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ROLL FORMING AND COIL PROCESSING EQUIPMENT
EUROPEAN QUALITY AT COMPETITIVE PRICES

****WE WELCOME YOU TO VISIT OUR FACILITY AT ANY CONVENIENT TIME****

Technical-commercial quotation

We offer for your consideration this quotation on a Cut-to-length and Slitting line for processing coil metal.
All equipment is designed and manufactured by Ruscana Engineering Group.

Cut-to-length and Slitting line for processing coil metal with thickness 0,5 – 4,0 mm and width from 1250 mm up to 1600 mm

1. Field of application
Cut-to-length and Slitting line for processing coil metal with thickness 0,5 – 4,0 mm and width from 1250 mm up to 1600 mm, hereinafter referred to as "Equipment", is intended for longitudinal and transverse cutting of coil metal.

2. Raw material requirements:
Light-gauge galvanized steel with polymer coating: polyester, plastisol
Zinc coating with range from 100…275 g/m²;
Yield strength 280…350 N/mm²;
Coil width – 1250 mm….1600 mm;
Coil thickness – 0,5 mm…4,0 mm;

3. Metal slitting parameters:

3.1. Slitting of metal with thickness 0,5 mm…4,0 mm

Strip width, S, mm	**Slitting speed, variable, m/min**	**The maximum quantity of cuts, pcs**
0,5	40 (80 – option)	30
0,7	35 (75 – option)	25
1,0	35 (70 – option)	20
1,5	35 (70 – option)	18
2,0	30 (65 – option)	16
3,0	20 (65 – option)	12
4,0	20 (60 – option)	6

3.2. Transverse cut, metal thickness 0,5 mm…4,0 mm

- Sheet length – 500 mm….3000 mm.
- Cutting accuracy ±1,0 mm with product length 2000 mm.

The line allows to slit and rewind coils completely only with the presence of a loop-storage pit with H (deep) - 5 meters….8 meters, L - 4 meters, S - 2 meters (loop-storage pit is located between the slitting module and the tensioner, is necessary to compensate the slacking of the metal strips in the result of uneven winding and gage interference of the rolled metal).
The line is not intendant for rewinding metal coils with width more than 600 mm/

4. Line configuration:

№	Description	UOM	Standard
1	Able to work in adjustable, manual or automatic mode		yes
2	Installed power capacity,approximately	kW	145
3	Maximum cutting speed	m/min	40 (80 – option)
4	Supply voltage at frequency of 50 Hz ± 0.4Hz	V	380
5	Dimensions (LxWxH), approximately	mm	26000x11000x25000
6	Weight, approximately	kg	70000
7	Required operation personnel	persons	3

5. Line configuration

1. Decoiler;
2. Coil car for decoiler;
3. Coil car for recoiler;
4. Feeding-broaching unit;
5. Straightening machine;
6. Protective film application module;
7. Slitting unit;
8. Slitting knives changer (option)
9. Table;
10. Trim recoiler (left);
11. Trim recoiler (rigth);
12. Guillotine;
13. Hydraulic receiving table;
14. Brake;
15. Recoiler;
16. Automatic Control System (ACS).

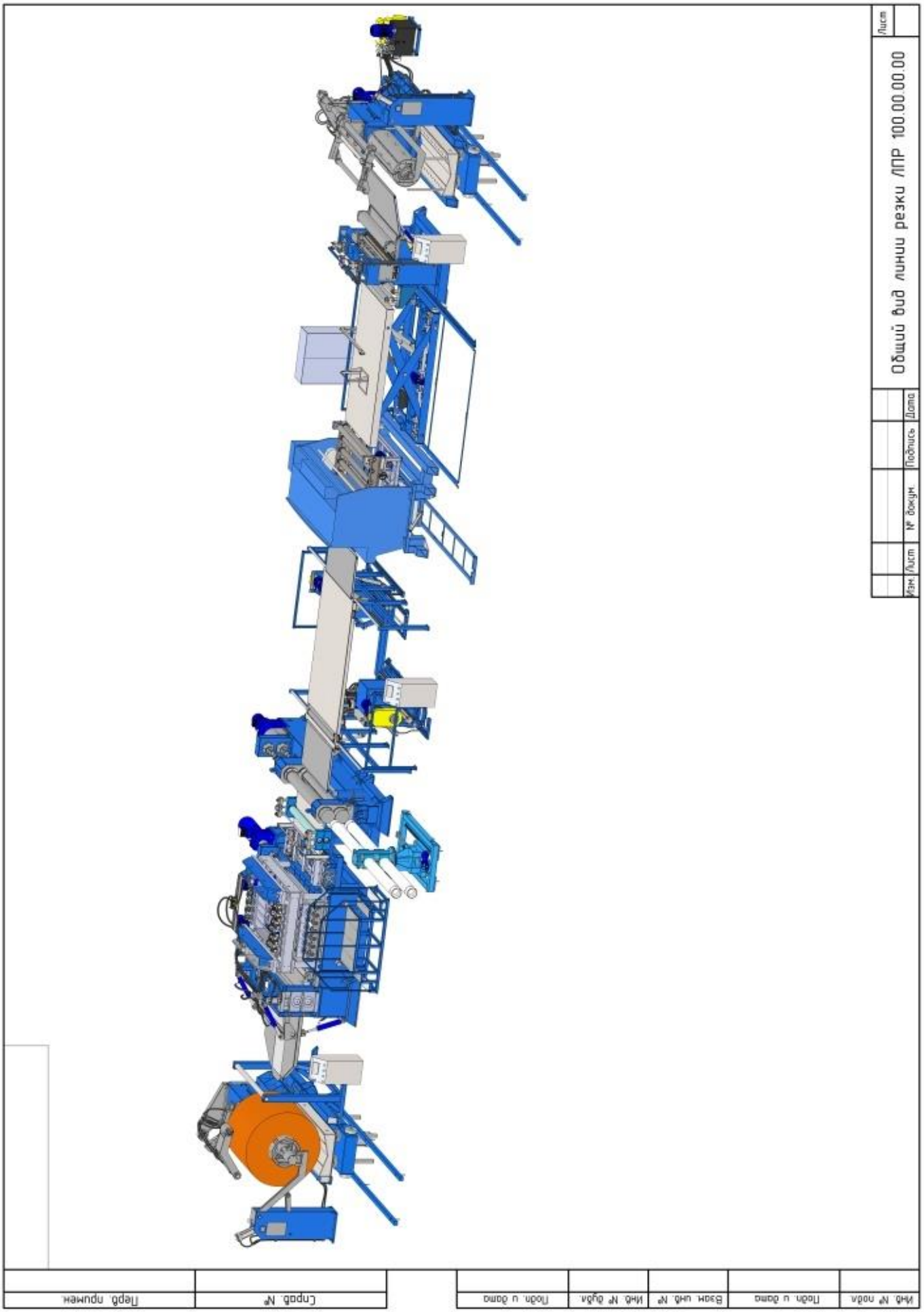

FIg. 1. General layout of the cut-to-length and slitting line for metal thickness 0,5–4,0 mm and width from 1250 up to 1600

6. Equipment Specifications

№	Description	UOM	Parameters
1	**Decoiler**		**General view, fig. 2**
1.1	Type		cantilevered, with wedge mandrel expansion mechanism of shaft
1.2	Swing away support block		yes
1.3	Drive of the shaft rotation (electric motor with brake)		hydraulic
1.4	Operating mode		Automatic, manual, reverse
1.5	Lifting capacity, no more than	kg	15000
1.6	Mandrel expansion range (coil ID 600 mm)	mm	570…620
1.7	Coil width	mm	1250.…1600
1.8	Mandrel expansion/clamping mechanism		hydraulic
1.9	Clamping unit		hydraulic
1.10	Automatic correction system of the position of the decoiler's shaft relative to the axis of the line		hydraulic
1.11	Dimensions (LxWxH), no more than	mm	4200x2800x2300
1.12	Weight, no more than	kg	6800
2	**Coil car**		**General view, fig. 3**
2.1	Lifting capacity, no more than	kg	15000
2.2	Working stroke (lifting)	mm	630
2.3	Lifting drive		hydraulic
2.4	Motion drive		electromechanical
2.5	The length of the rails (taking into account the installation for the decoiler or recoiler)	mm	4500
2.6	Coil width	mm	1250 - 1600
2.7	Dimensions (LxWxH), no more than	mm	2000x1100x2100
2.8	Weight, no more than	kg	3000
3	**Feeding-broaching unit**		**General view, fig. 4**
3.1	Clamping drive		hydraulic
3.2	Feeding drive		electromechanical
3.3	Dimensions (LxWxH), no more than	mm	4800x2700x1950
3.4	Weight, no more than	kg	7000
4	**Straightening machine**		**General view, fig. 5**
4.1	Quantity of the straightening shafts	pcs	13
4.2	Dimensions (LxWxH), no more than	mm	5900x2600x2500
4.3	Weight, no more than	kg	11000
	Note: Straightening machine is designed for correction of the metal curvature in the longitudinal direction of the sheet and is not intended to correct other deformations. Metal coil curvature is formed as a result of winding metal into the coil.		

