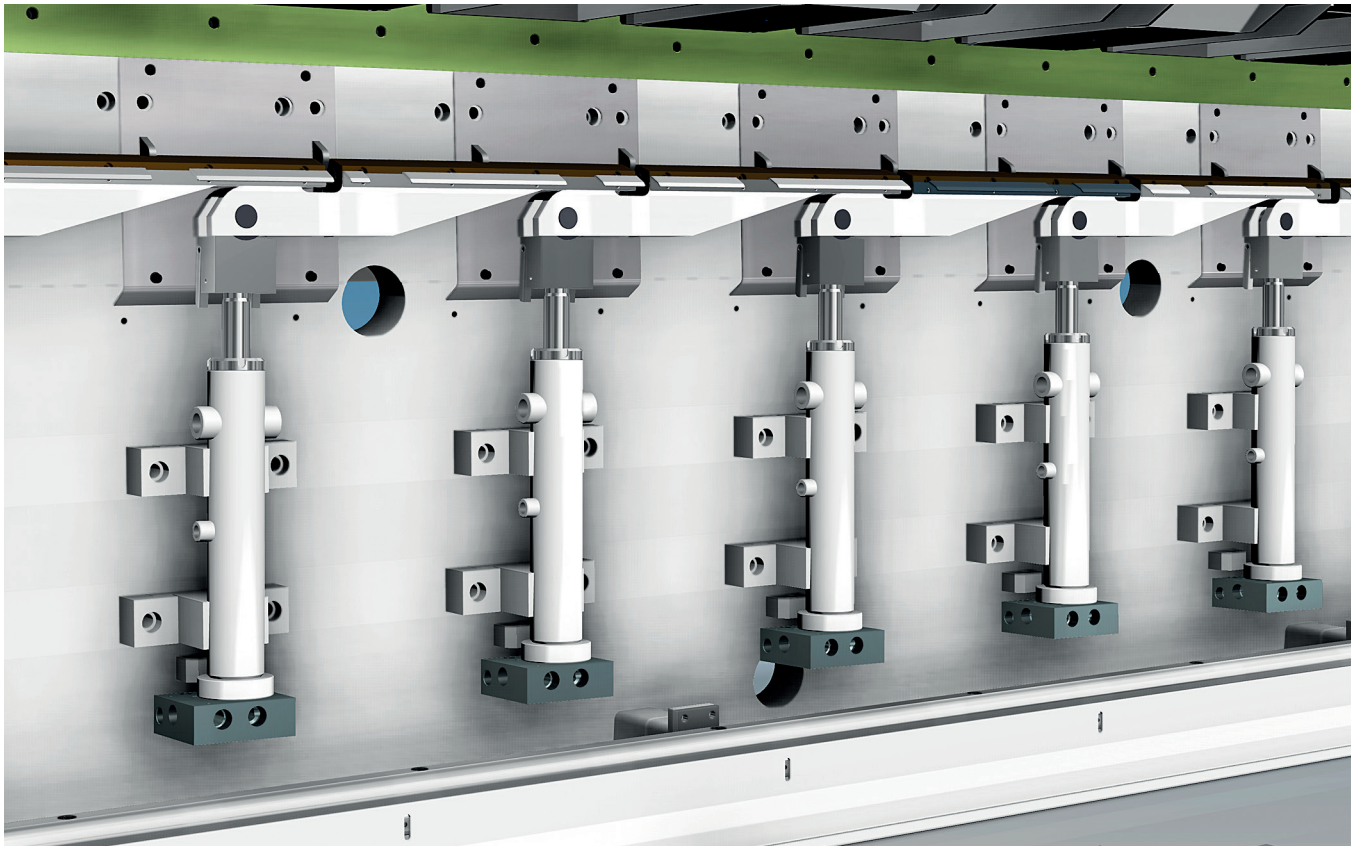
No sheet metal twist with the Anti Torsion Device

