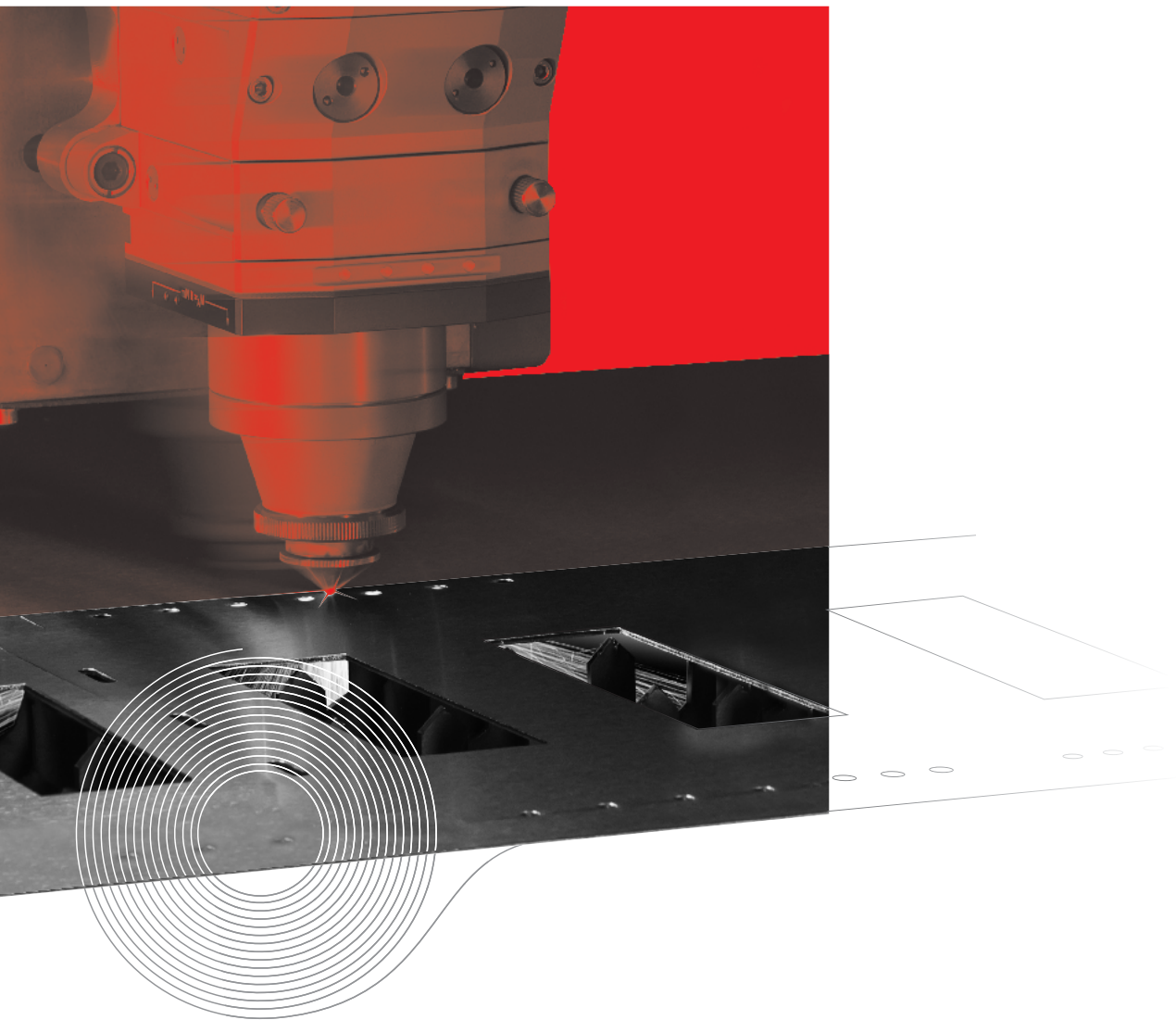


LINACUT

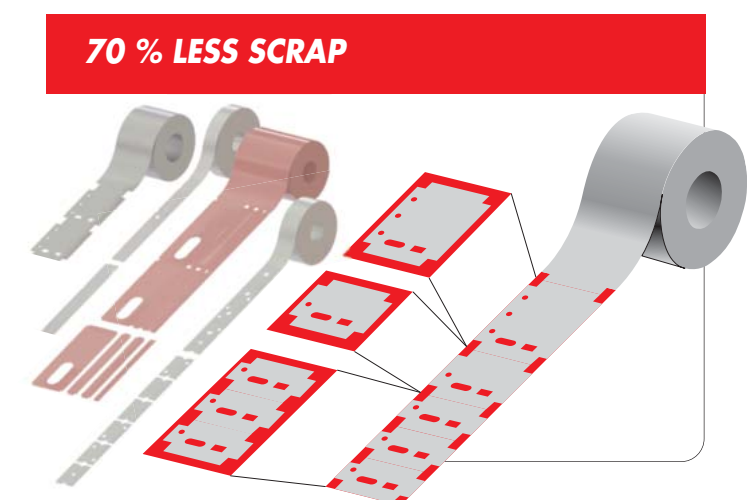