5	**Protective film application module**		**General view, fig. 6**
5.1	Feeding rubberized shafts in quantity of 2 pcs		yes
5.2	Maximum weight of protective film roll, no more than	kg	75
5.3	Dimensions (LxWxH), no more than	mm	2000x1000x1700
5.4	Weight, no more than	kg	1400
6	**Slitting module**		**General view, fig. 7**
6.1	Type of the knives		Disk knives (with a set of remote bushings)
6.2	Quantity of knives, remote bushings		Item that should be specified
6.3	The minimum width of the strip	mm	30
6.4	Minimum cut-off side edges	mm	15
6.5	Cutting accuracy with thickness 0,5 mm…1,0 mm	mm	± 0,1
6.6	Cutting accuracy with thickness 1,0 mm…2,0 mm	mm	± 0,15
6.7	Cutting accuracy with thickness 2,0 mm…4,0 mm	mm	± 0,30
6.8	Dimensions (LxWxH), no more than	mm	5700x840x1770
6.9	Weight, no more than	kg	6100
7	**Slitting knive changer (option)**		**General view, fig. 8**
7.1	Dimensions (LxWxH), no more than	mm	4300x1200x1600
7.2	Weight, no more than	kg	1700
8	**Table**		**General view, fig. 9**
8.1	Dimensions (LxWxH), no more than	mm	4700x5200x1200
8.2	Weight, no more than	kg	1200
8.3	Note: Is intendant for broaching metal sheets or strips and guiding it to guillotine		
9	**Trim recoiler**		**General view, fig. 9**
9.1	Winding diameter, max	mm	900
9.2	Dimensions (LxWxH), no more than	mm	3000x650x1300
9.3	Weight, no more than	kg	1900
10	**Guillotine**		**General view, fig. 10**
10.1	Drive type		hydraulic
10.2	Metal thickness	mm	0,5…4,0
10.3	Dimensions (LxWxH), no more than	mm	3600x2900x2100
10.4	Weight, no more than	kg	7000
11	**Hydraulic receiving table**		**General view, fig. 11**
11.1	Stacking length	mm	from 500 up to 3000 (in automatic mode)
11.2	Lifting capacity of platform, approximately	kg/rm	1000
11.3	Table stroke	mm	450 (step by step lifting)
11.4	Table level	mm	150 below the guillotine knife
11.5	Motion drive		electromechanical

11.6	Lifting drive		hydraulic
11.7	Length of the rails	mm	4000
11.8	Dimensions (LxWxH), approximately	mm	3000x1500x1100
11.9	Weight, no more than	kg	2500
12	**Brake**		**General view, fig. 12**
12.1	Type		gap
12.2	Drive of the moving mechanism of the upper beam		**hydraulic**
12.3	Drive of the clamping machanism		**pneumatic**
12.4	Diameter of shaft-deflector	mm	235
12.5	Dimensions (LxWxH), approximately	mm	2200x2700x2100
12.6	Weight, no more than	kg	3600
12.7	Note: The brake serves for tensioning and ensuring a tight winding of the strips on the recoiler's shaft.		
13	**Recoiler**		**General view, fig.13**
13.1	Type		cantilevered, with wedge mandrel expansion mechanism of shaft
13.2	Swing away support block		yes
13.3	Lifting capacity, no more than	kg	15000
13.4	Mandrel expansion/clamping unit		hydraulic
13.5	Strips fixation mechanism		hydraulic
13.6	Coil width, no more than	mm	1600
13.7	Quantity of separators		The item that should be specified
13.8	Dimensions (LxWxH), approximately	mm	5000x2600x2300
13.9	Weight, approximately	kg	9000
14	**Automatic control system (ACS)**		
14.1	Hardware base Omron (Japan)		+
14.2	Controlled parameters: Rolling speed, quantity/length of end product, adjustment of the pauses of the technological cycle, production task, enter task with step of 0,5 mm		+
14.3	Interface: English, User-friendly		+
14.4	Indicators: General settings, error and emergency alarms		+
14.5	Control panel, 3 pcs.		
14.5.1	Dimensions (LxWxH) , approximately	mm	1000x600x1200
14.5.2	Weight, approximately	kg	120
14.6	Main power cabinet, 1 шт.		
14.6.1	Dimensions (LxWxH), approximately	mm	1500x1100x2300
14.6.2	Weight, approximately	kg	290

