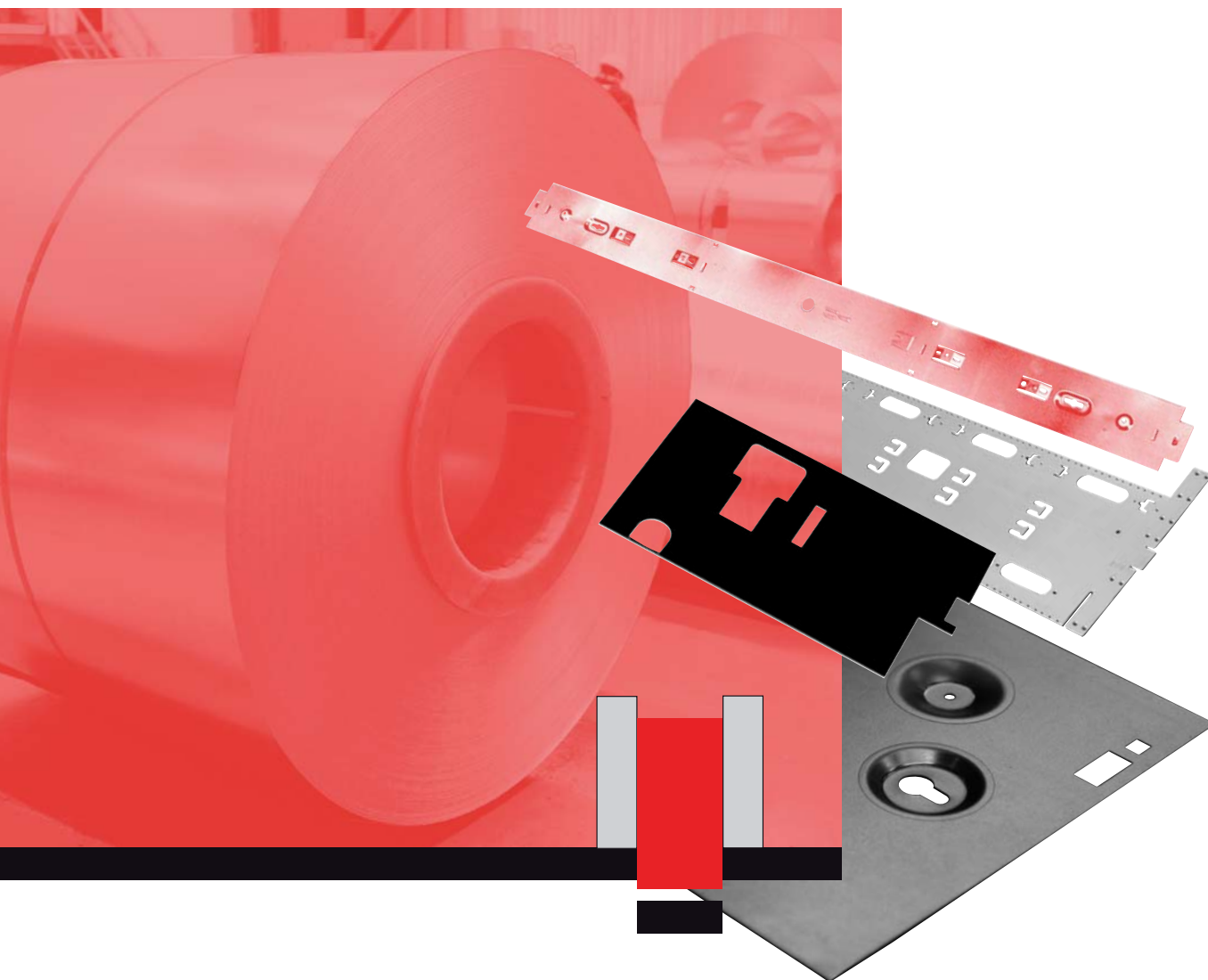


# COIL-FED **PUNCHING** SOLUTIONS

FLEXIBLE PUNCHING SOLUTIONS FROM COILS



[www.dimeco.com](http://www.dimeco.com)

EN-08.19

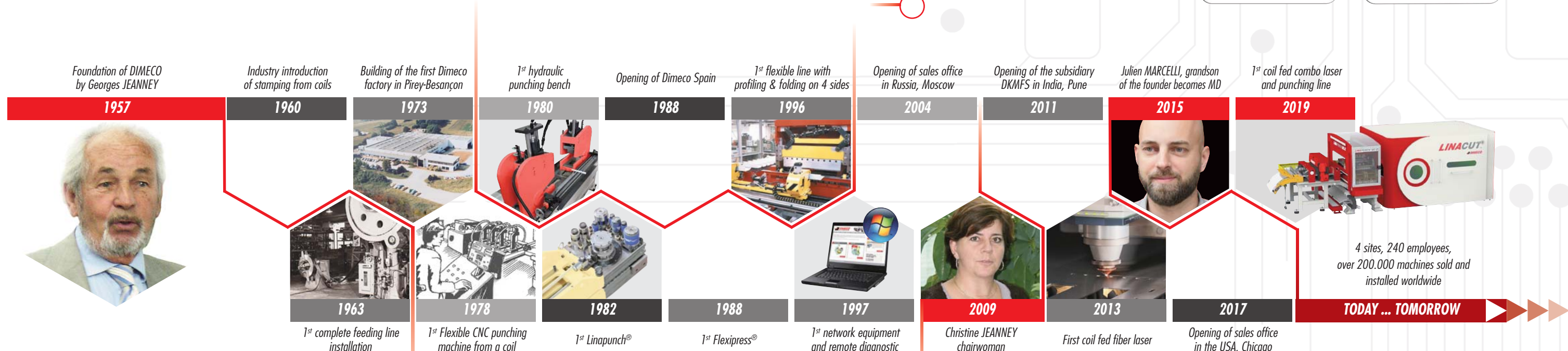
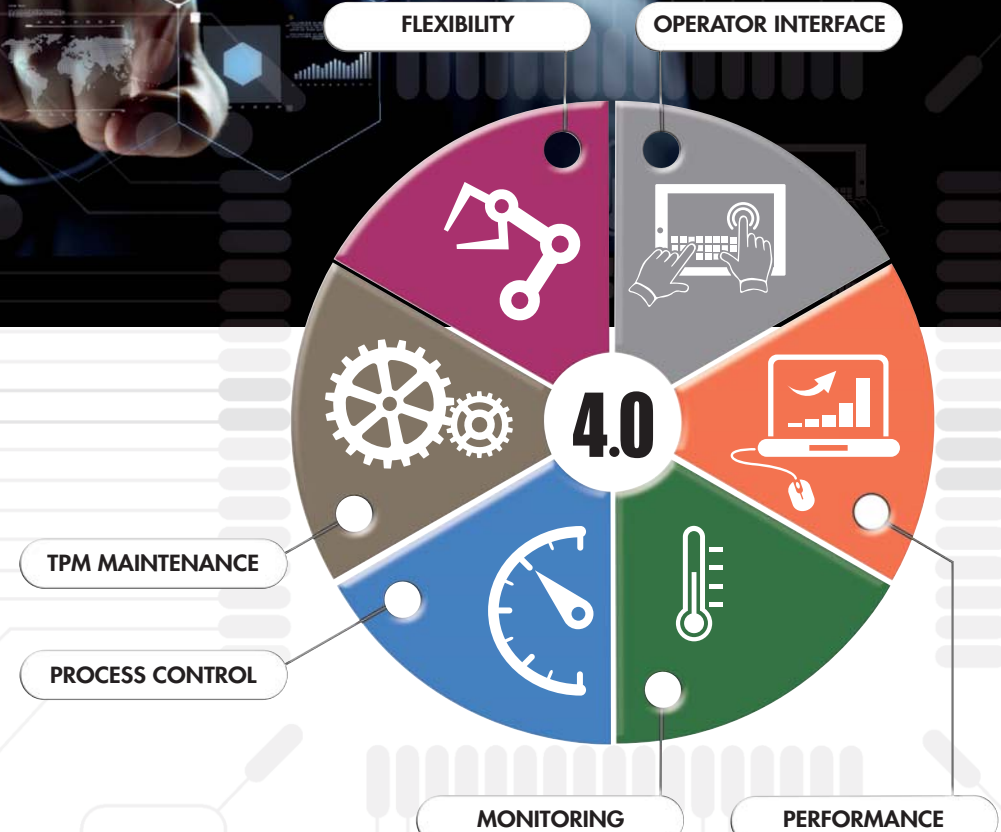


The industry of the future, industry 4.0 or even the fourth industrial revolution means the use of more and more current 3D printers, laser cutting and fully automated, numerically controlled machines.

Industry 4.0 is the foundation of digitization and networking. Following the growing introduction of information and communication technologies in industrial manufacturing, the real world is merging with the virtual world.