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

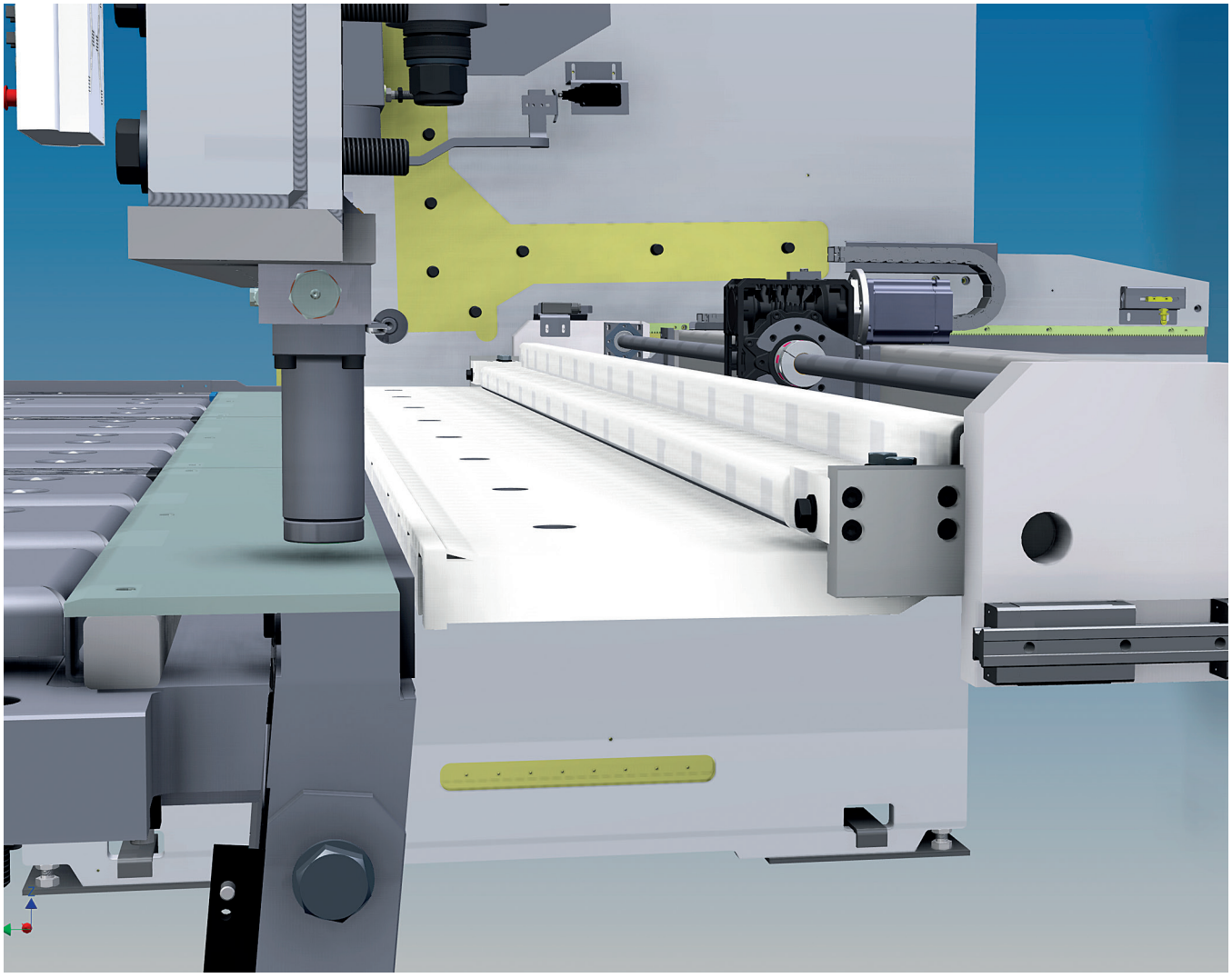
This device ensures a contrasting action that is carried out during the cutting phase. The cylinders perform a counter-pressure proportional to the cutting thickness, thus compensating the material torsion effect.



“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 (± 0,05 mm). Furthermore it guarantees a high repeatability (±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.