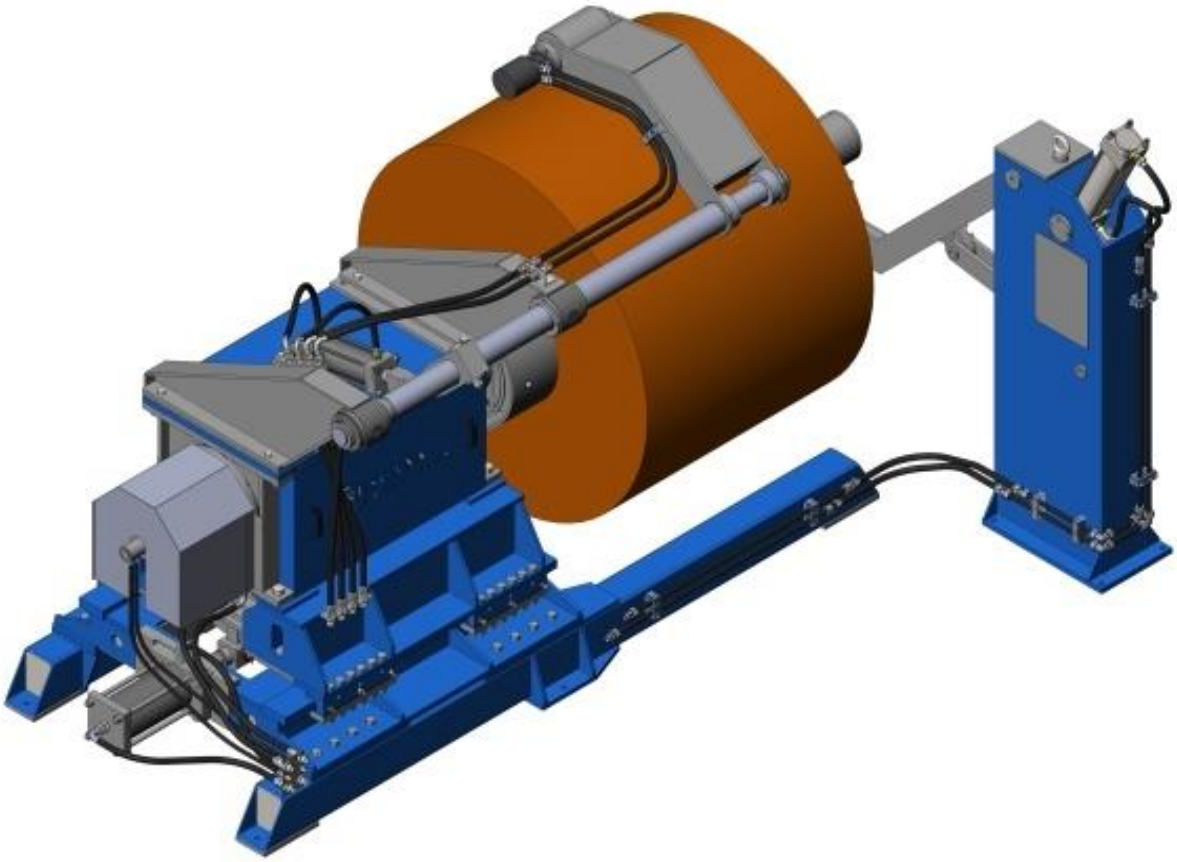

Fig. 2. General view of the decoiler

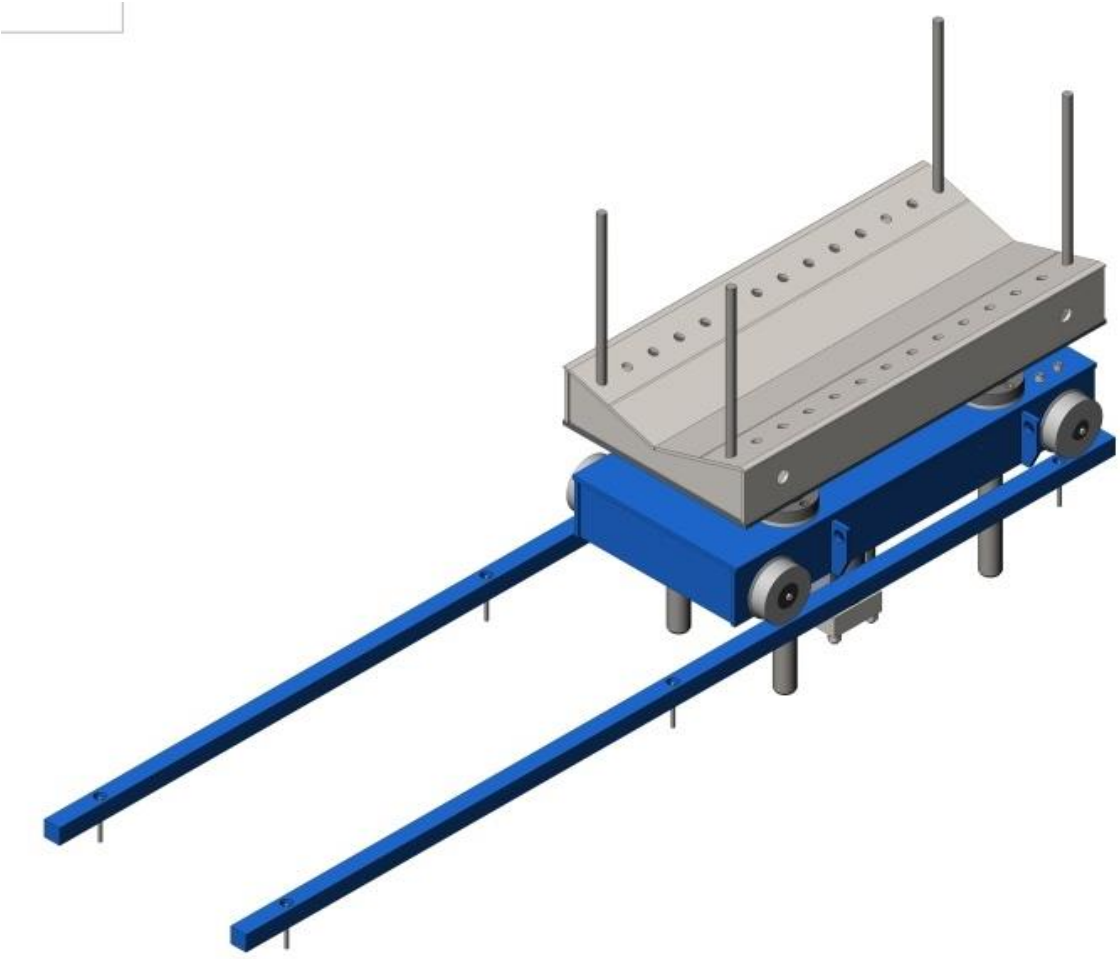

FIG. 3. General view of the coil car

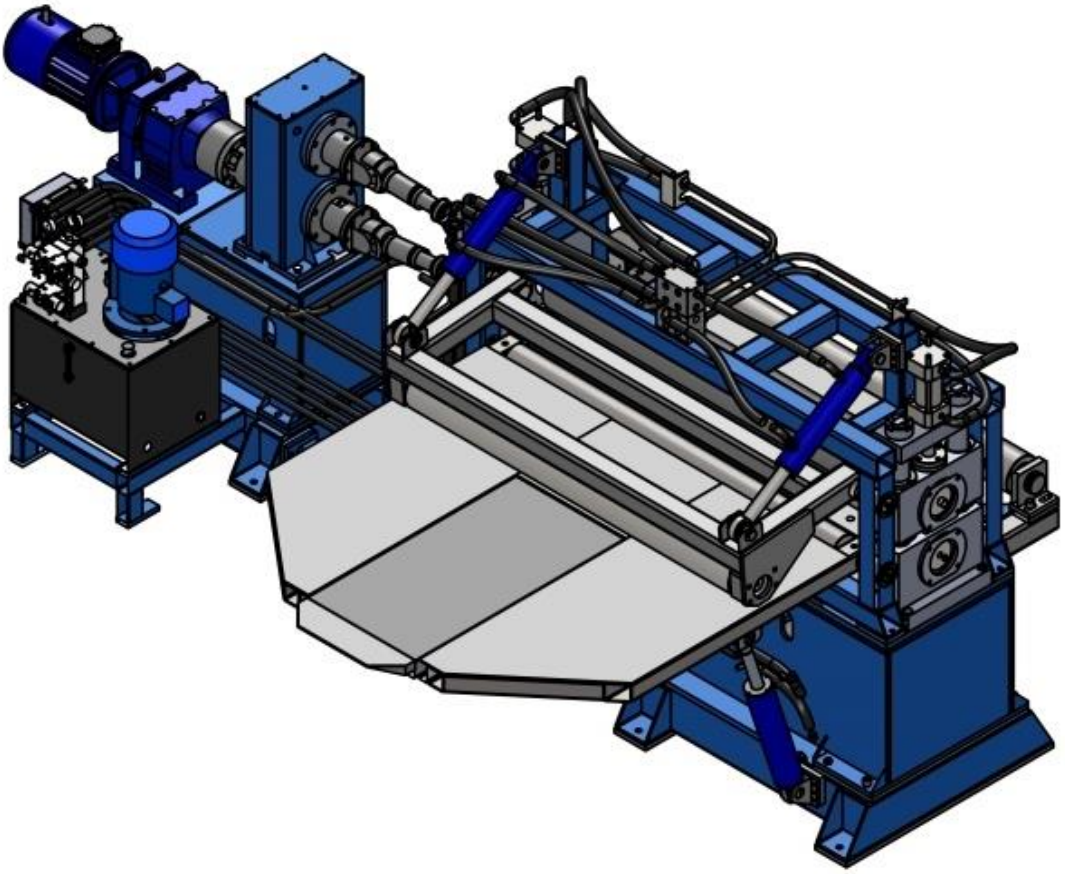

Fig. 4. General view of the feeding-broaching unit

