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Technical and commercial proposal: IVE 200104

Slitting Line 1250mm / 8T / 0,4 ÷ 1,5 mm / / INCLUSIVE Tooling.

Dear sirs,

We are pleased to submit you our best quotation for the supply of the following equipment in according to your request.

This offer was prepared expressively for you, but many information depends of your choice and then, if you agree our cooperation, we can organize a meeting in your office or plant to discuss all related issues of your production and factory.

I would like to explain that we do not want just to sell you the machines, but also to help you in your business.

All the commercial information, features and technical specification is described in the following pages.

We hope that this quotation might find your interest and we remain at your complete disposition for any other information, both on technical and commercial point of view that may come form your analysis of this proposal.

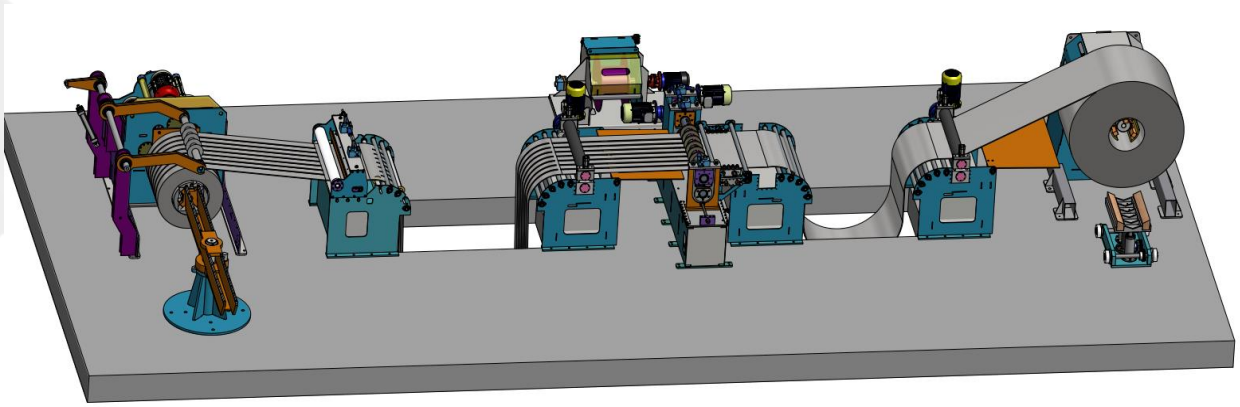
Looking forward to your kind response we take the opportunity to express you our best regards.

Yours faithfully,

on behalf of Tecno Srl

SUMMERY

1. SCOPE OF SUPPLY



A collection of machines connected to each other to form a production line dedicate to the cutting of Coils in narrow Stripes and rewinding them for further processing. Longitudinal cutting line special designed for Inox steel CRNGO/CRGO. Characteristic of the material to be worked: inox steel with thickness of material from 0.4mm – 2.00 mm and different magnetic quality.
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The alignment of the coil plate with the circular shear can be very difficult using small material thickness. There fore we propose a solution with e a shear entry loop to make this much easier and – very important - to avoid any tension and/or shock from the De coiler towards the shear. All this to facilitate the work of the shear for better cutting results Working Speed: The proposed line has a real speed of 50mt / min

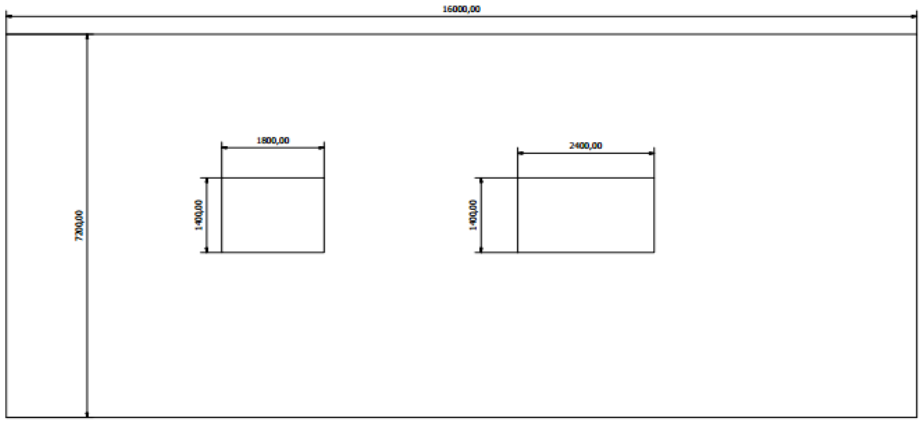
Main Technical Data:

Working Material	Inox Steel
Material Thickness	0.40 -:- 2.00 mm
Material Max resistance	200Kn/mmq Destinazione : Tubi saldati TIG in acciai austenitici, leghe ad alto contenuto di nichel. Diametro esterno da 16 a 63,5 mm, spessori da 0,4 a 2.00 mm.
Max. Coil width	1250 mm (table 1350)
Min Coil width	500 mm
Max Coil weight	8 Tonn (max 10 tonn)
Internal Coil dia.	Ø 500 ***(600mm with accessories)
External Coil dia.	Ø 1600
Paper	Recoiler with anime in paper in entry Decoiler with blades in output
Type of Job	cutting of Coils in narrow Stripes
Line speed	50mt/min (the limit is the paper)
Working direction	To be defined right to left also left to right

Productivity (indicative / example):

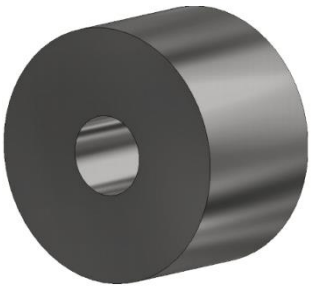
Material	Coil 10 ton / 1000 width / length 1000m
Line speed	50m/min
Time to Load and feed Coil:	20 minutes
Time to cut no. 1 coil:	10 minutes (incl. speed ramp up and down time)
Tooling change per day:	none
No. of coils cut in 8 working hours:	16
Production per day (1 shift)	8 coils
Production per year 200 days)	1600 coils

2. LINE INSTALLATION SPACE, FOUNDATIONAND PITS.



The line occupies a surface of approx. 18000 x 8000 mm. Most parts of the line will be installed ON floor with low or none foundation work but canals for the Hydraulic, pneumatic and electrical connections should be foreseen.
The first Pit has ha minimum dimension of 1800 x 1400 mm and a deep of 2000mm.
The second (compensation) Pit should be 2400x1800mm and a suggested deep of 6000mm (can be reduced to 4000mm) to guaranty the correct up winding of the strips.

3. TECHNICAL SPECIFICATION OF FEED MATERIAL

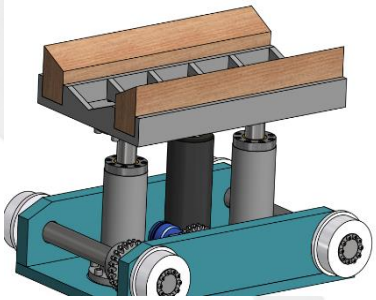


Max external diameter 1600 mm
Hole diameter 500/600 mm

Max width 1250 mm

Weighing up to 8 Ton
With paper

4. COIL ENTRY CAR 1000 - 10 TON – ON FLOOR TYPE



Main Feature and Function:
Together with the De coiler, part of of the de coiling group, which is powered by a dedicated Hydraulic pump.

On floor type, with low foundation work needed. Heavy welded and machined steel structure.

Translation Powered through a hydraulic motor permitting movements even at slow speeds.

Lifting of 70 mm through hydraulic cylinder bore of 125mm.

Hoisting speed 10 cm/sec

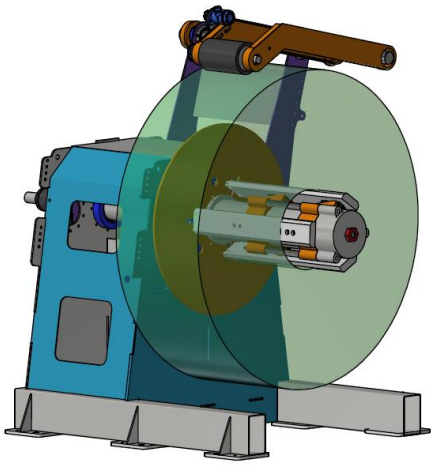
Rotation group through ground steel bars scrolling on replaceable bronze bushings.
Transfer speed 5 m/Min

Induction-hardened steel wheels with lock on the hubs through expanding joints The bearings are positioned inside the structure to guarantee their solidity.

Saddle made of steel with a wooden or plastic inserts if loading coils of sensitive material.

The car can be equipped with closed Tracks to ensure the stability of the load over all directions.

5. DE COILER 1250 - 10 TON



Main Feature and Function:

Together with the Coil loading car, part of of the de coiling group, which is powered by a dedicated Hydraulic pump.

Realized with expansion on wedgeswith hydraulic cylinder Rear expansion and Rotary Oil Joint.

Motorized through gearboxes where the first is epicyclic and the following of composite gear type. located inside the Structure with an auto-braked motor controlled by inverter which allows all its regulations. The connected brake acts either as a brake and emergency.