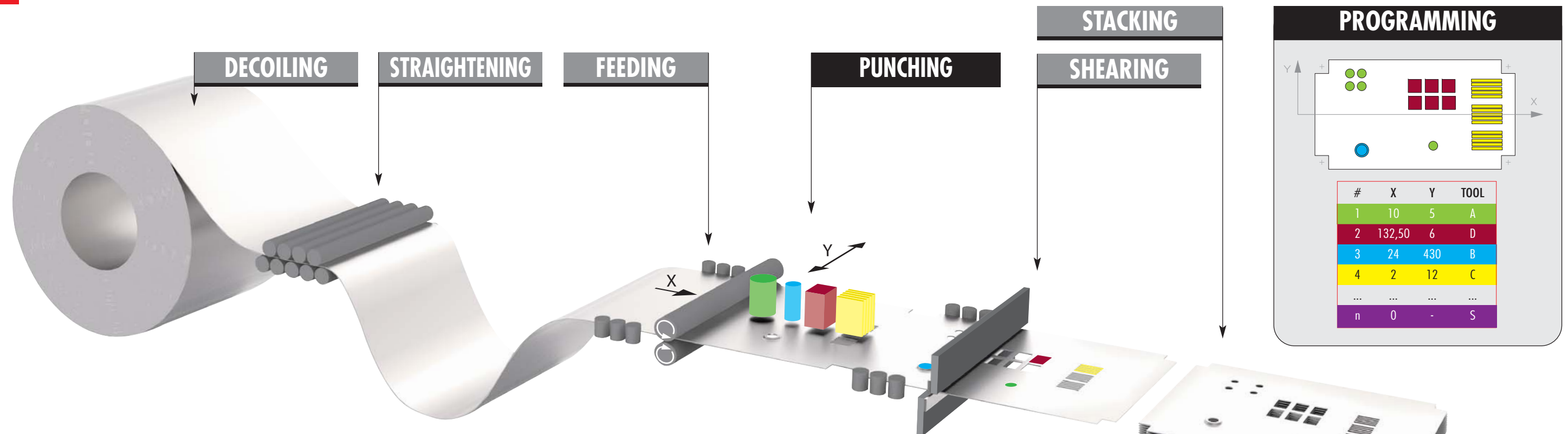
Machines, people and processes are networked and all essential information is processed in real time. DIMECO solutions are already in place for the use of upstream communication technologies (such as process reports) or downstream (orders and manufacturing parameters).

For many years Dimeco has worked with several well-known CAD/CAM technology suppliers to achieve a higher level of communication and control.





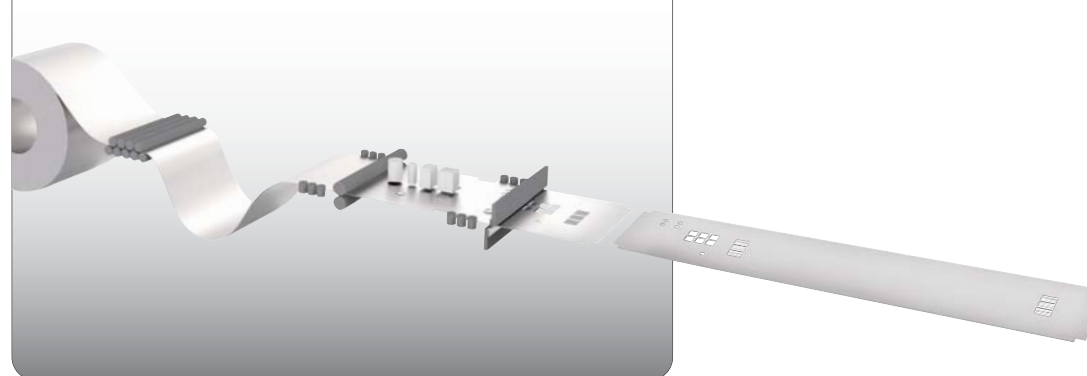
# COIL-FED PUNCHING CONCEPT



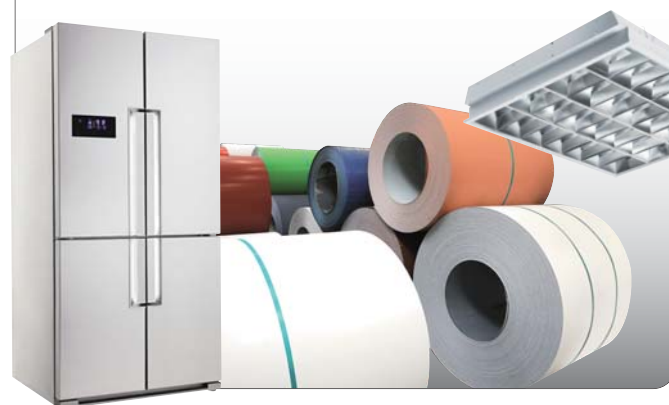
## MATERIAL COST REDUCTION



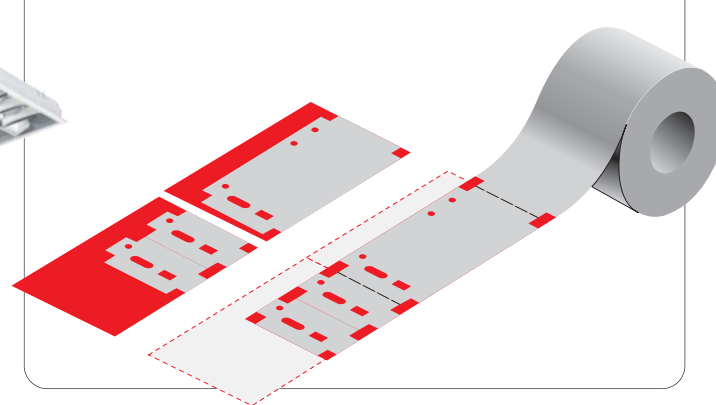
## NO LIMIT OF PART LENGTH



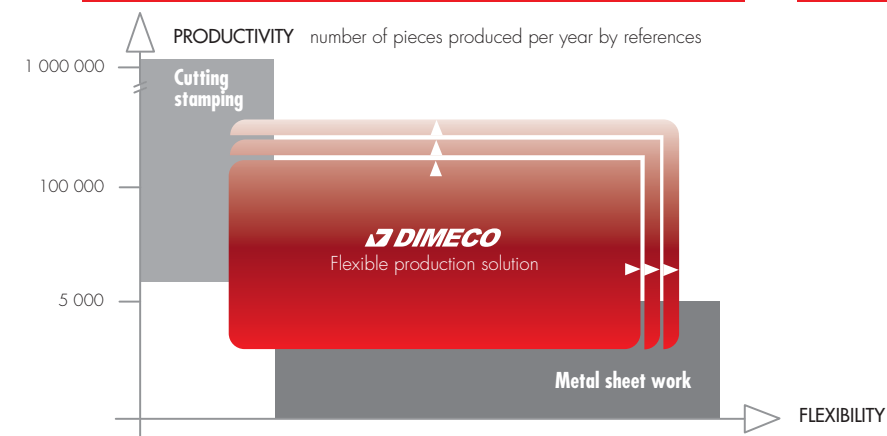
## POSSIBILITY TO USE DELICATE MATERIALS



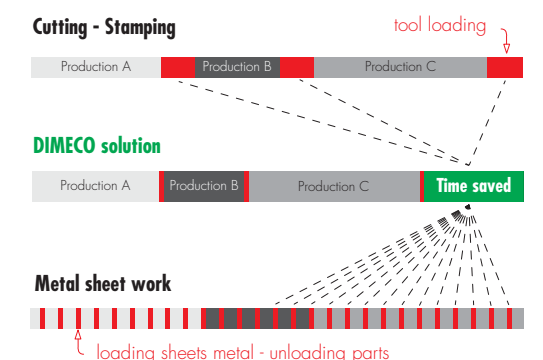
## REDUCED MATERIAL WASTED



## PRODUCTIVITY AND FLEXIBILITY



## CONSIDERABLE TIME SAVINGS





## EXAMPLE OF PUNCHING LINES

Solutions adapted to each project

### COIL-FED PUNCHING LINES

bring and allow incomparable flexibility and productivity to companies willing to increase their production capacities, optimize their cost prices and respond more quickly to market demands.

**HUNDREDS OF PUNCHING LINES  
INSTALLED EVERYWHERE IN THE WORLD  
IN ALL FIELDS OF ACTIVITIES**



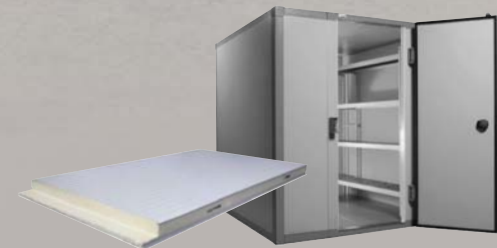
#### FLEXIPRESS®

##### APPLICATION

- Cable trays manufacturing
- Length of the parts : 3 to 6m
- Width of the parts : 50 to 900mm
- Height of parts : 25 to 110mm
- Thickness of the parts : 0,8 to 2,0mm
- Production speed in linear meter : up to 20m/mn for cable trays (of width up to 200mm and 10m/mn when wider than 200 mm)

##### LINE DESCRIPTION

- Single decoiler / straightener / electronic roll feeder
- FLEXIPRESS®
- Two DUPLEX type roll forming machines adjustable in width for counter forming of the parts in different heights and width.



#### ELECTRIC PUNCHING MACHINE AND SHEARING CENTRE

##### APPLICATION

- Cold room panels manufacturing
- Length of the parts : 1,20 to 6m
- Width of the parts : 420mm to 1300mm
- Thickness of the parts : 0,45 to 1,0mm
- Production speed in linear meter : up to 30m/mn

##### LINE DESCRIPTION

- Single decoiler / straightener / electronic roll feeder
- Double head LINAPUNCH®
- Marking unit
- Cross section shearing for blanks of width from 80 to 1300mm
- FANUC stacking robot and storage rack.