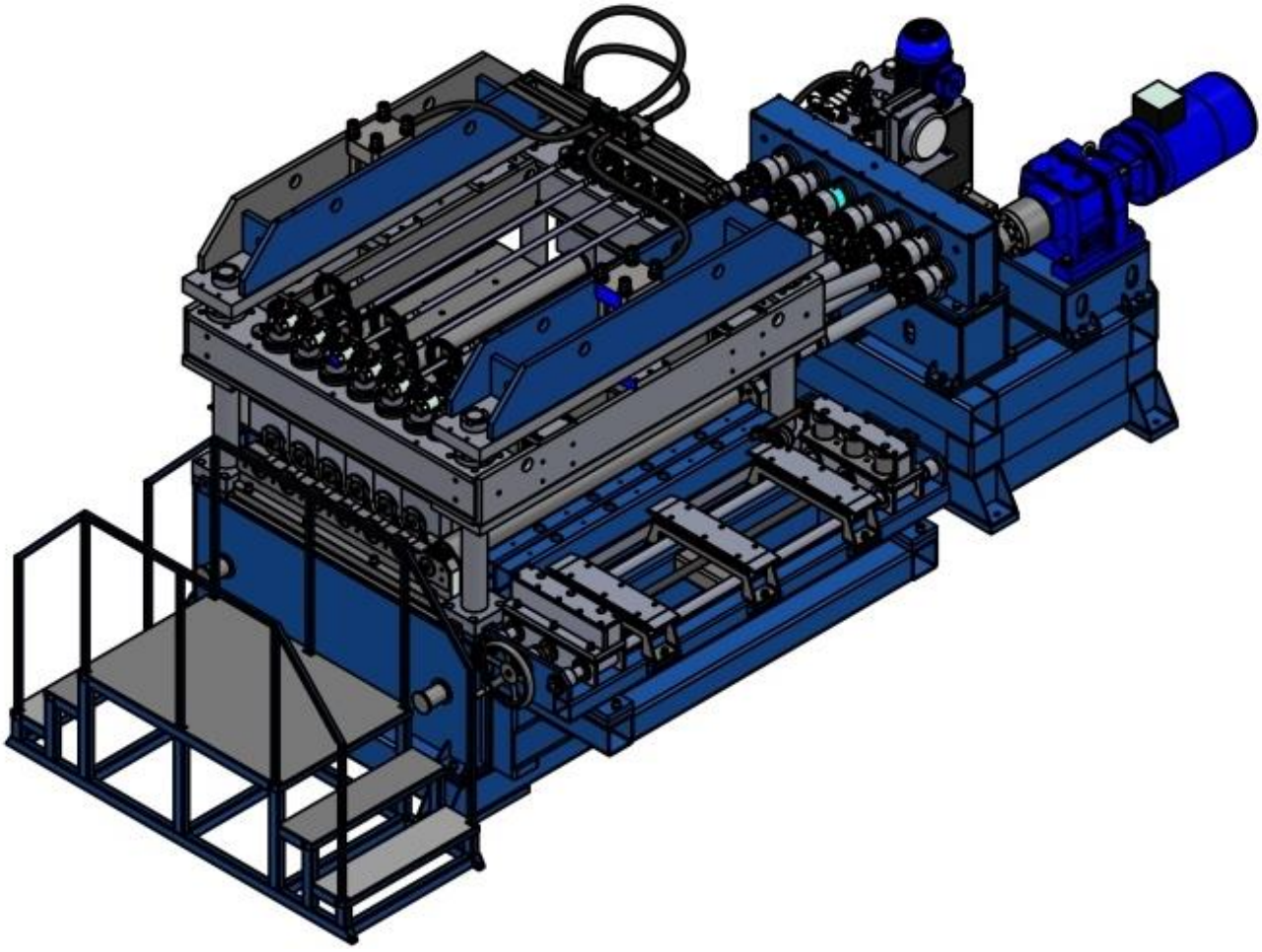

Fig. 5. General view of the straightening machine

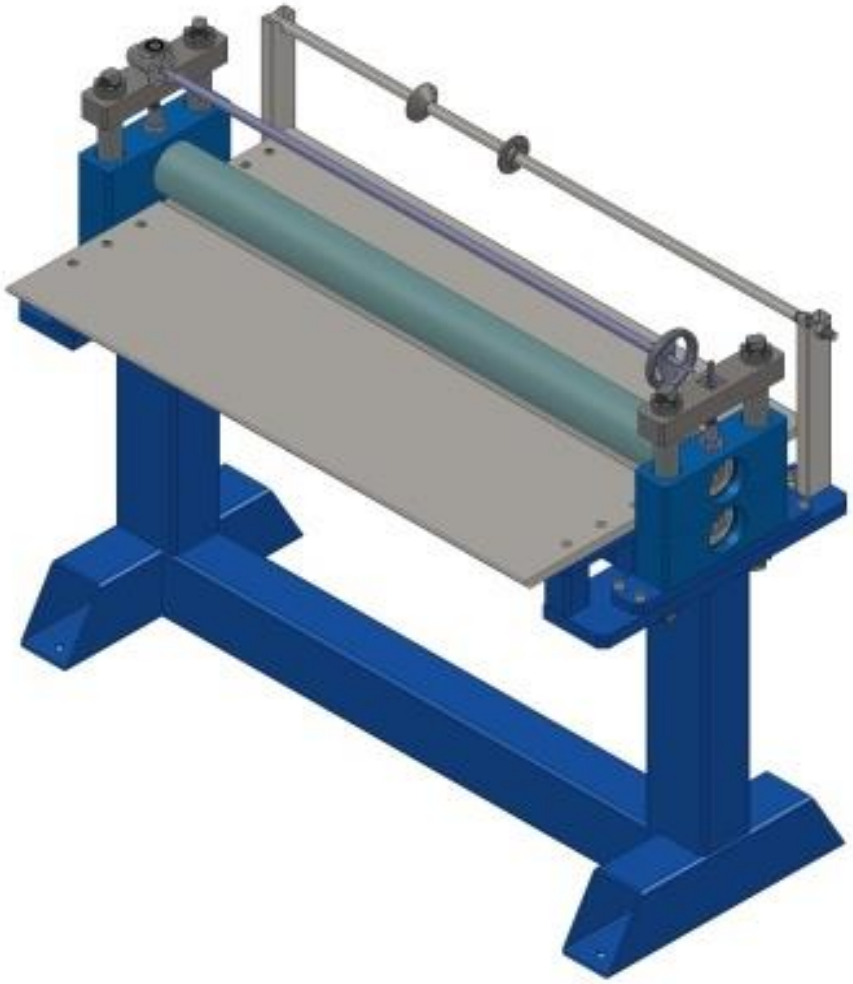

Fig. 6. General view of the Protective film application module

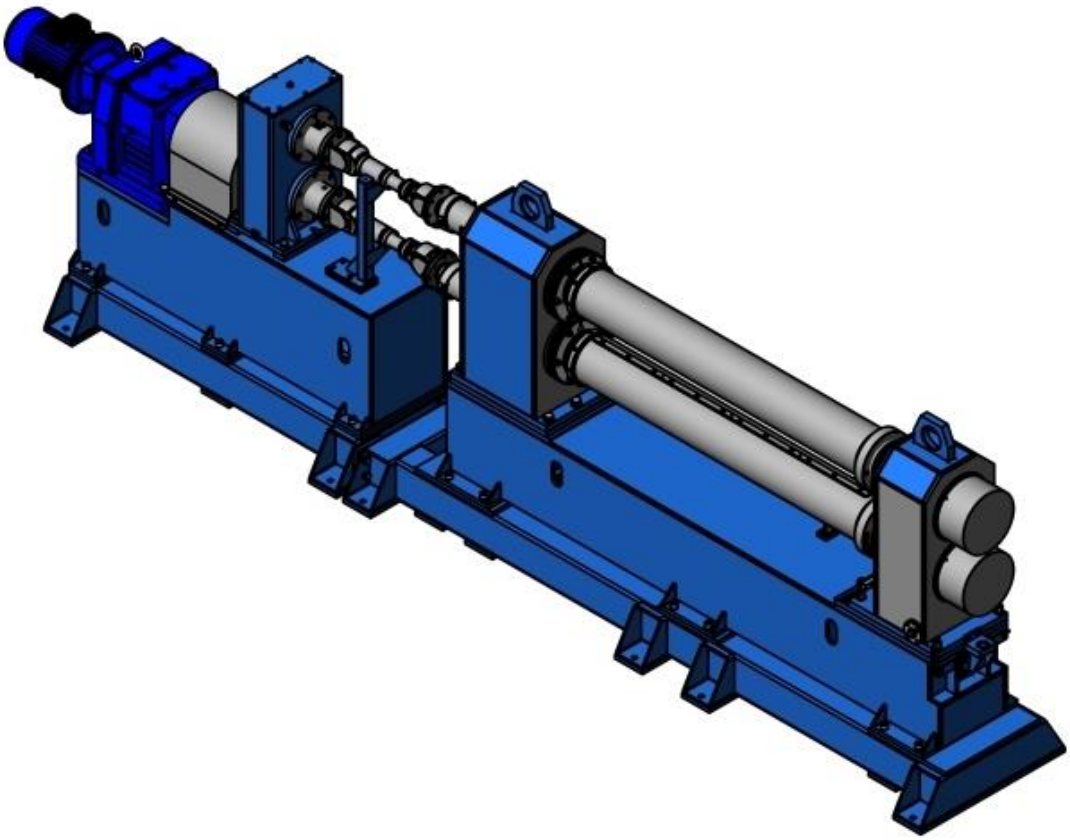

Fig. 7. General view of the Slitting unit