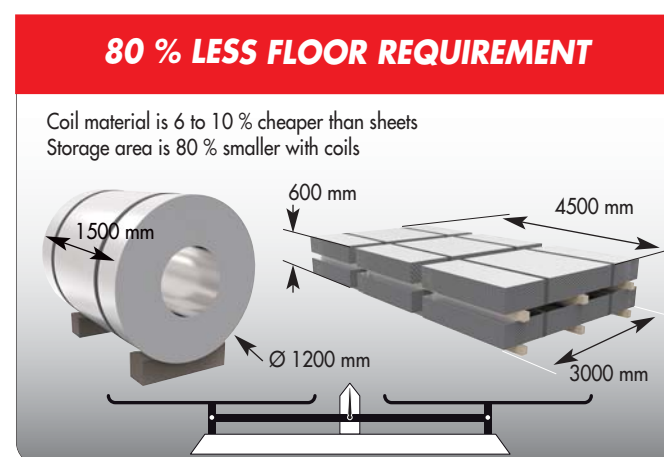
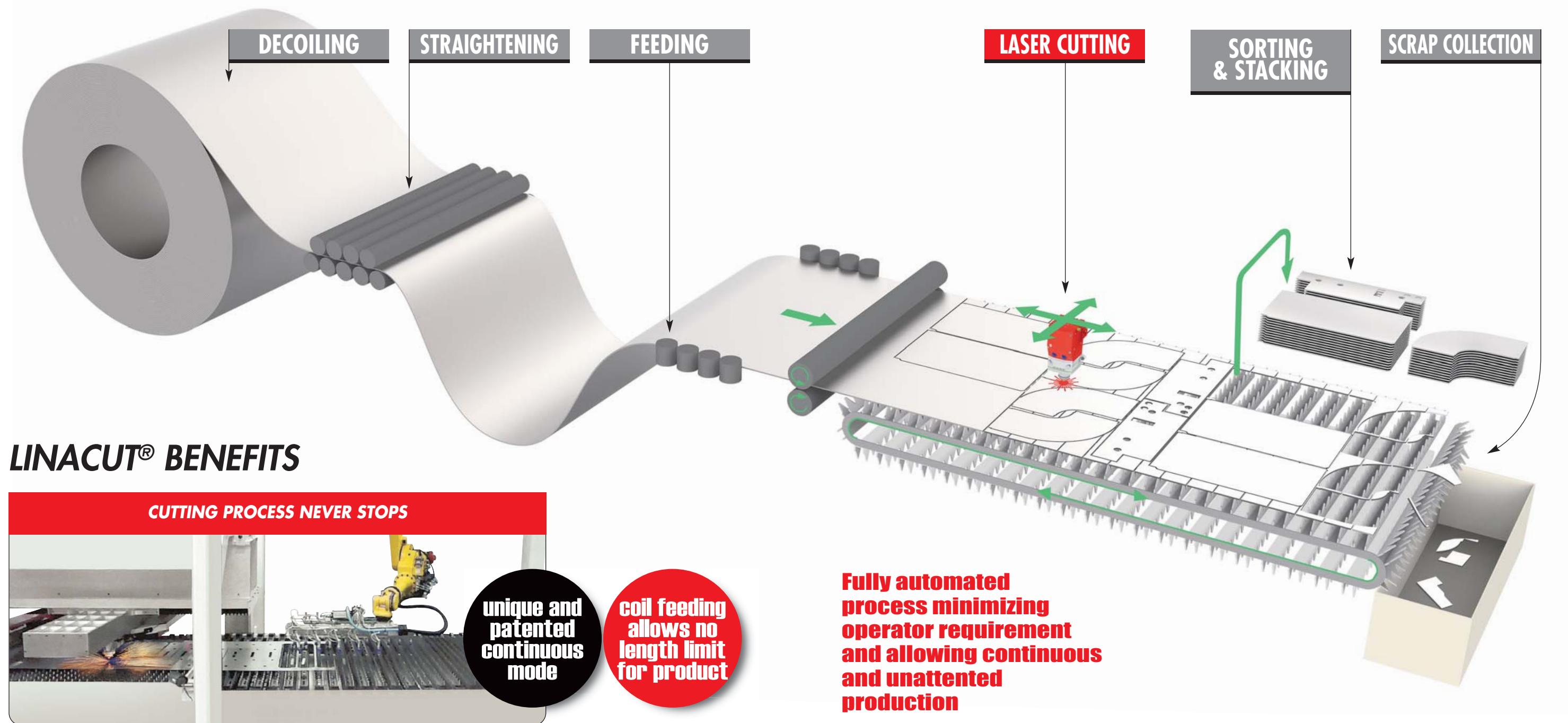
COIL-FED FIBER LASER