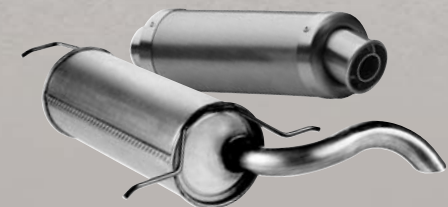
#### HYDRAULIC PUNCHING MACHINE

##### APPLICATION

- Steel purlins manufacturing
- Length of the parts : 2 to 10m
- Width of the parts : 60mm to 650mm
- Height of parts : 120 to 250mm
- Thickness of the parts : 1,25 to 2,0mm
- Production speed : 16s per 3,5m long parts (for this line)

##### LINE DESCRIPTION

- Single decoiler / straightener / electronic roll feeder
- Double head LINAPUNCH®
- Hydraulic shear and stacking system with automatic adjustment and constant height lifting table.



#### HYDRAULIC PUNCHING BENCH

##### APPLICATION

- Exhaust system manufacturing
- Length of the parts : 200 to 1000mm
- Width of the parts : 200 to 1000mm
- Thickness of the parts : 0,6 to 2,20mm
- Production speed : 20 punched blanks per minute

##### LINE DESCRIPTION

- Single decoiler / straightener / electronic roll feeder
- Hydraulic punching bench
- Hydraulic shear with stacking system and tacking system.



# THE ELECTRICAL LINAPUNCH® "MC-E" series

Electrical multi configuration



The electrical LINAPUNCH® is a coil-fed **MULTI-AXIS** punching machine, using the same standard cartridge tools as most of the turret punch presses available on the market. Patented concept, well known and recognized by many users all over the world since the last 35 years, it has been constantly improved to meet today's highest markets demands.

### AVANTAGES

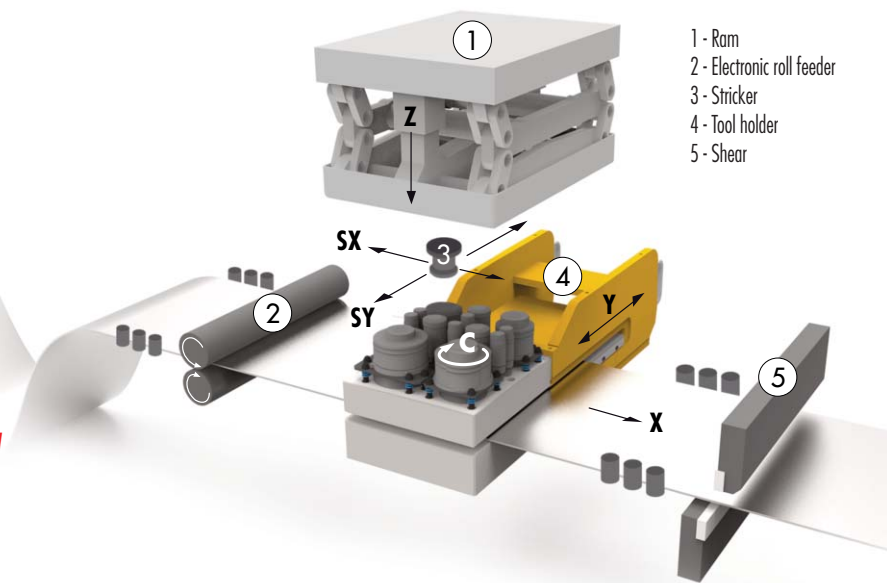
- Continuous punching
- Production 3 to 20 times more parts and to save up to 20 % material compared to conventional sheet metal punching machines
- Up to 20% of material saving
- Patented concept
- Solution meeting with any critical market demand

### FEATURES

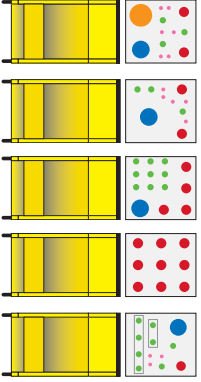
- 20 tons punching capacity
- Speed from 200 to 350 strokes per minute according to repetitions number
- Coil width from 500 mm (20 in.) to 1500 mm (60 in.)
- 2 or 4 standard or customized tool holders compatible with tooling from main brands such as WILSON TOOLS, MATE, PASS, AMADA, etc.
- Up to 72 tools available when using multitools
- Up forming and tapping operations available as options
- From 1 to 4 MULTI-INDEX available as an option
- Tool holder trolley for quick and safe set up

### OPERATING PRINCIPLE

The electronic roll feeder introduces and positions the material to a programmed position (**X axis**)  
The tool holder (4) moves across the strip by the mean servo motors (**Y axis**)  
The NC (Numerically Controlled) striker (3) moves in both direction above the selected tools (**SX and SY axis**)  
The electrically driven ram of the press (1) driven by an electric motor Hits the striker that pushes the tool and punches the material (**Z axis**)  
The MULTI INDEX function (Multi tool + Auto index) is available as an option (**C axis**)

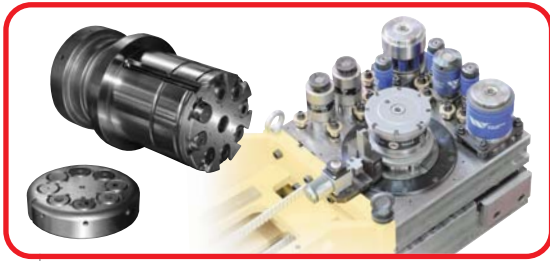


Preferred model	500	650	800	WIDTH	1000	1250	1500
	20"	25"	31"		40"	50"	60"
Single head 2 tool holders	Double head 4 tool holders						
26 tools with with MC-St tool holders	52 tools with with MC-St tool holders						
2 rotating heads maximum	4 rotating heads maximum						

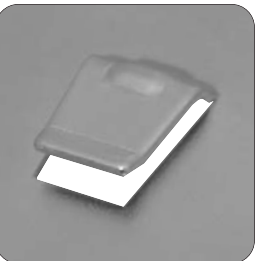
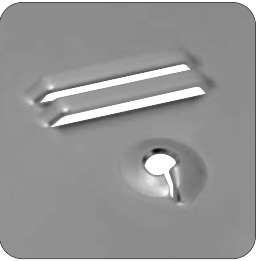
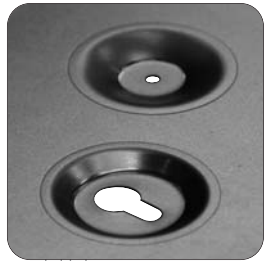


ø maxi (mm)	12,7	31,75	50,8	88,9	114,3
Thick turret cartridge tool => size	A	B	C	D	E
Standard tool holder - St	6	3	2	1	1
Standard tool holder + Ri	5	3	2	1x D 3x B 8x A	0
Standard tool holder + UF1	0	9	1x C and 3x C	1	0
Standard tool holder + UF2	0	0	9x C	0	0
Custom configuration - Sp	Upon request				

St : Standard / Ri : Indexable and rotating / UF : Up Forming / Sp : Special



Multi Index is a function that groups the auto index function allowing the orientation of a tool over 360° and the multitool function, which integrates few tools in a D station (3, 8 or 16 depending on the chosen configuration).



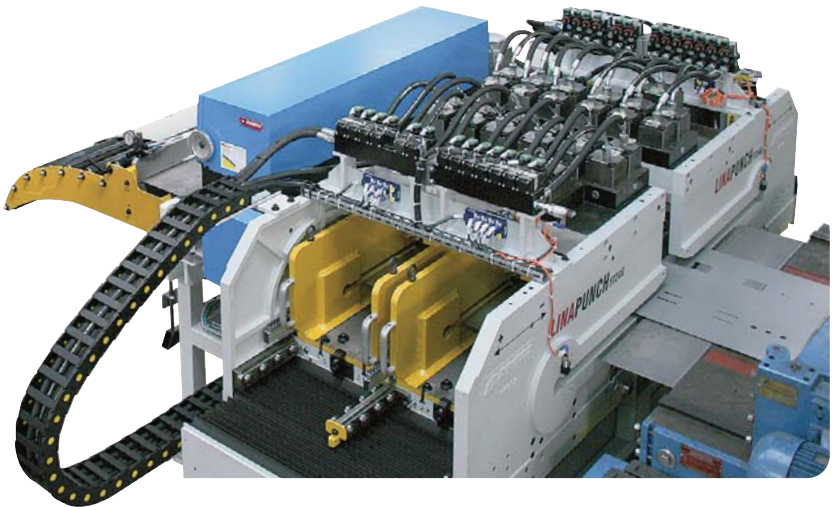
# HYDRAULIC LINAPUNCH® "YT" SERIES

A range of hydraulic punching machines with a punching capacity of 8 tons able to reach a rate of 150 spm (stroke per minute) or even 200 spm when nibbling, offering the same advantages as the LINAPUNCH MCE.

500	WIDTH	1000
20"		40"
Single head 2 tool holders		Double head 4 tool holders
14 tools with with MC-St tool holders		28 tools with with MC-St tool holders
2 rotating heads maximum		4 rotating heads maximum

Available in two widths, it can be equipped with one or two punching heads depending on the width (500 mm = 1 head and 1000 mm = 2 heads). The YT6 model is equipped with 6 cylinders (7 in option) and has one single cassette (2 cassettes optional). The YT12 model includes 12 cylinders (14 optional) and it has 2 cassettes. The number of tools per cassette is limited and specified at the order : 3 "B", 2 "C", 1 "D".