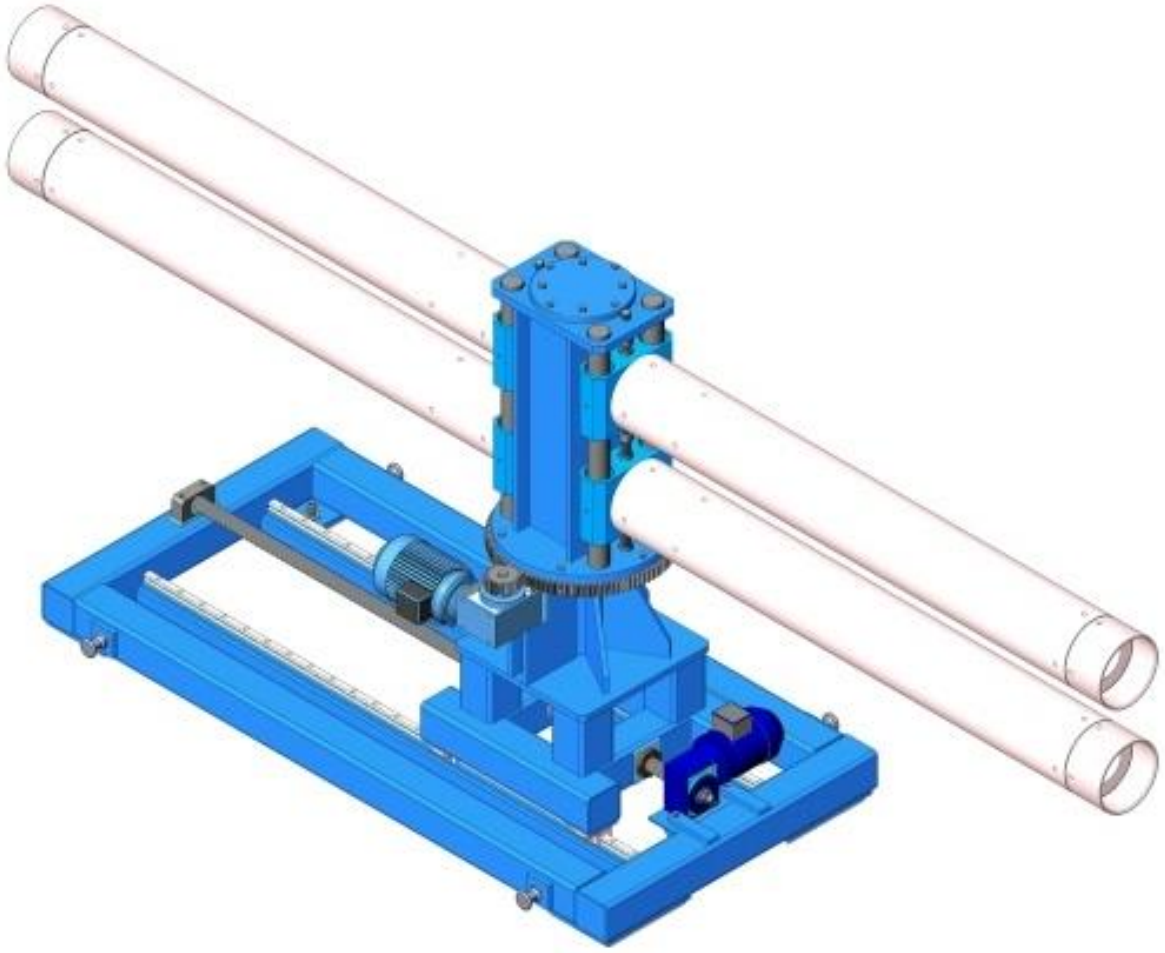

Fig. 8. General view of the slitting knives changer

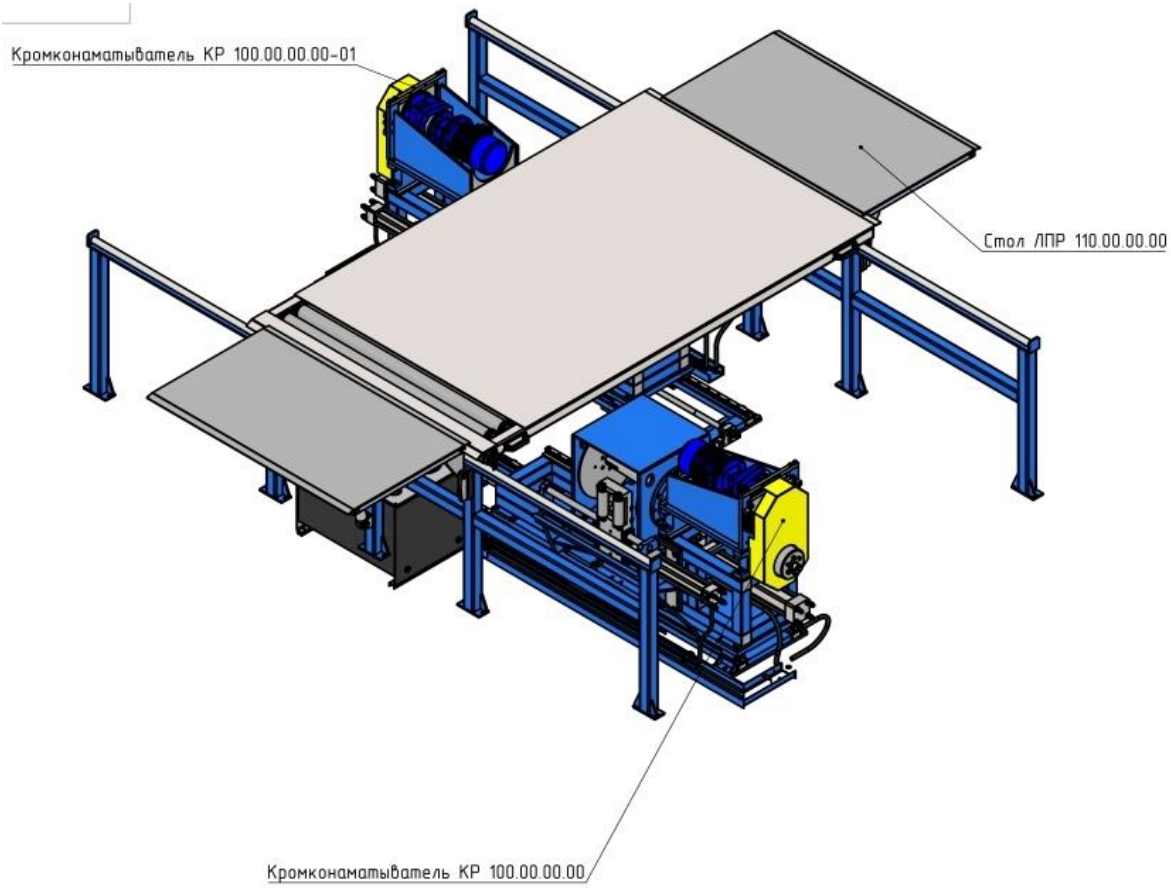

Fig. 9. General view of the table and trim recoiler

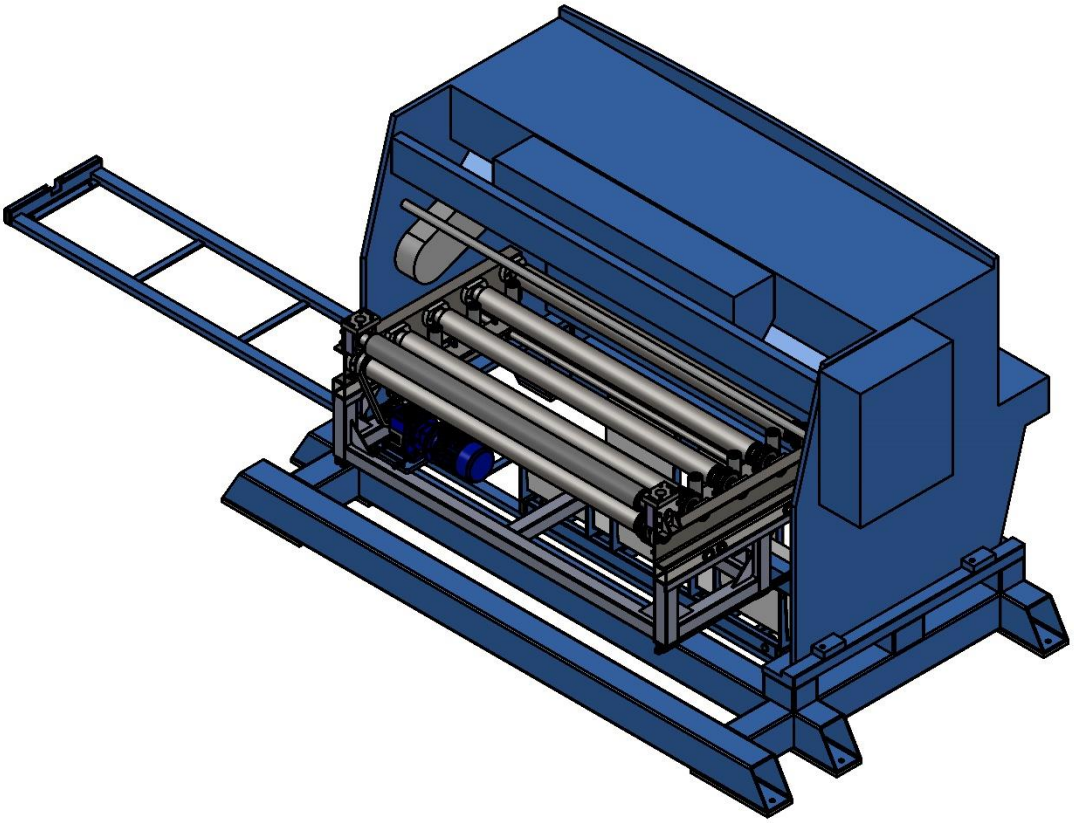