The welded steel frame is composed with the modern system of joints and then worked through the most modern Laser cutting technology insuring high stability.

A central shaft produced through the use of centrifugal pipe worked to accommodate the Bearings.

Oscillating roller bearings for the front support are installed in a docking station and fixed on the structure.

Hydraulic controlled mandrel with 3 arms open by levers and rotation trough AC Motor 11 kw.

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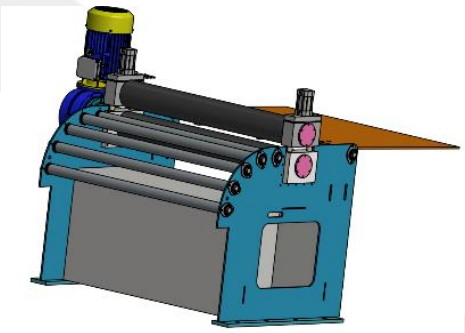
Il rullo a Banana Serve a Distendere il materiale prima del suo avvolgimento

6. ENTRY PINCH ROLL 1250

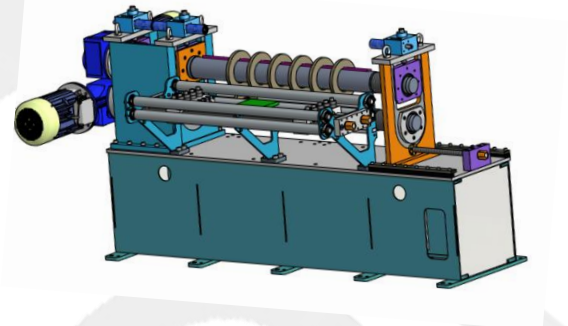


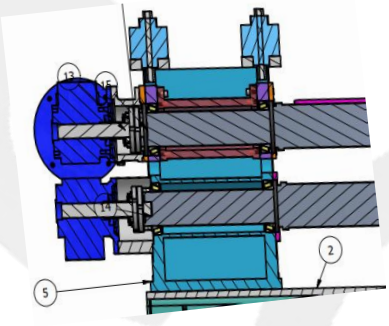
Main Feature and Function:
Solid Steel Structure, where a group of pinch rolls is mounted.

Two superimposed rubber rolls, controlled by electrical motor are used to create e light tension during the down coiling process to avoid damages on the material surface.

Motorizzed with AC Motor 11 Kw

7. CIRCOLAR SHEAR 1250





Main Feature and Function:

Dowel operated type.
The circular cutter for cutting thin sheet metal is designed for easy and simple operation.

The Arbour is realized in steel 18NCD5 with deep nitriding and diameters is 200 mm.

The maximum external diameter of the Blades is 360mm and the minimum can be down to 300mm!

Motorized by groups of gear motors electrical synchronized.

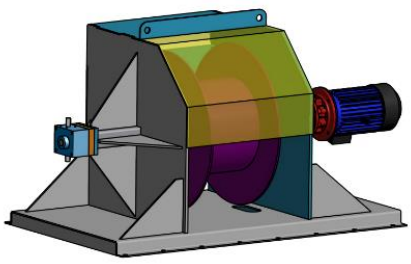
The metal carpentry structure is realized by knit folded sheet to ensure excellent stability and the head of thick sheet metal structures are machined and welded to be strong.

The vertical movement of the arbours are guaranteed by TPN screw jacks.

The supporting arbours and gusset have 0 game due a dynamic system in composite material that holds them down in the same position compensating and cancelling all games.

The opening and closing of the head is manual as all other adjustments.

8. 2 LATERAL SCRAP WINDERS (LEFT & RIGTH)

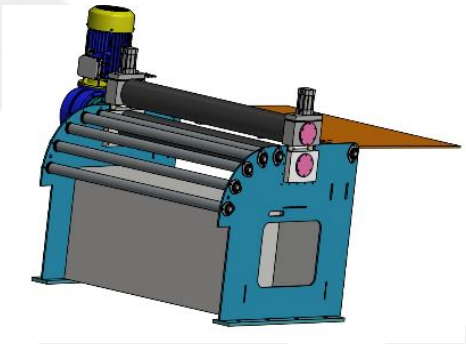


Main Feature and Function:
Rewinding the lateral scrap material on motorized re coilers made of steel.

The tangle will be pressed and compacted by a pressure roll.

The Lateral scrap winder can be opened for the binding and discharge of the scrap coil.