CASPARINI

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

Cutting capacity

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Maximum thickness for S275 mild steel	4	4	4	4	6	6	6	6	10	10	10	10	12,5	12,5	12,5	mm
Maximum thickness for AISI304 stainless steel	3	3	3	3	4	4	4	4	7	7	7	7	8	8	8	mm
Nominal cutting length	2000	3000	4000	6000	2000	3000	4000	6000	2000	3000	4000	6000	3000	4000	6000	mm
Maximum cutting length	2050	3050	4100	6100	2050	3050	4100	6100	2050	3050	4100	6100	3050	4100	6100	mm
Minimum remaining strip	45	45	45	45	50	50	50	50	60	60	60	60	70	70	70	mm
Y stroke	100	150	200	230	100	150	200	N/A	160	160	210	N/A	160	210	N/A	mm

Performance

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Strokes per min (w/o cutting)	24÷42	18÷37	14÷33	10÷22	17÷35	12÷30	10÷26	8÷23	14÷26	11÷22	8÷20	6÷17	9÷21	7÷16	5÷13	n°
Strokes per min with high speed package (w/o cutting)	28÷46	22÷42	18÷38	N/A	21÷40	15÷35	12÷30	N/A	N/A	13÷27	10÷24	7÷21	12÷24	N/A	N/A	n°
Cutting angle span	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	0,5÷2,5	°

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Blades

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Height x length	50x12	50x12	50x12	50x12	60x12	60x12	60x12	60x12	80x20	80x20	80x20	80x20	80x20	80x20	80x20	mm
Total length	2100	3100	4200	6200	2100	3100	4200	6200	2100	3100	4200	6200	3100	4200	6200	mm
Upper blade segments	1x2100	2x1550	2x2100	4x1550	1x2100	2x1550	2x2100	4x1550	1x2100	2x1550	2x2100	4x1550	2x1550	2x2100	4x1550	mm
Lower blade segments	1x2100	2x1550	2x2100	4x1550	1x2100	2x1550	2x2100	4x1550	1x2100	2x1550	2x2100	4x1550	2x1550	2x2100	4x1550	mm

Blank holders

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Quantity	12	17	22	32	12	17	22	32	12	16	22	32	16	22	32	n°
Clearance between holder and bench	13	13	13	13	14	14	14	14	19	19	19	19	25	25	25	mm
Diameter contacting the sheet	49	49	49	49	49	49	49	49	49	49	49	49	56	56	56	mm
Interior diameter	25	25	25	25	25	25	25	25	30	30	30	30	35	35	35	mm

Electrical and pneumatic connections

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Main motor power	7,5	7,5	7,5	11	11	11	11	15	18,5	18,5	18,5	30	22	22	30	kW
Main motor power with high speed package	11	11	11	N/A	15	15	15	N/A	22	22	22	N/A	N/A	N/A	N/A	kW
Compressed air pressure	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	6÷8	bar
Pneumatic connection	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	3/8"	inches

Dimensions and generic data

Model	2004	3004	4004	6004	2006	3006	4006	6006	2010	3010	4010	6010	3012	4012	6012	unity
Height	1900	1900	2050	2500	2300	1900	2050	2700	2050	2050	2200	2850	2150	2300	2700	mm
Width	2700	3700	4700	6700	2700	3700	4700	6700	2850	3850	4850	6700	3850	4850	6850	mm
Depth	3650	3650	3650	3900	3650	3650	3650	3900	4200	4200	4200	4200	4300	4300	4400	mm
Workbench height	900	900	900	1050	900	900	900	1050	950	950	950	1100	950	950	1100	mm
Workbench height with Anti-torsion	950	950	950	1100	950	950	950	1100	1000	1000	1000	1100	1000	1000	1100	mm
Weight	4,5	6	9	18,5	6,5	8	11,5	20	N/A	12	18	30	14	19	37	t
Oil tank capacity	110	110	110	140	110	110	110	140	170	170	170	210	210	400	400	l
Oil tank capacity with high-speed package	140	140	140	N/A	140	140	140	N/A	210	210	210	N/A	270	N/A	N/A	l