Fig. 10. General view of the guillotine

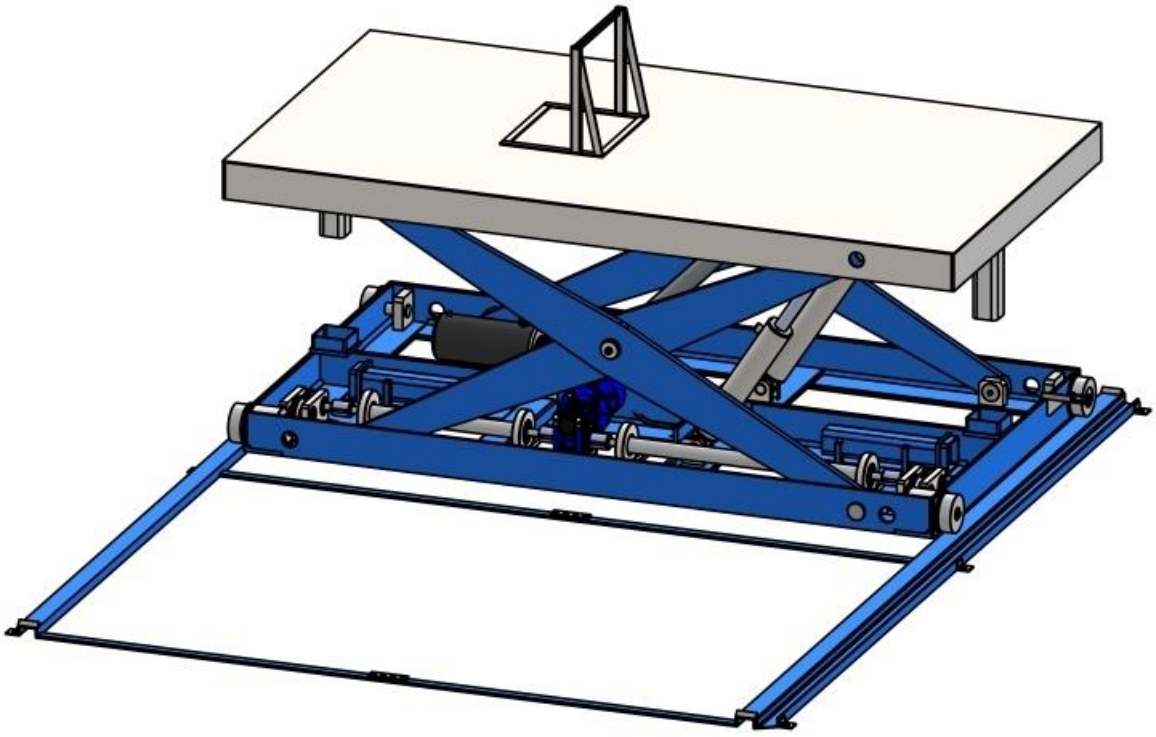

Fig. 11. General view of the hydraulic receiving table

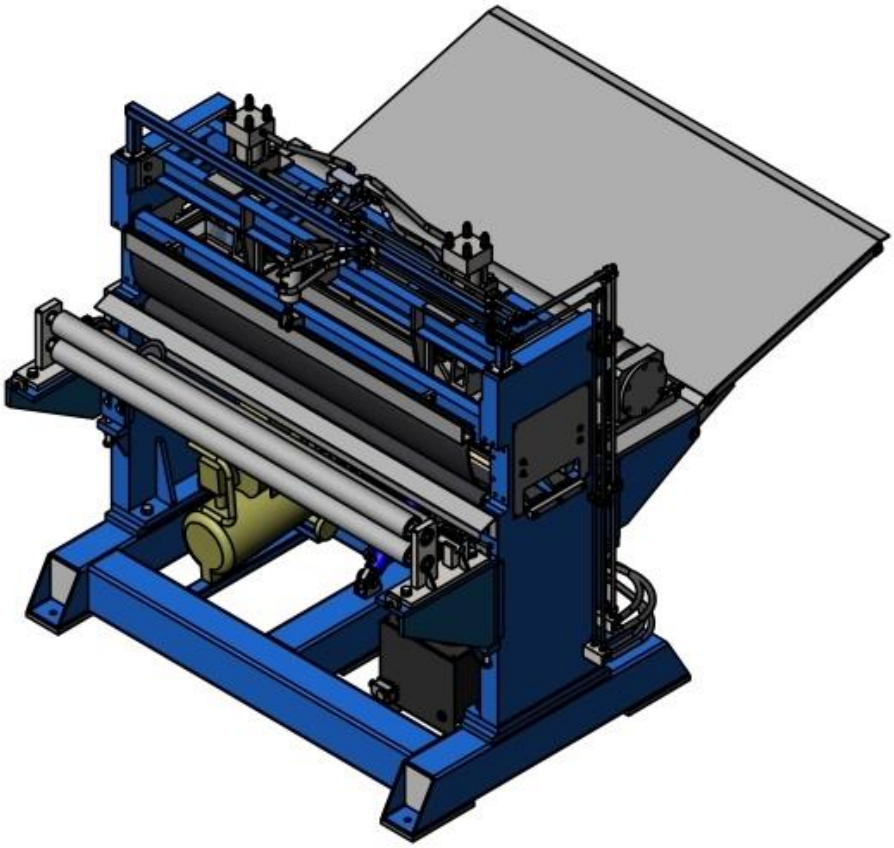

Fig.12. General view of the brake

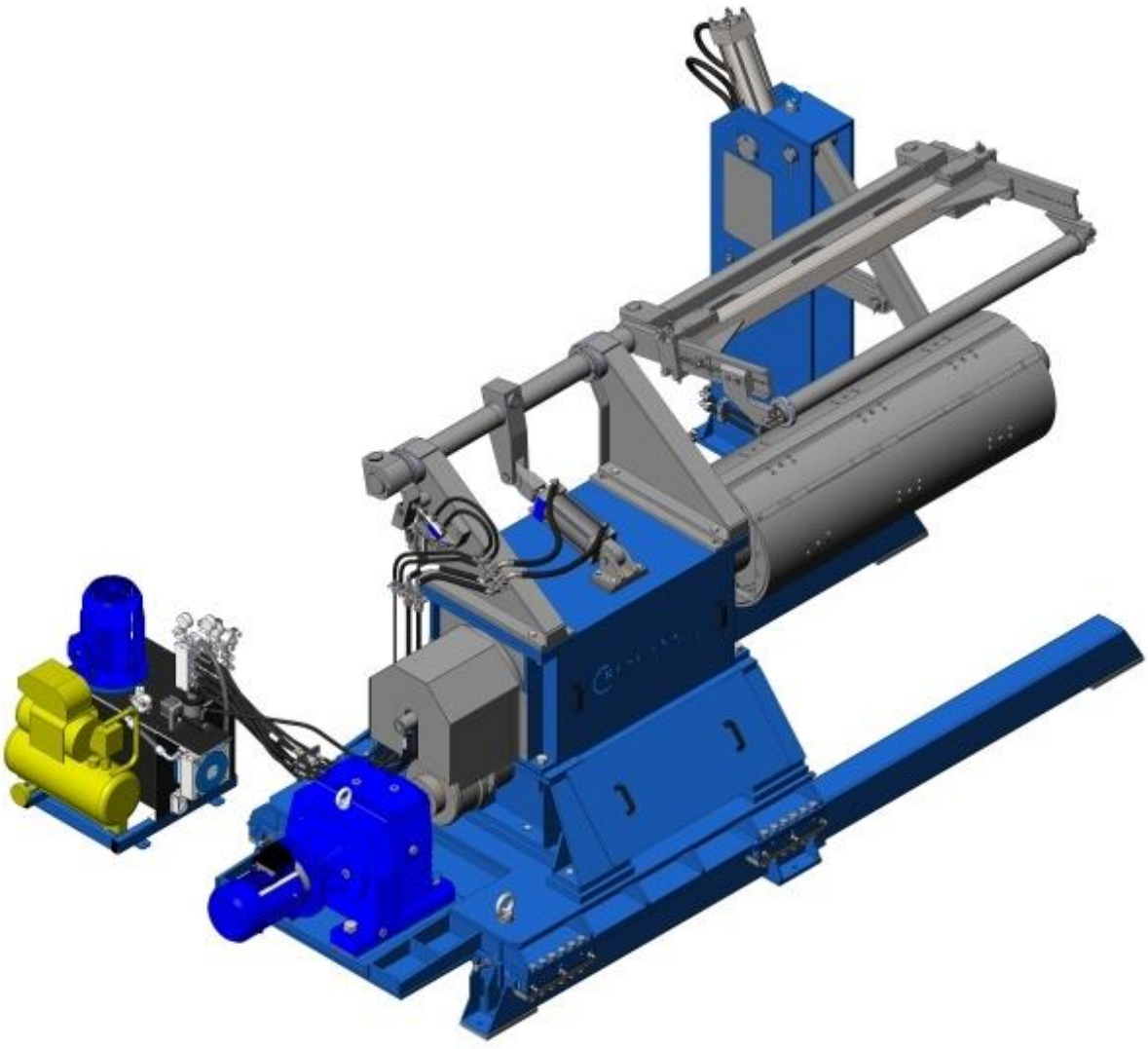