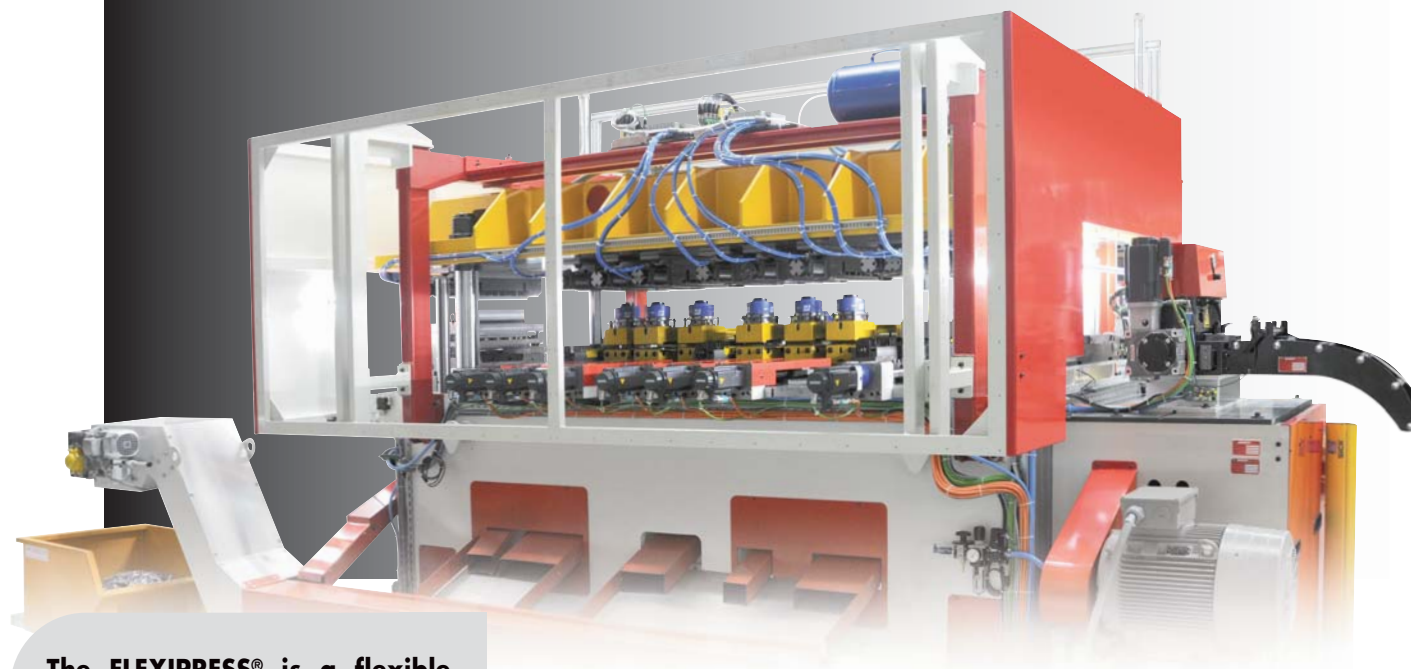
It is possible to add an optional 10 tons capacity nibbling tool with a maximum size of 120 x 100 mm at the rear of the cassette. Each standard cassette can be replaced by a cassette fitted with a rotating head to accommodate either an AUTO-INDEX tool or a MULTI-TOOL of size "D" to allow the nibbling of complex shapes.





## FLEXIPRESS®

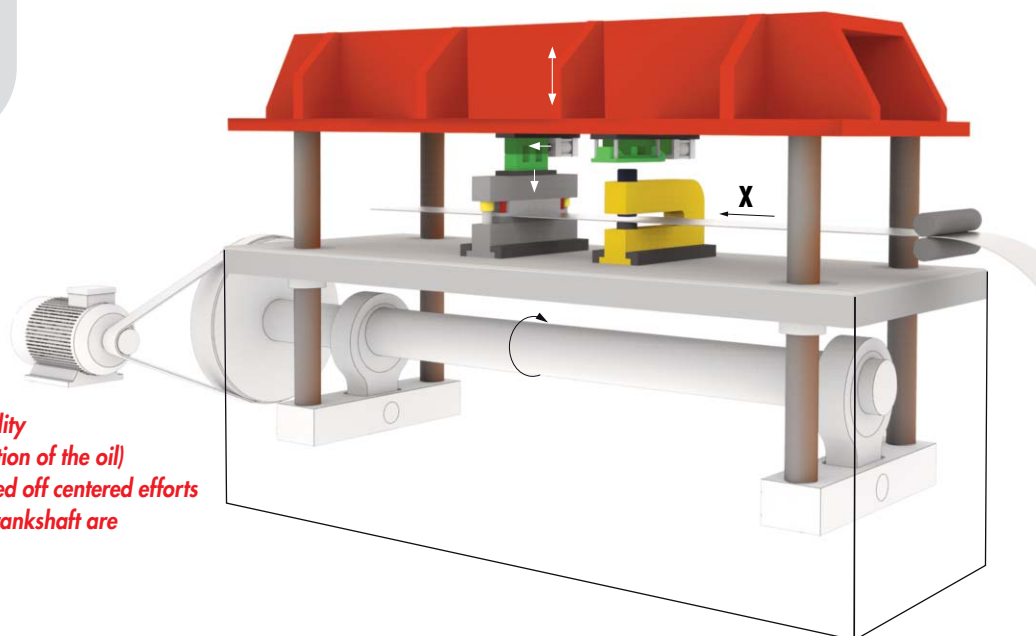
Continuous coil-fed punching solution without any tool changes



The FLEXIPRESS® is a flexible punching system using a mechanical press, specifically designed for punching and small embossing to provide high punching rate together with significant tonnage capacity. The tool selection system makes it an essential concept for producing family products with high production volumes.

### OPERATING PRINCIPLE

- The press in "automatic mode" runs at a fixed stroke but with a variable speed
- The press ram is driven by the eccentric shaft (driven by an asynchronous motor) and the crankshaft (driven with a transmission by belt and electro-pneumatic clutch-brake), both located in the lower part of the press
- Each tool is spring loaded and is individually activated by a pneumatic tool selector which is selected by the DIMECO software



### AVANTAGES

- Variable speed press
- All the required tools belonging to the same product family are set and remain on the press table
- Electro welded frame construction guaranteeing a very high mechanical stability
- Automatic lubrication (centralized recirculation of the oil)
- 4-guided columns concept allowing balanced off centered efforts
- Compact, by the eccentric shaft and the crankshaft are both located in the lower part of the press
- Quick and easy to install
- Small embossing are achievable
- Standard thick turret tool or special die sets can be used
- Solution meeting with any critical market demand
- Available in "SERVO" mode :
  - Higher productivity
  - More flexibility
  - Better control for the line feeding synchronization and the punching cycle, especially when increasing the quantity and the complexity of the holes.

### FEATURES

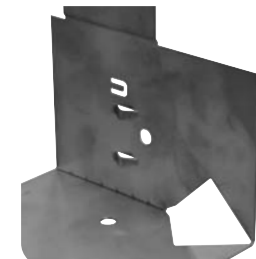
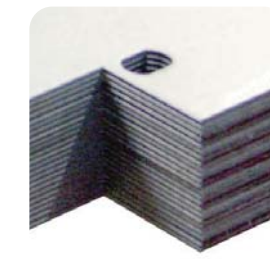
- Tonnage from 60 to 130 tons
- Table length between columns from 1000 mm (40") to 2500 mm (100")
- Table depth between columns from 420 (16") to 1050 mm (42")
- Up to 40 tool selectors
- Variable speed up to 150 spm.

TONNAGE (tons)	60 - 80 - 100 - 130	
Width	< 420 mm (16")	< 1050 mm (40")
Length	1000 mm (40")	
	1700 mm (65")	
	2500 mm (100")	
Stroke	60 to 150 rpm (rotation per minute)	

Other sizes available upon request



Rack type tool selector



## FLEXIPUNCH®

### More flexibility with cross positioning of programmable tools

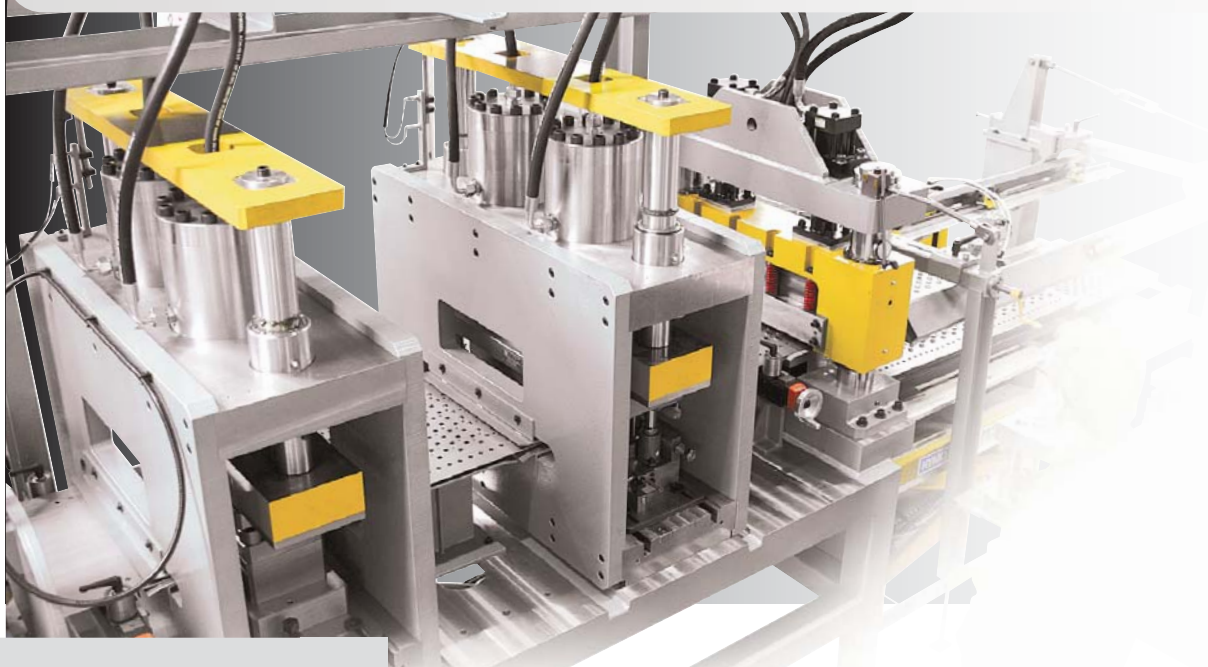
In addition to all FLEXIPRESS® benefits, the FLEXIPUNCH® is a multi axis solution offering the ability to individually pilot according to the application and parts families.