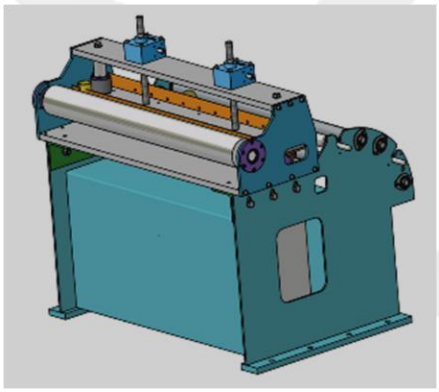
9. PIT PINCH ROLL 1250

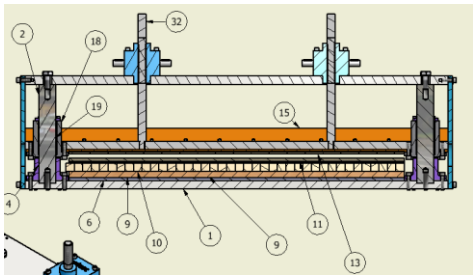


Main Feature and Function:
Same solid Steel Structure as the entry pinch roll unit.

Installed behind the circular shear with the difference to the entry pinch roll unit that the rolls are made of steel and the vertical movement is controlled by hydraulic jack.
The table is elttric with vertical movement by motor

10. FELT PRESS 1250





Main Feature and Function:
The pre separators arbours are attached to the structure of the felt press.

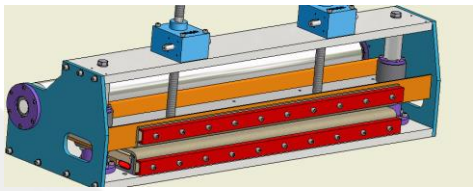
The press itself has a keyboard and plastic material that is raised for air pipes to ensure a proper shot at the material which are raised by air pipes.

The pressure of the tubes is adjusted by means of a pressure regulator. The Press Hat placement and geometry are controlled through worm screw jacks.

The outgoing steel roller creates a winding angle to stabilize the tapes.

With the appropriate felt, made in wool with drool twisted hair we are able to guarantee a defined material max of 300gram/mmq **

** actual measurements made on our machines



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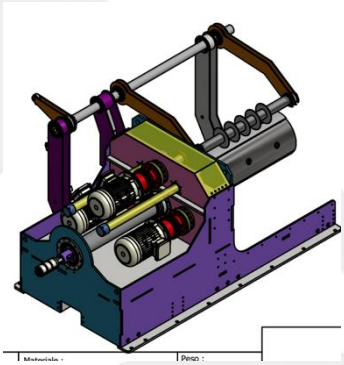
with stainless steel and better not to work too much with the felt press so it is installed in the Pinc Rolls group ahead

the press with rollers having a diameter of 300 350 mm with a motor that acts as a brake to slow down and apply greater tension to the belt

11. RECOILER 1250- 10 TON



Main Feature and Function:

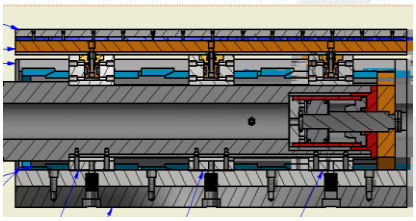
Steel structure Frame is realized by precision laser cut parts and all assembled at joints are welded.

The power system is based on the innovative MULTIDRIVE concept. That is, a set of three groups motors and gears with a small size that act together on a single shaft instead of just one big motor and gear.

Mandrel:

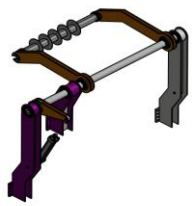
Main Feature and Function:
Expanding on wedges and pliers on fixed tiles

The wedges are made from interlocking, induction hardened, anchors on a seat of the wedges for expansion and fixed bars The cylinder is placed on the end of the spindle to avoid having auctions for reference The clamp which in this case and driven by three hydraulic cylinders obtained from cruises



The mandrel is safe because the backing plans to open Chuck wedges cones will rest on horizontal planes. In this way, also in the absence of hydraulic pressure the mandrel cannot move and remains firm in position.

Separator Arm

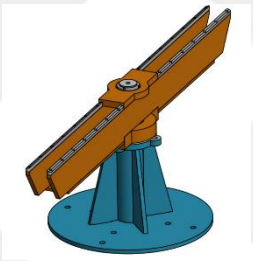


Main Feature and Function:
Is connected to the re coiler housing. The spacer disk is in contact and guiding the strips. The moving and pressure of the separator arm is regulated by a hydraulic oil system. The same system is used also for manual operations.