Fig. 12. General view of the recoiler

7. Slitting tooling kit (option)

Slitting tooling kit includes: disk knives, bonded stripper rings, spacer rings, separators.

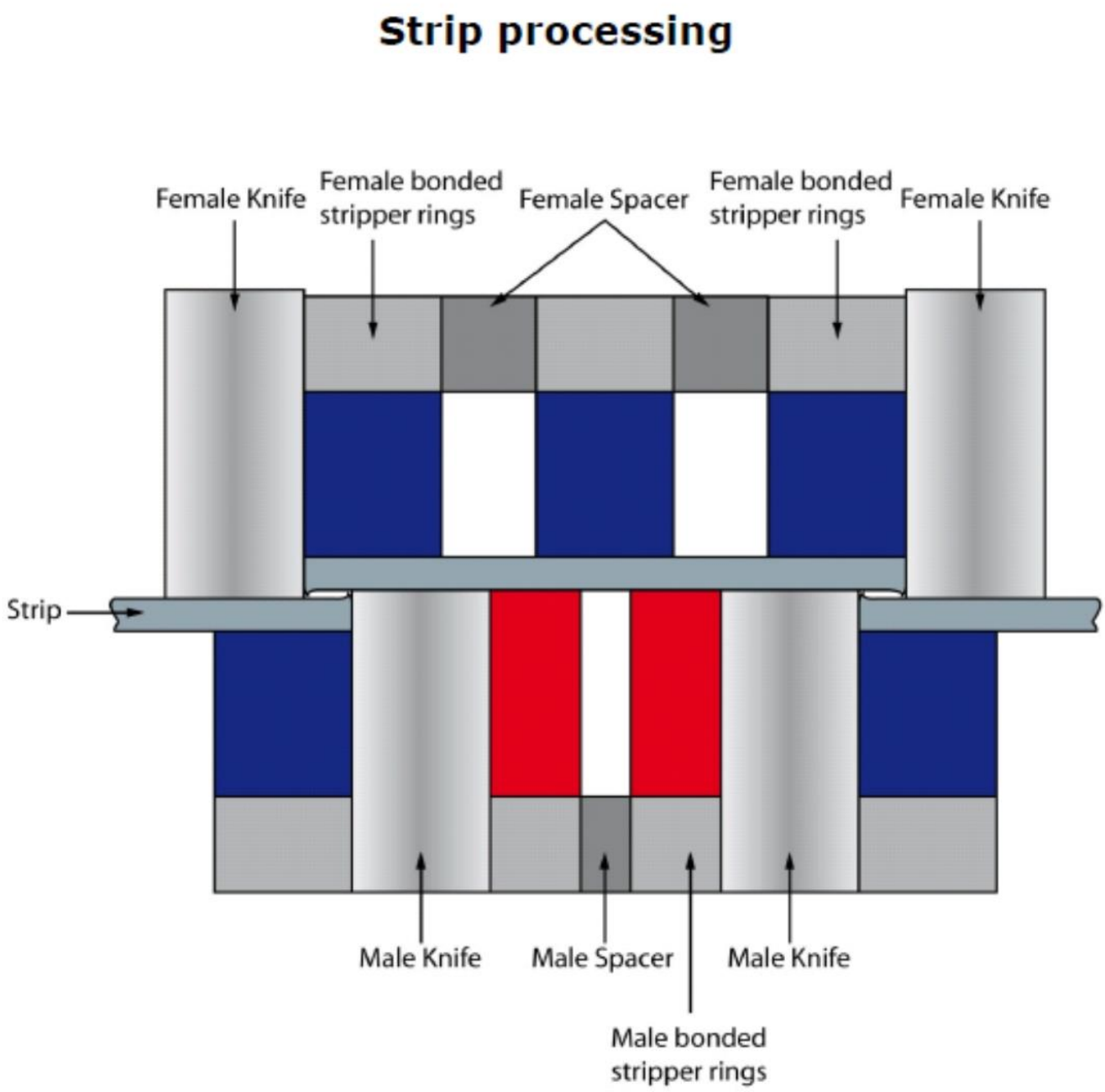

Fig. 13. Tools installation scheme for sheet slitting.