This makes it possible to position the needed tool for a series before starting the production or even while producing and running the press, in real time. FLEXIPUNCH® is also available in SERVO version.



# HYDRAULIC PUNCHING BENCH

The most economical solution

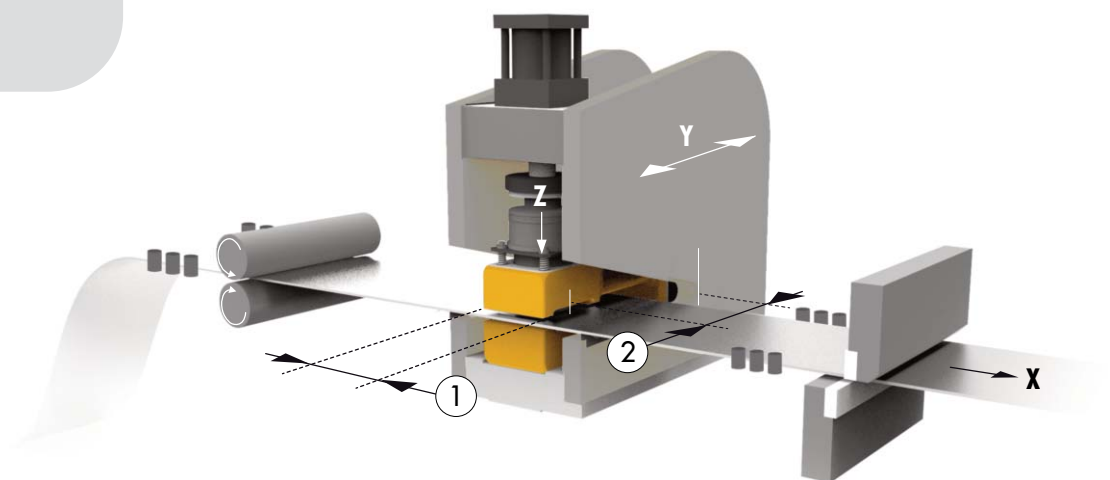


The punching bench concept is the most economical flexible punching solution.

**DIMECO** can provide custom-made solutions with attractive return in investment.

## OPERATING PRINCIPLE

The electronic roll feeder moves the material, **X**-axis  
The fixed punching station is adjustable on the width of the coil, **Y**-axis  
The hydraulic cylinder hits the punching tool, **Z**-axis  
The shear cuts the part to length



## AVANTAGES

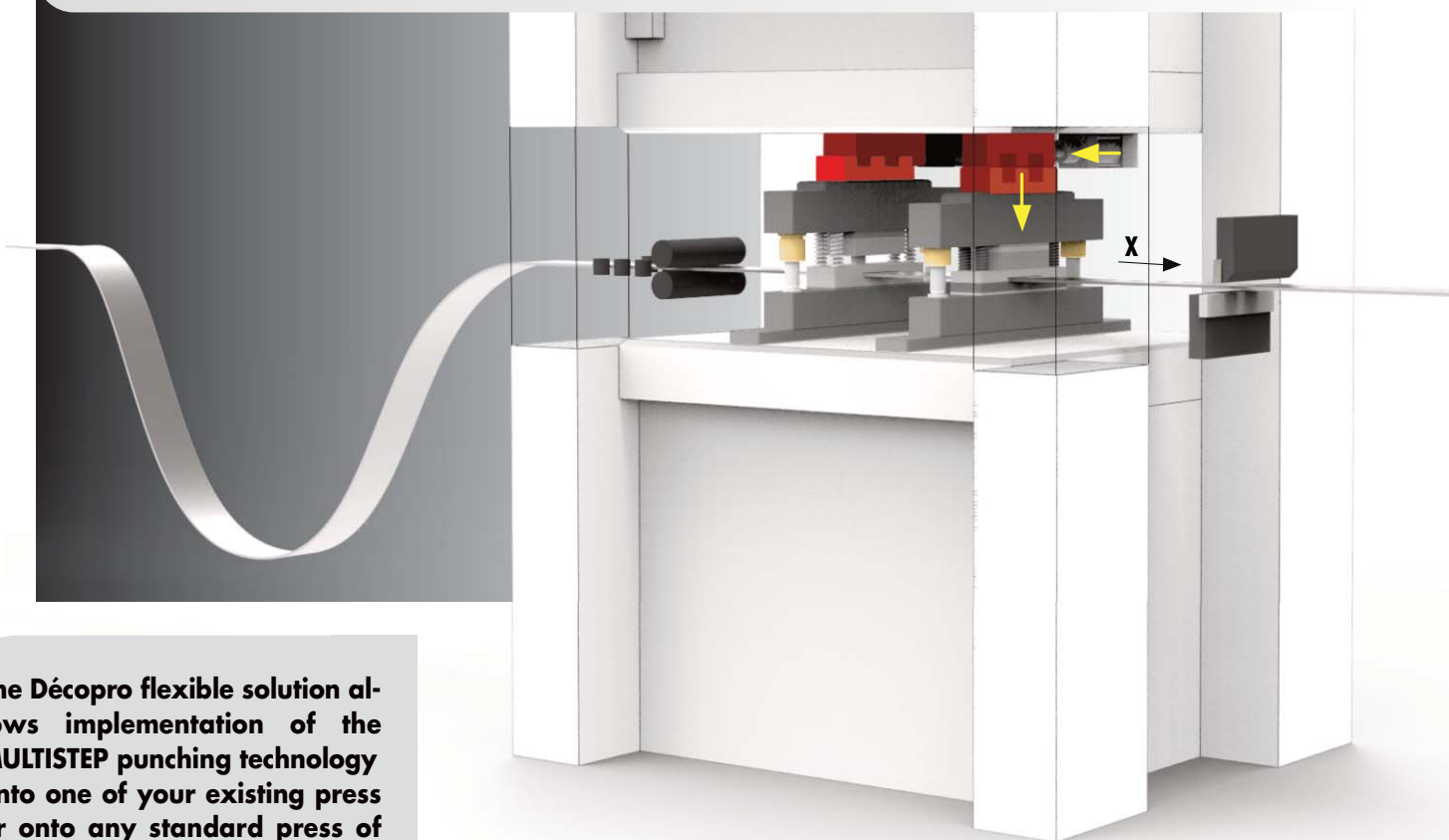
- Cost effective and economical solution
- Customized solution
- Designed with adjustable in the depth standard C-Frames
- Possible to use fixed arcade type tools
- Wide range of hydraulic cylinder available in many tonnages
- Very easy to program
- Quick and easy to install.

## FEATURES

- punching capacity : up to 100 ton
- punching area : up to 3000 mm (118") x 1050 mm (40")
- Use of standard thick turret tools and also specific die sets
- Embossing is available
- Existing tools can be used.

Tool size ①	C-Frame depth ②		
	100 mm	300 mm	500 mm
Size B / 31,75 mm	1,5 - 2,5 tonnes		
Size C / 50,80 mm	1,5 - 2,5 - 3,5 tonnes		
Size D / 88,90 mm	6 - 10 tonnes		
Size E / 114,30 mm	10 - 15 - 25 - 30 tonnes		
Size F / 152,40 mm	10 - 15 - 25 - 30 tonnes		





The Décopro flexible solution allows implementation of the **MULTISTEP** punching technology onto one of your existing press or onto any standard press of any brand. An outstanding solution to manufacture families of parts, which show various dimensions and shape patterns.

### AVANTAGES

- Requires a low tonnage standard press
- Reduces tooling costs
- Flexibility : simple part programming, different part lengths can be produced in a row one after each other reducing changeover & start-up losses to nil
- High level of quality: length accuracy  $\pm 0,1$  mm thanks to the SIEMENS servomotor and its twin pitch control system (one on motor and one on sheet metal strip itself)
- User friendly touch screen control panel developed in the user's language.

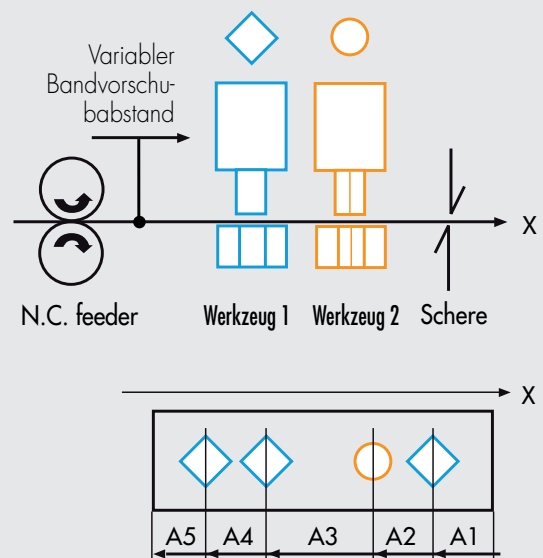
### OPERATING PRINCIPLE

On each pitch of the feeder, the CN pilots one or several selectors mounted on the ram of the press which introduces a gaging bar between the ram of the press and the tools.