FLEXIBLE CONTINUOUS FORMING PROCESSES

www.dimeco.com

UNIQUE MANUFACTURING PROCESS : FROM COIL TO PART



MACHINE RANGE

OVER 60 YEARS
OF COIL HANDLING
EXPERIENCE

LINACUT
4 SIZES

PART HANDLING
AND SORTING PER
CUSTOMER NEEDS

XL series

Maximum coil width
2000 mm (80")

L series

Maximum coil width
1500 mm (60")

M series

Maximum coil width
1000 mm (40")

S series

Maximum coil width
500 mm (20")



BLANKING LINE - STEEL CENTER
AND AUTOMOTIVE SPARE PARTS SUPPLIER



STAINLESS STEEL CUTTING AND
EMBOSSING LINE MANUFACTURER OF
HAND HYGIENE AND DOSAGE SOLUTION



SHORT CUTTING LINE
RECREATION VEHICLE
COMPONENTS MANUFACTURER



SHORT CUTTING LINE
BAND SAW BLADES MANUFACTURER

- 15 ton single uncoiler with coil-car and line axis regulation.
- Precision straightener with 13 roller cassette and cleaning system.
- 3 kW XL-LINACUT with slat conveyor.
Cutting area : 2000 x 3000 mm (80" x 120").
Unloading zone : 5 meters (16').
- Gantry system for taylor made part sorting and stacking.
Double stacking table.

- 4.5 ton dual uncoiler.
- 11 straightening roll straightener.
- Dual head LINAPUNCH turret punch press with 4 cassettes
(including 2 multi index stations).
- 2kW L-LINACUT with slat conveyor.
Cutting area : 1000 x 1000 mm (40" x 40").
- Gantry system with pallet conveyor system.
- 3 pallet slots .