8. Technical specification of the tooling

1. Disk knives. Made from material 1.2379 Dimensions: Ø 340,000 x Ø 240,000 mm H6 With keyway With both sided dirt groove Ø 255,00 x 0,50 mm Side faces lapped Hardened to 57-59 HRC and precision grinding Thickness tolerance + 0,0025 / -0,0025 mm Parallelism within 0,0050 mm Flatness within 0,0050 mm	
2. Bonded Stripper Rings Steel core made from material no. 1.2067 Dimensions: Ø 270,000 x Ø 240,000 mm H7 With keyway With both sided dirt groove Ø 252,00 x 0,50 mm Hardened to 56-58 HRC and precision grinding Thickness tolerance +0,0025 / -0,0025 mm Parallelism within 0,0050 mm Flatness within 0,0050 mm Bonded with Perbunan 80±5 Shore O.D.: 340,00 mm Perbunan recessed 0,2-0,3 mm on both sides Quality of the surface [Ra] micron 0,40	
3. Spacers Made from material 1.2067 Dimensions: Ø 270,000 x Ø 240,000 mm G7 With keyway Up to thickness 8,00 mm with both sided dirt groove Ø 252,00 x 0,50 mm From thickness 40,00 mm spacers are made in light version Precision grinding by internal and external diameter with creases along the edges Thickness tolerance +0,0025 / -0,0025 mm Parallelism within 0,0050 mm Flatness within 0,0050 mm	
4. Separating discs Made from material 1.2235 Face surfaces precisionally polished Hardened to 54-56 HRC	

Fig. 14. An example of organizing a metal sheet slitting section

9. Technical documentation

Technical documentation includes:

9.1. Technical passport for equipment and instruction manual for the Equipment;
9.2. Specification of imported parts and assemblies.
9.3. The assembly drawing of the Equipment with items from specification.
9.4. List of consumable and wearing parts.
9.5. Electric circuit diagram.
9.6. Hydraulic diagramt (if available).
9.7 Pneumatic diagram

10. Imported components details

Components kit	Manufacturer
- cylinders; - distributors; - service units (filters, moisture separators, lubricators, pressure regulators); - pneumatic hoses and connectors	Pneumatic components "DUPLOMATIC" (Italy)
- controllers; - frequency converters; - length encoders; - inductive proximity sensors - control panels - relay	Industrial automation components "OMRON" (Japan)
- Shaft bearing units;	"ASKUBAL", (Germany)
- Slitting tools * (optional)	«NEUENKAMP» (Germany)

11. Packaging of the Equipment.
The equipment is delivered without packaging.

12. Testing and acceptance of the Equipment
Preliminary acceptance of the Equipment by quality and completeness takes place at the Supplier's factory, after its assembling and testing. The BUYER undertakes to provide the SUPPLIER with metal coil for testing Equipment in an amount not less than 100 (one hundred) linear meters of each standard size, not later than 14 calendar days prior to the planned date of acceptance of the Equipment at the territory of the SUPPLIER. Final production tests are done at the installation site of the Equipment, at the Buyer's factory, after its installation and commissioning. Acceptance and testing of the Equipment are carried out for the minimum and maximum thickness of the metal. All materials used in testing, in terms of quality and technical characteristics must comply with the parameters specified in Section 2 of this proposal.

13. Warranty
The Supplier gives a guarantee for the normal operation of the Equipment within 12 months (or 2000 working hours) from the date of commissioning at the Buyer's factory, but no more than 14 months from the date of delivery of the Equipment (the date specified in the shipping documents).

14. Equipment specification

№	Description	UOM	Quantity
1	**Cut-to-length and slitting line for metal thickness 0,5–4,0 mm and width from 1250 up to 1600**, consisting of:	**Line**	**1**
1.1	Decoiler	pcs	1
1.2	Coil car	pcs	2
1.3	Feeding-broaching unit	pcs	1
1.4	Straightening machine	pcs	1
1.5	Protective film application module	pcs	1

1.6	Slitting unit	pcs	1
1.7	Table	pcs	1
1.8	Trim recoiler	pcs	2
1.9	Guillotine	pcs	1
1.10	Hydraulic receiving table	pcs	1
1.11	Brake	pcs	1
1.12	Recoiler	pcs	1
1.13	Automatic Control System (ACS)	pcs	1
1.14	Supervised installation and commissioning	ea	**1**
Total price in USD including supervised installation, commissioning and training (trip costs are not included).			**550,000.00**

The price of the Equipment does not include:
- Transport expenses, room and board of the Supplier's technical specialists (2-3 people) during the installation of the Equipment at the Buyer's facility;
- Means and personnel for unloading and installation of Equipment;
- Installation of foundations for equipment and all tools for fixing machines to the floor of the Buyer's facilities;
- Installation of electricity to the connection points specified in the Supplier's documents;
- Lubricants, liquids and any other consumable materials;
- Required personnel from the Buyer's side to assist the Supplier's technical personals during the installation of the Equipment at the Buyer's facility.
- All tools for drilling, cutting, welding at the assembly site, all the tools necessary for leveling machines, tools needed to maintain the equipment. The list of materials will be included in the appendix to the equipment supply contract;
- Manufacturing, installation of protective fences in accordance with the technical standards of the Buyer's country;
- Provision of the necessary metal (coil) for adjustment and testing of the Equipment;

15. Options

№	Description	Price
1	Disc knife for slitting cold-rolled metal, metal MN-33 or similar (made in Germany), 1 pcs.	from 345 EURO
2	Bonded stripper ring for metal thickness 0,4 mm - 4,0 mm (made in Germany), 1 pcs.	from 216 EURO
3	Spacer (the width depends on the specified width of the strip)	from 60 EURO
4	Separating discs (for recoiler), 1 pcs	from 40 EURO
5	Set of guillotine knives for cold-rolled metal (made in Germany)	from 3 328 EURO
6	Plates for inner coil diameter of 850 mm	976 EURO
7	Additional pair of straightening shafts	1 503 EURO
8	Hydraulic Nut with tangential grease, 2 pcs	5 790 EURO
9	High pressure grease pump, 1 pcs	890 EURO
10	Slitting knives changer, dimensions (LxWxH), 4300x1200x1600 mm, weight1700 kg.	14 590 EURO
11	Soft CamB_5 program (Is used to calculate a cutting scheme)	8 590 EURO
12	Additional payment for increasing the maximum cutting speed up to 80 m / min.	64 264 EURO

16. Terms of delivery
EXW, Russian Federation, 142143, Moscow region, Podolsk city, Bykovo village (Incoterms 2010).

17.Terms of payment:
- 30% within 5 (five) business days after signing the Contract
- 20% in 1 (one) months from the date of the first advance payment;
- 20% in 3 (three) months from the date of the first advance payment;
- 20% in 5 (five) months from the date of the first advance payment;
- 10% within 3 (three) business days from the moment of signing the Acceptance Certificate of the Equipment of the completeness of sets and quality

*terms of payment can be changed

18. Time of delivery of the Equipment 8 - 9 months

The delivery time is defined as the time that takes it's beginning from the moment of starting the execution of the order to the message of the readiness of the goods for shipment at the Supplier's facility.
The order becomes valid upon the receipt of the agreed advance payment.

19. Approximate price for tooling produced by Neuenkamp, Germany
An example of calculating the price of tooling, for slitting coil for 10 strips.

19.1. Disk knives. Total quantity 22 pcs.

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
1	22	20,0000	345,00
		Total:	**7.590,00**

19.2. Bonded stripper rings. Total quantity 80 pcs.

«Male»

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
2	30	20,0000	216,00
		Total:	**6.480,00**

«Female» for metal thickness 0,4-2,0

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
3	30	20,0000	216,00
		Total:	**6.480,00**

«Female» for metal thickness 0,4-2,0

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
4	20	20,0000	216,00
		Total:	**4.320,00**

19.3. Spacers. Total quantity 371 pcs.

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
5	24	2,0000	61,00
6	1	2,0250	81,00
7	11	2,0500	61,00
8	21	2,1000	61,00
9	11	2,1500	61,00
10	21	2,2000	61,00
11	10	2,3000	62,00
12	10	2,4000	63,00
13	20	2,6000	64,00
14	24	3,0000	69,00

15	10	3,2500	69,00
16	48	4,0000	72,00
17	48	8,0000	76,00
18	24	12,0000	95,00
19	48	24,0000	130,00
20	40	50,0000	203,00
		Total:	**34.069,00**

19.4. Separating discs. Total quantity 44 pcs.

№	Quantity, pcs.	Thickness, mm	Price per 1 pcs. / EUR
5	44	3,0000	40,00
		Total:	**1.760,00**

Total cost of the tooling kit 60.699,00 EUR