Thus, we punch the different programmed operations on each stroke of the press.

Then a cropping tool cuts the punched part at the last operation. Simple as that !

### PRODUCTION EXAMPLE



#### Sequence

- |                            |                            |
|----------------------------|----------------------------|
| 1 - Vorschub A1/Werkzeug 1 | 4 - Vorschub A4/Werkzeug 1 |
| 2 - Vorschub A2/Werkzeug 2 | 5 - Vorschub A5/Schere     |
| 3 - Vorschub A3/Werkzeug 1 |                            |





# STACKING SYSTEMS

Solutions adapted to every need

## The choice of the stacking solution depends on several criteria.

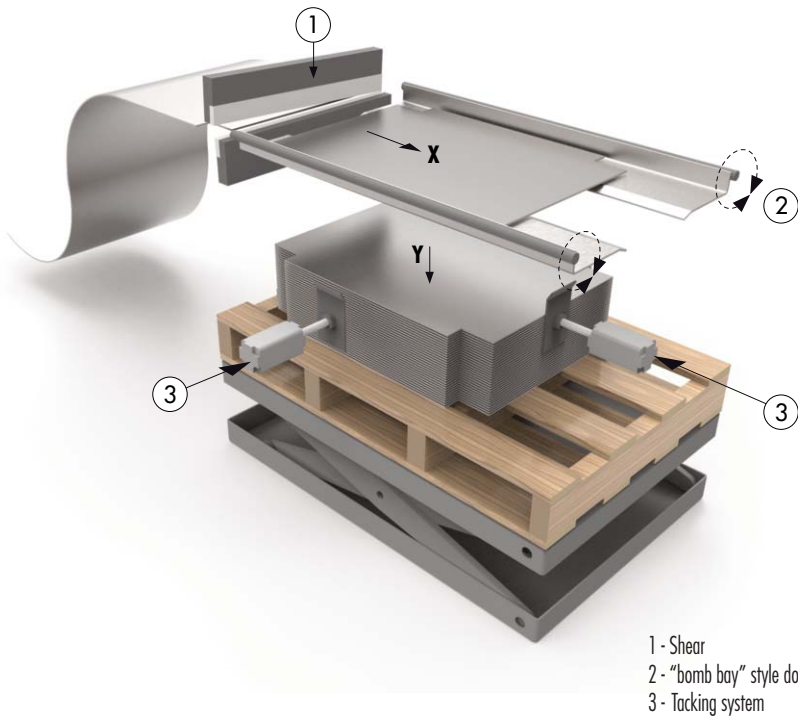
To meet with any requirement, DIMECO offers a range of solution based on 3 alternative principles with the possibility of adding options and therefore increasing performances. From a very simple "bomb bay door" style stacking solution for production of parts in medium production, it is also possible to have a totally flexible solution for productions of one-off parts.

THE BEST SOLUTION ACCORDING TO YOUR NEED	Technologies		
	"BOMB BAY" STYLE	PICK & PLACE	MULTI-AXES ROBOT
Long and narrow parts	•••	••	•
Very wide and thin parts	•	••	•••
High speeds	•••	••	○
Accurate stacking	•••	••	••
Sorting of different parts	○	•	•••
Different piles simultaneously	○	••	•••
••• Very productive / •• productive / • some restrictions / ○ not possible			

## "BOMB BAY DOOR" STYLE OPENING STACKER

- No scratches on the produced and piled parts
- Constant height of piles.

Installed straight above the shear to allow stacking virtually without relative movement between the part being processed and the stack. The part is held by two "bomb bay door" style doors while it is moving through the shear. The opening of the doors is synchronized with the end of the shearing to avoid any damage on the end of the part. Often installed with constant level lifting tables, the dropping height is limited and thus avoids the risk of scratches. Stacking speed of 1 sec per part. Tacking system available as an option for perfect pile quality as well as roller conveyor for evacuating of full pallets and loading of empty ones. Length of parts up to 6m.

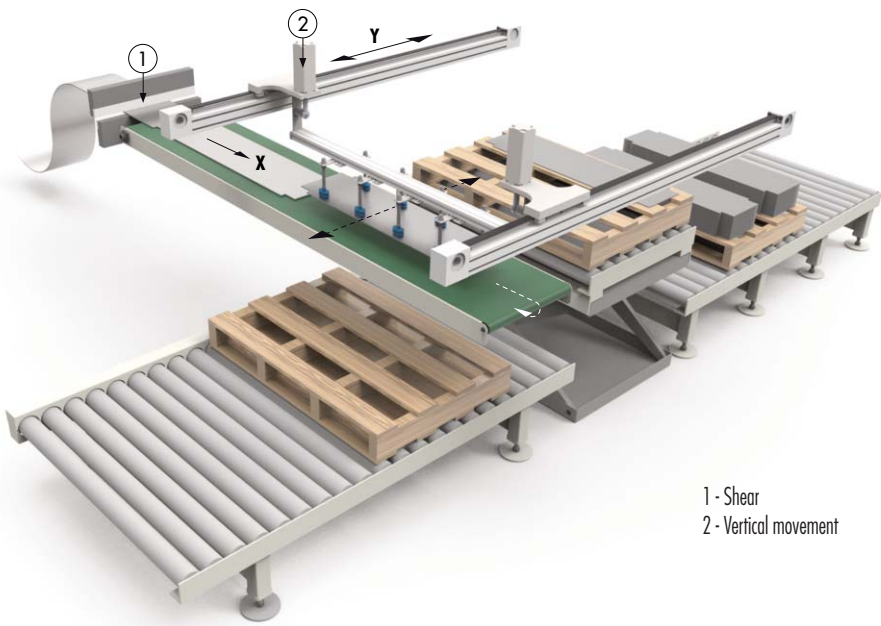


1 - Shear  
2 - "bomb bay" style doors  
3 - Tacking system

# PICK & PLACE

- Several piles
- No scratches on the produced and piled parts
- Hidden cycle time

A conveyor moves the on-going part once cut from the coil, to the pick up position. The PICK & PLACE system picks up the part thanks to suction cups (vacuum or magnetic) and then puts it on a pile situated on the side of the line. Production can start again as soon as the next parts have been lifted from the conveyor. Thus, the handling time is completely hidden. The risk of scratches is limited as the part is placed on the stack being processed. Several piles per pallet can be generated thanks to the programmable horizontal axis of the manipulator. Handling cycle between 4 and 8 sec. according to distances to travel.