- 4.5 ton single uncoiler.
- 11 roll straightener/feeder.
- 3kW M-LINACUT with slat conveyor.
Cutting area : 1000 x 1000 mm (40" x 40").
- Sorting and stacking with FANUC 6 axis robot system.
- 3 slot pallet conveyor.

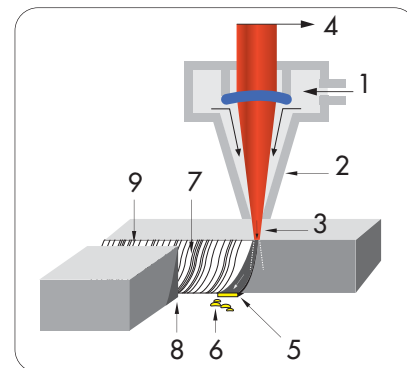
- 3 ton single uncoiler.
- 11 straightening roll straightener.
- 2 kW S-LINACUT without slat conveyor.
- Cutting area : 500 x 500 mm (20" x 20").
- 8 meter long part (2,4').

HIGH END MACHINE COMPONENTS

Fiber laser

Pressurized gas is required in the laser cutting process to evacuate the material molten by the laser. We currently use 15 to 25 bars (210 to 360 psi) gas pressure. The gas consumption is connected to size of nozzle and pressure: we consider an average 20 to 25 nm³/h. Nitrogen (N₂) is used a lot as it provides a protection against oxydation. Oxygen (O₂), or compressed air can be used depending on application and material. Linacut gets 3 separate valves allowing customer to use 3 different gas.

1 - Assist gas / 2 - Cutting nozzle / 3 - Nozzle offset / 4 - Cutting direction / 5 - Molten material / 6 - Dross / 7 - Cut roughness / 8 - Heat affected zone / 9 - Kerf width.



Laser resonator : 2 - 3 - 4 - 5 - 6 kW output power

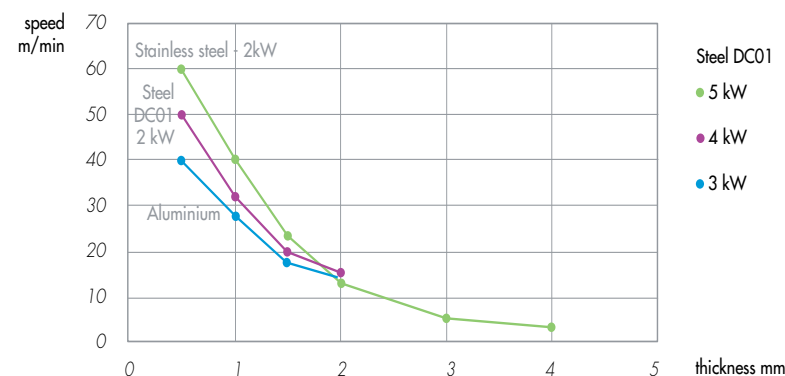
- Brand : ROFIN / IPG
- Yb-fibre (wave length 1070 nm)
- Fiber Ø 50 µm
- Pulse generator mode
- Profinet connection to Dimeco PLC
- External Chiller (design : water / air)



Cutting head

Precitec 2 kW and 3 to 6 kW versions are implemented on Linacut and are driven by Z axis for automatic height adjustment. Kerf width : 0,12 mm (0,005").

- As option :
- Autofocus (with 3, 4, 5, 6 kW laser resonator)
 - Automatic control of the laser beam power
 - Automatic nozzle cleaning.