Paper decoiler
Albero motorizzato con mandrino espansibile ad aria Frenato mediante freno pneumatico

Primo rullo di svolgimento di tipo a banana e 4 rulli di di passaggio di tipo allargatori con spirale opposta
Il secondo ed il terzo rullo ilmateriale forma una tavola piana dove il materiale transita da delel lamette regolabili e si taglia a striscie volute
Sono previsti anche 10 cavalletti con mandrino conico per il riutilizzo della carta da linea tubo ..

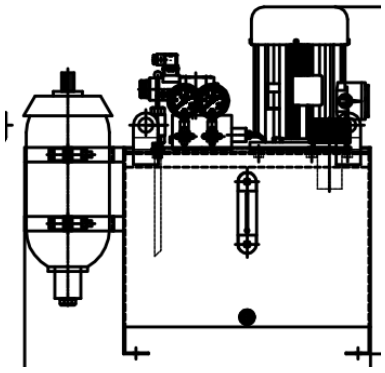
12. TURN STYLE 1250 - 10 TON



Main Feature and Function:
Solid Steel Structure, machine cut and welded.

The movements are complete manual controlled. The rotations are based on top and down conical bearings, with stop at the four main 90° positions. The top bars are realized with treaded steel.

13. HYDRAULIC SYSTEM



Main Feature and Function:
Based on the needs of our customer we propose a simple but revolutionary system.

The central hydraulic unit is driven by an Inverter who controls the flow thresholds optimizing the energy consumption.

A pressure tank with a small, but sufficient, capacity guarantee the constant pressure in the system and avoid dropping of pressure during the start-up of the pump.

14. ELECTRICAL SYSTEM

Main Feature and Function:
Control of all electrical motors due inverters for an efficient motor protection.

This can be handled by a simple plc with a small control panel for the system control and error detection of the machine. No complicate or expensive controls are need.

Due to the use of advanced electrical and hydraulic systems the system reaches the energy class A. As by our knowledge, no plant produced until today has such energy saving solutions which are the best actual available on the market. Also some services of the system will be set in stand-by when not needed like the Hydraulic unit pump, Motor fans (controlled and activated on there actual temperature) and so on. The power is activated only when and where actually needed during operation.

15. TOOLING

The following set of tooling of 625 pieces will be supplied with the line.

Tooling for the circular cutting shear

	Cutters diam. 360 x200x15 made in HSS Metal // 0.1µmm	25x600	15000
	Rubber Ring 360x200x15 Made with natural rubber 80 Shore	25x280	7000
	Distance ring 50mm Made from Pipe //0.1µmm	20 x 110	2200
	Distance ring 40 mm	20 x100	2000
	Distance ring 30 mm	20 x 90	1800
	Distance ring 25 mm	20 x 90	1800
	Distance ring 20 mm	20 x 90	1800
	Distance ring 9.5mm	20 x 90	1800
	Distance ring 2.80mm Made form steel sheet 0.1µmm	20 x110	2200
	Distance ring 2.30mm	20 x 110	2200
	Distance ring 1.80mm	20x110	2200
	Distance ring 1.00mm	20x110	2200
	Distance ring 0.60mm	20x110	2200
			44400

Pre – Separator Tooling

Pre separator disc 120x60x3 Made form steel sheet C45 nitrided	50x70	3500
Distance ring made in Nylon dia. 60 x 80 Thickness 50mm	50 x30	75
Distance ring made in Nylon dia. 60 x 80 Thickness 40mm	50x30	150
Distance ring made in Nylon dia. 60 x 80 Thickness 32mm	50x30	150
Distance ring made in Nylon dia. 60 x 80 Thickness 25mm	50x30	150
		4100

Separator Disc 200x120x3 Made form steel sheet C45 nitrided	25x150	3750

Distance ring made in Nylon dia. 160 x 120 Thickness 50mm	20x60	1200

Distance ring made in Nylon dia. 160 x 120 Thickness 40mm	20x60	1200

	Distance ring made in Nylon dia. 160 x 120 Thickness 32mm	25	1200
	Distance ring made in Nylon dia. 160 x 120 Thickness 25mm	25	1200
			8550

16. SECURITIES

The line matches the European security standards as:

- EN ISO 12100. Securities of the machinery
- General Principles of technical design
- Risk evaluation and reduction.

All necessary security and protection barriers are made by aluminium profile and protection metal net matching the respective norms. Each barrier will be supplied with a specific evaluation card and ID Label.

17. COMPONENTS

The Materials and the components used for the production of the line are purchased in Italy by primary international companies corresponding to the European ISO standard.

Also all parts are machined and worked in Italy.

18. DOCUMENTATION

The line is a project of Tecno Srl. and it will be supplied complete with all assembly drawings and maintenance information. Including electrical schematics as all instruction that serves for the functioning. Consigned in electronic format and English as standard.