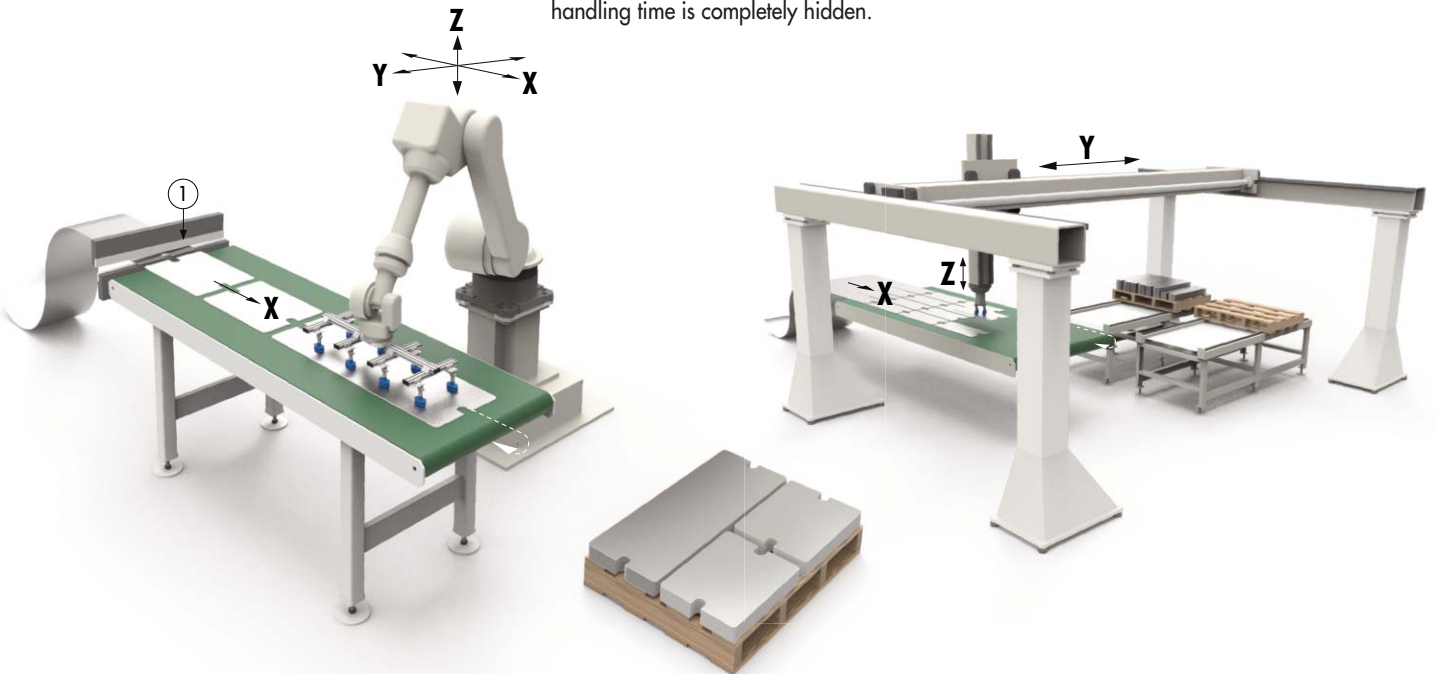
1 - Shear  
2 - Vertical movement

## MULTI-AXES ROBOT

- Hidden cycle time
- No scratches on the parts
- Total flexibility

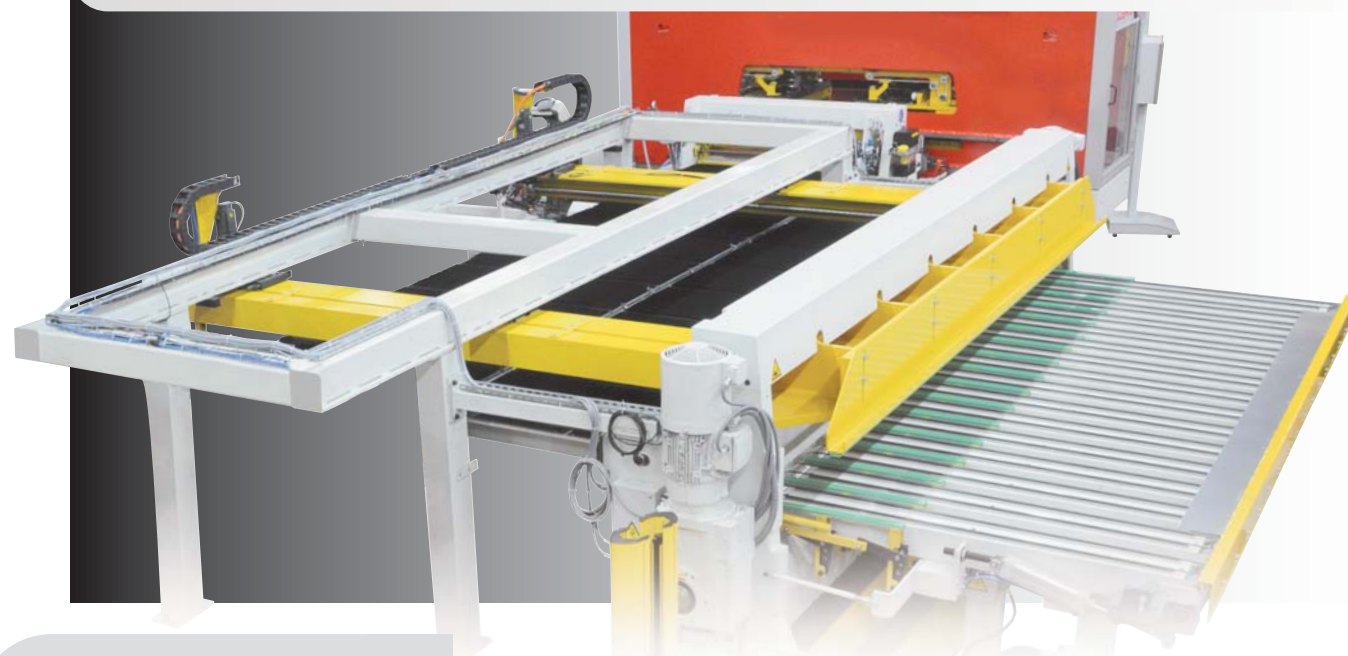
A conveyor moves the on-going part once cut from the coil. The multi-axis robot picks up the parts thanks to suction cups (vacuum or magnetic) and then puts it on one of the piles around the production line. Production can start again as soon as the parts have been lifted from the conveyor. Thus, the handling time is completely hidden.

The risk of scratches is limited as the part is placed on the stack being processed. Total flexibility, reduced working area thanks to a 6 or 7-axis robot or a wider working area thanks to a 4-axis gantry system according to the customer needs. Handling cycle between 9 and 20 sec. according to distances to travel.

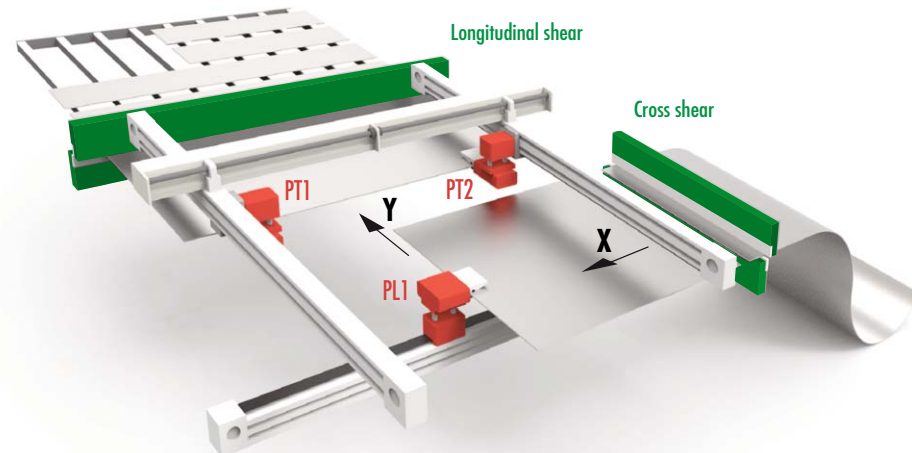


# SHEARING CENTER

Single blanks production



The shearing center is the solution that pushes the limits of flexibility and productivity by integrating itself with the punching or cutting line. It makes it possible to separate different nested pieces in the width of the strip by longitudinal shearing.



## ADVANTAGES

- economical and profitable solution
- customized solution
- very easy to program and to use

## DESCRIPTION

The range proposed is based on a robust construction which to allow a very high precision of shearing. The product being made is supported by brushes to prevent scratches. The movements are performed with servo motors and accurate transmissions systems with no play. At the exit of the longitudinal shear, a sheet support device follows the cutting movement until the removal of the blank.

## INK JET MARKING

Optional in both directions (X and Y).

RANGE	Length*		
Width	2000 mm	3000 mm	4000 mm
1000 mm	CC.10/20 (HD)	CC.10/30 (HD)	CC.10/40 (HD)
1250 mm	CC.13/20 (HD)	CC.13/30 (HD)	CC.13/40 (HD)
1500 mm	CC.15/20 (HD)	CC.15/30 (HD)	CC.15/40 (HD)

\* other dimensions on request

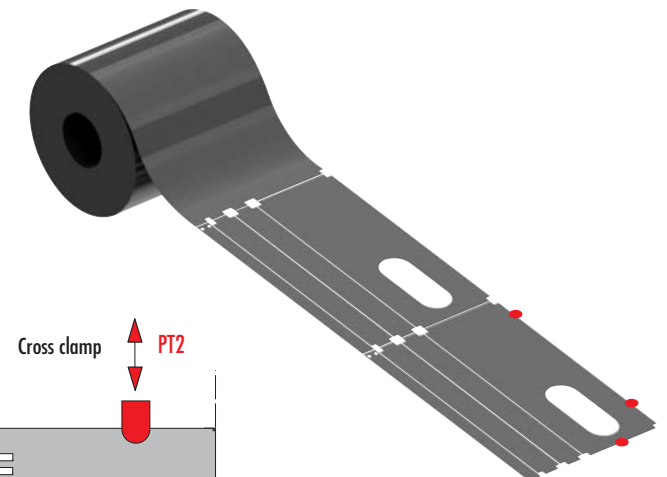
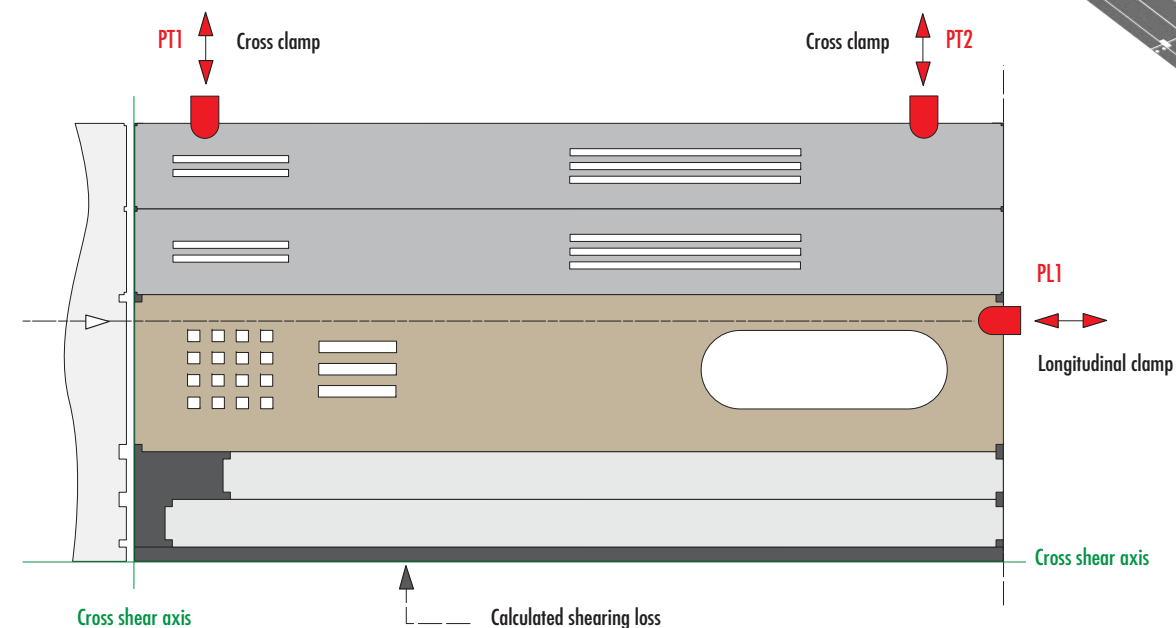
STD version : max thickness 2 mm for 400 Mpa steel