Linear motor

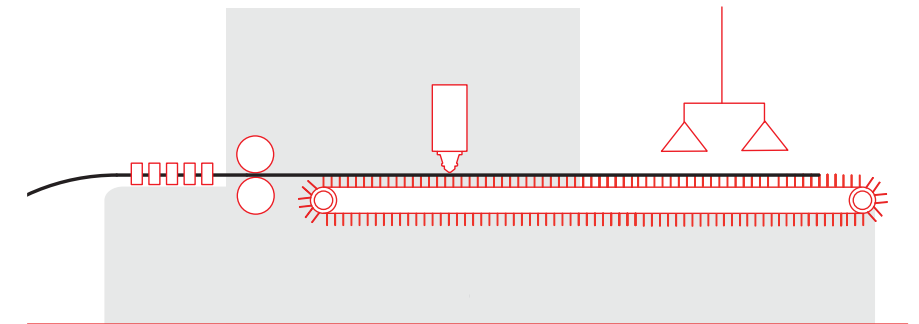
The cutting head motion X + Y is powered by linear motors to match 3 m/s² acceleration / deceleration and to guarantee the accuracy in the angles. Suitable water cooling system is part of the package. The Z height adjustment is powered by precision rack and pinion solution. Linear motors are not only required to increase speed, but they are mandatory to match cutting quality !!!

Ball screw or rack and pinion drives need to slow down when the cutting direction changes, thus changing laser cutting parameters, creating a burr and cutting quality disruption in the corners. Linear motors allow full speed motion generating high level cut quality all along cutting pattern. Linear motors require less maintenance and have longer life span.



Slat conveyor

To allow simultaneous cutting and part off loading, slats are simultaneously moving with the strip (conveyor design). The accuracy of specific Dimeco construction and synchronisation allows to move accurately the parts to the pick up area in order to obtain quality blanks stacking, and avoid any scratches.



Numerical control and line monitoring

Main control panel :

- BOSCH-REXROTH (INDRAMAT) MTX numerical control
- 2 color displays : line monitoring screen and screen for PC applications, keyboard, mouse
- USB port onto the PC machine
- Storage compartment for documentation
- Graphic process control with alarm display
- Management of network connections
- VPN remote connection for maintenance
- INDRAWORKS development interface

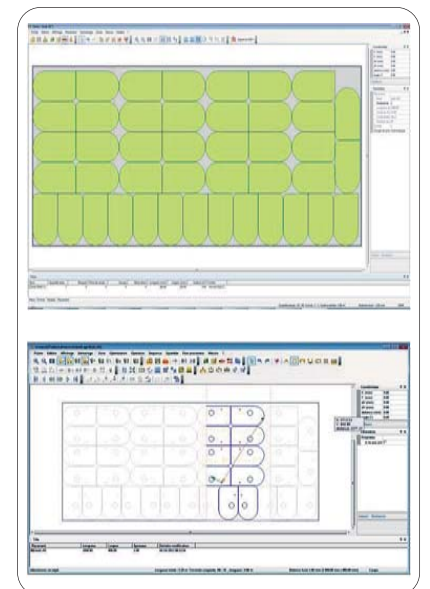


CAD-CAM software

A complete software, ALMA "Actcut" allows :

- 2D drawings import from other cad system
- Creation/modification of any drawings
- Mass file import
- Parts nesting along the coil with many strategies
- Automation of the nesting or manual nesting
- Automatic generation of skeleton trimming
- Automatic generation of ISO code for the CNC control
- Automatic generation of the CSV file for the gantry/robot picking system (if option is taken)

- Option :
- Production data import (link to your ERP system)
 - Unfolding 3D / 2D module when importing the CAD parts



Fume and dust collector system

Fumes and dust created by laser cutting need to be collected.

Linacut can be delivered with a dust collector with high performance cartridge filters to allow a W3 certification (efficiency 99.999% with 0.5 µm particles).

Flameproof enclosure is required for aluminium cutting.

When available existing centralized factory vacuum system may be used.



Working mode

- Continuous mode : cutting during sheet metal movement.
- Static mode : stop sheet metal in order to reach high accuracy.
- Sheet loading (instead of coil) from slat conveyor end.