HD version : max thickness 4 mm for 400 Mpa steel

# THE CONCEPT

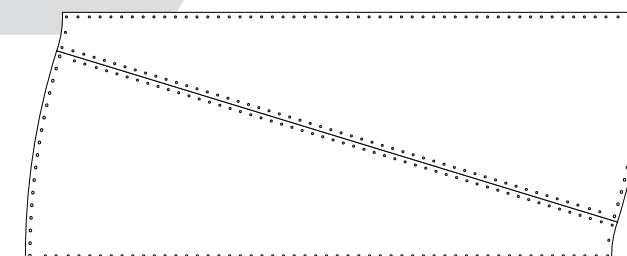
## OPERATING PRINCIPAL

The nesting is separated from the coil by the cross shear of the line. It is then transferred by the longitudinal clamp (PL1) in front of the longitudinal shear. Two cross clamps (PT1 and PT2) push the nesting to a referencing position, and then position it in the longitudinal shear. The punching are then made while the next nesting is in place and being cut by the longitudinal shear.



# AN ESSENTIAL APPLICATION

## The non-parallel cross shearing!



## DESCRIPTION

Both cross clamps (PT1 and PT2) are individually programmable. This makes it possible to make slant cuts for the realization of trapezes for instance.

## UNLOADING OPTIONS

In addition to the sheet support function, it is possible to integrate an exit conveyor.

It is very easy to integrate our "multi-axis robot" unloading solutions in the shearing center.





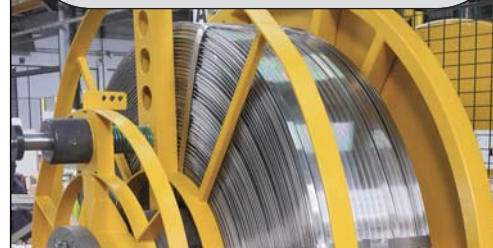
## PRESS FEEDING

THE COIL : points to consider ?

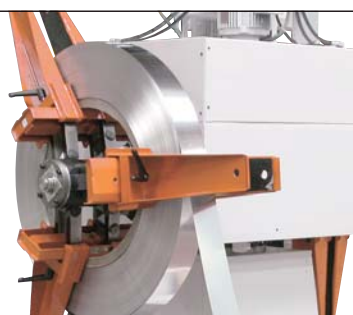
### THE WEIGHT From 50kg to 33 tons



### THE WIDTH From 10 to 2000 mm



Appropriated coil keepers



Standard coil keepers

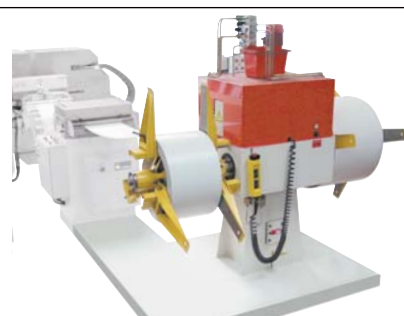


Supported mandrel

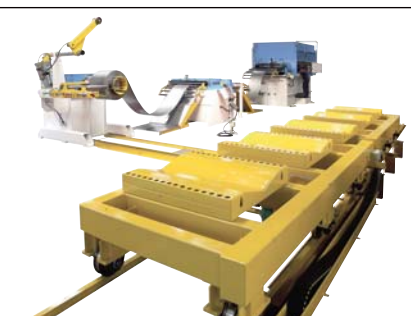
### THE CONFIGURATIONS of the decoiling



Simple



Double

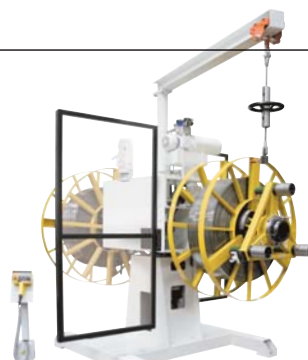


Multi coil car system

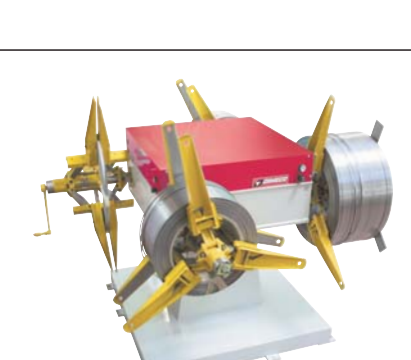
### ADDITIONAL SOLUTIONS



Coil storage



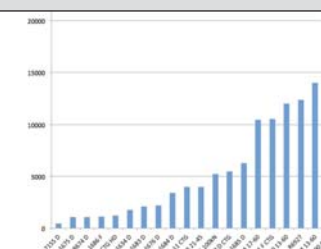
Complementary accessories



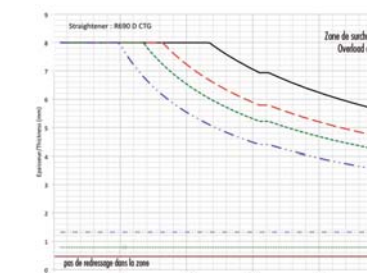
Special requirements

STRAIGHTENING : a vast range of models

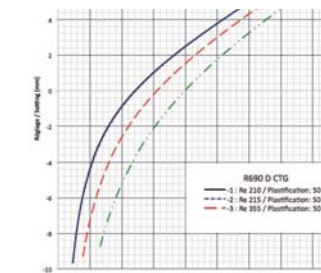
### MODEL SELECTION



The range



Straightening capacity diagrams



Straightening rolls adjustment diagrams

### COIL DEFECT CORRECTION



Standard - 11 straightening rolls



Better strip defects correction

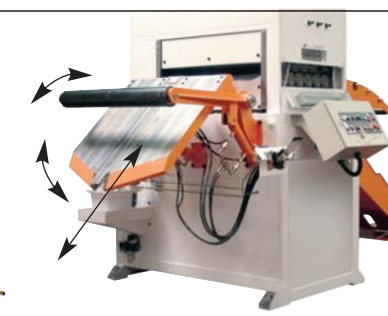


High precision straightening

### OPERATOR SECURITY AND ERGONOMICS



3-movements peeler

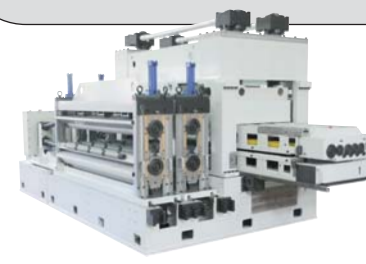


Heavy duty peeler

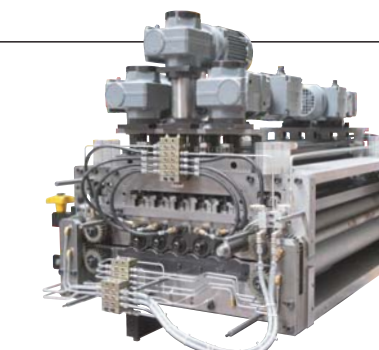


Threading table

### OPTIONS AND SEPCIAL FEATURES



Cassette straightener



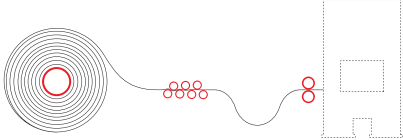
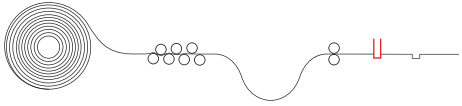
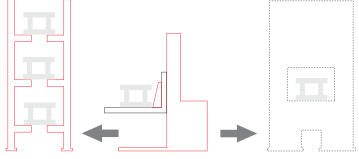

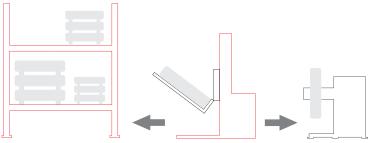
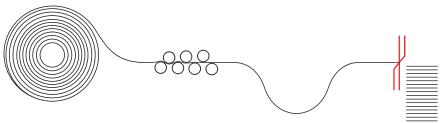
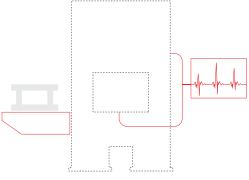
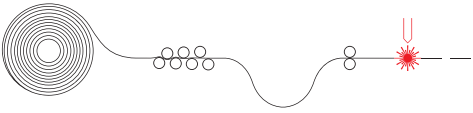
Motorized adjustment of the straightening rolls



Cleaning



EQUIPMENT MANUFACTURER SINCE 1957

STAMPING	MANUFACTURING
 <p>Coil handling and press feeding lines</p>	 <p>Coil-fed punching solutions</p>
 <p>Loading and storing of press tools and injection molds</p>	 <p>Roll-forming</p>
 <p>Loading and storing of coils</p>	 <p>Cut to length lines</p>
 <p>Quick change tool and press safety controls</p>	 <p>Coil fed laser cutting solutions</p>

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