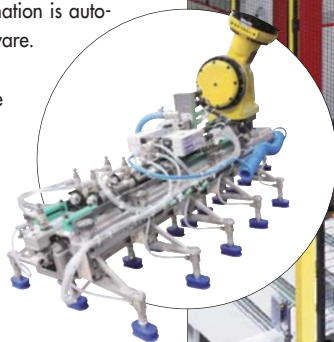
PART UNLOADING AND SORTING

Automatic pick up

As a secondary benefit of our “patented continuous laser coil cutting”, slat conveyor continuously drives cut parts out of Linacut area for manual or automatic pick up. Accuracy of slat conveyor transfer is the key for quality off loading and stacking. Parts position on slat conveyor is automatically recorded in the system to give accurate pick up position and orientation to the robot. This information is automatically generated by nesting software.

Pick up is achieved in tracking mode for continuous soft handling and to avoid scratches.

Scrap ejection is automatic, slugs falling down into a bin at the end of slat conveyor.



Customized gripper



Automatic and manual configuration



6 axis robot for basic stacking



7 axis robot for multiple stacking positions



Gantry system for Taylor made part collection organization



Manual handling



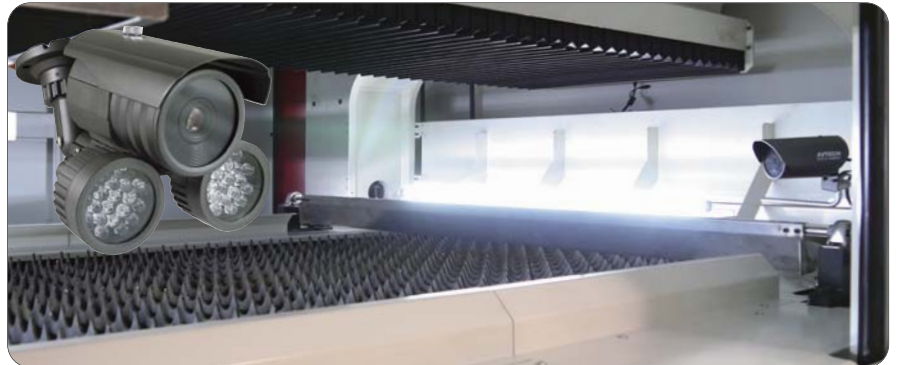
Part sorting on shelves



Part sorting on shuttle tables

Camera

Live viewing of cutting process and recording machine stops.



Scrap conveyor

Special powered scrap conveyor dedicated for laser cutting applications can be added along with the Linacut machine to collect both scraps and skeleton bits. Scraps and skeleton go into a bin.



Marking unit

Different marking solutions can be added along in the line such as :

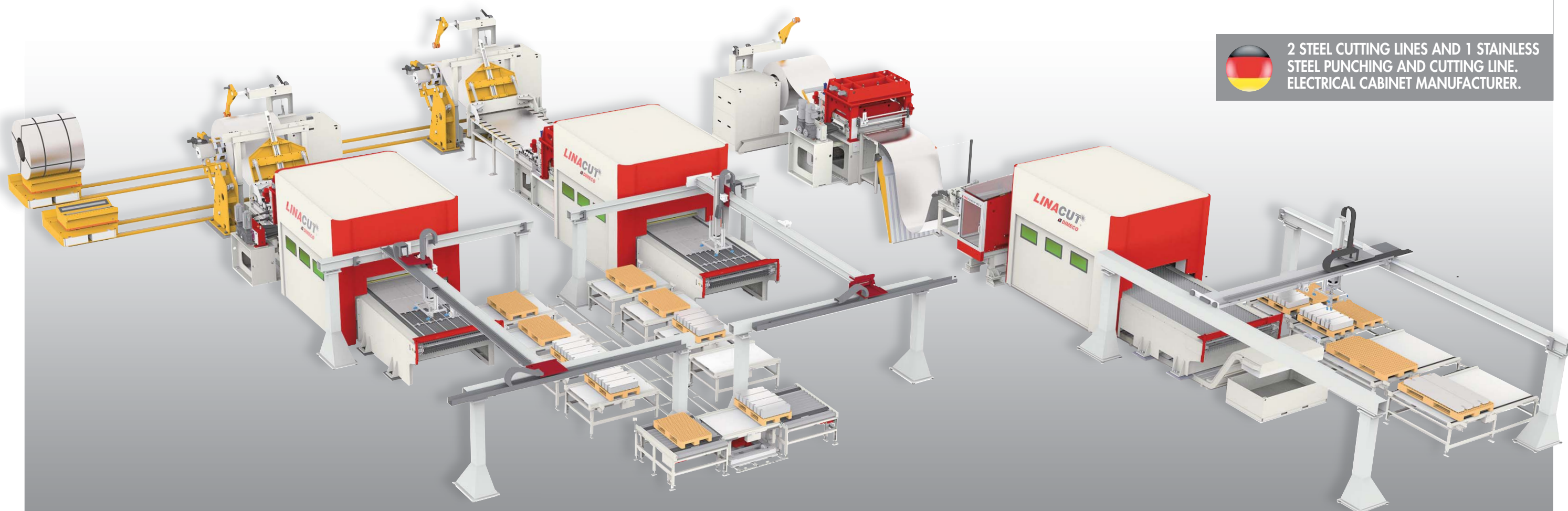
- inkjet
- laser marking
- dot peen



COMPLETE LINE MANUFACTURED BY DIMECO



2 STEEL CUTTING LINES AND 1 STAINLESS STEEL PUNCHING AND CUTTING LINE. ELECTRICAL CABINET MANUFACTURER.



Thanks to its wide press feed line range, Dimeco gets his own knowledge of coil handling and leveling. We are able to match any material specification and any coil size, using our home made equipment. Therefore, Dimeco offers turnkey systems for coil processing, with all equipment from one single source.

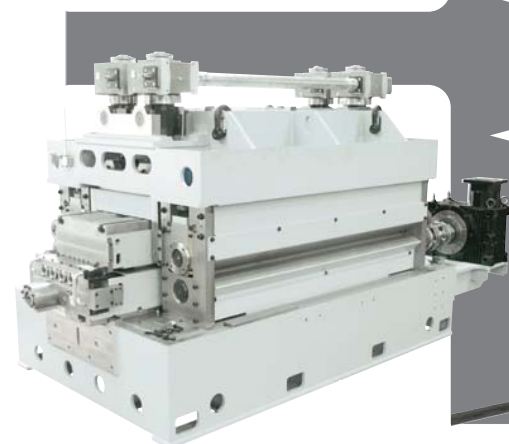
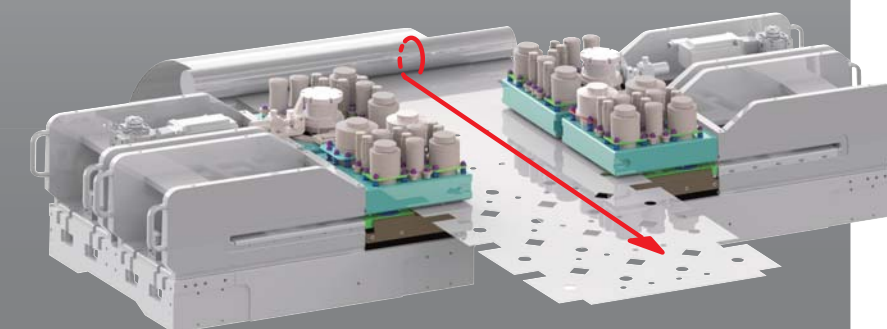
Single/dual uncoilers

Dimeco strong engineering department allows to match many coil line configuration as well as part sorting solutions to comply with customer factory needs and environment.

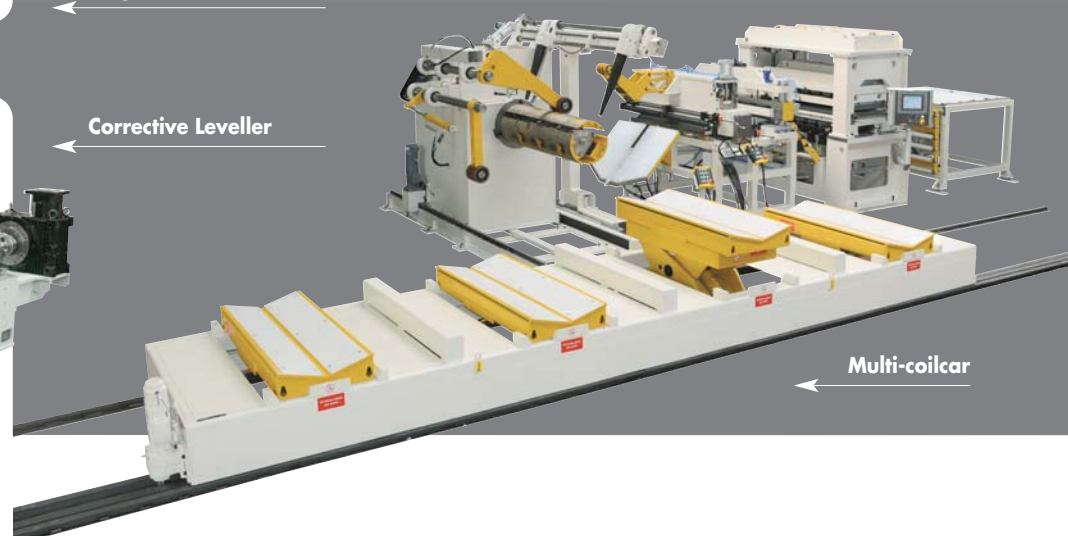
Combo laser-punch

A standard coil fed turret punch press (Linapunch) or a dedicated punching station is located before the laser cutting area. It enables to perform either forming or punching operations (punching can be faster than laser cutting, especially on thick material)

Dimeco long lasting experience in punching will allow us to find the best relevant solution to any customer application.



Corrective Leveller



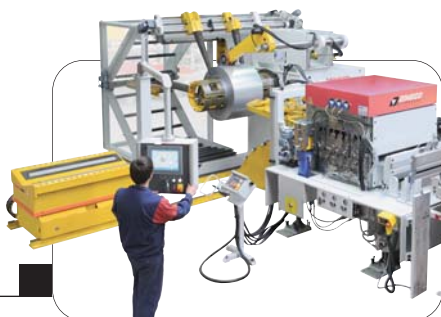
Multi-coilcar





MANUFACTURER SINCE 1957

Press feeding
lines



Flexible punching
of coil sheets



ROTOBLOC :
Quick change tool
and press safety
controls



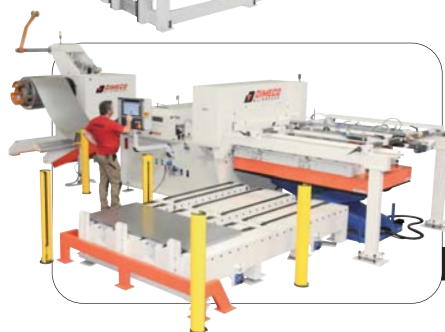
Roll-forming



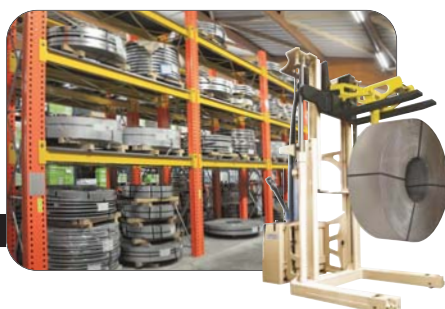
Loading
and storing
of tools
and molds



Cut to length lines



Coil loading
and storing



Continuous
laser cutting
of coil sheets



2, rue du chêne - Z.I. la Louvière - 25480 PIREY - FRANCE

Tél. +33 (0)3 81 48 38 00

Fax +33 (0)3 81 48 38 28

contact@dimeco.com

www.dimeco.com