

(Original) Use and maintenance manual

Type: Manual die cutter 1200mm
Model: F-121



IMPORTANT:

Read this user manual and follow the instructions and warnings before operating this device.

Any modification or transformation performed on this machine may cause loss of the manufacturer's guarantee and liability.

This manual must always remain near to the machine and visible to all the operating and maintenance staff, for any future consultation, forming part of the equipment.

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- **CE Declaration of conformity:**

WE DECLARE, under our responsibility, that the machine:

- Type: Manual die cutter
- Brand: ERM Engineering
- Model: F-121
- Serial No.: xxxxxx
- Manufacturer date: 2021

Inspired by the directives of the Official Journal of the European Communities:

2006/42/CE Machinery Directive

Complies with the design and construction specifications of the European Standards on General Machine Safety:

EN 349 - EN 614-1 - EN 614-2 - EN 12100 - EN 11161-1 - EN 1005-1 - EN 1005-2 - EN 1005-3 - EN 1005-4 - EN 13849-1 - EN 13849-2 - EN 894-3 - EN 13857 - EN 14120

General Manager: Eduardo Ramos Martínez



ermengineering
belting fabrication equipment

Arenys de Munt (Barcelona)-SPAIN

Date: 2021/08

- **Description:**

Manual die cutter of conveyor belts for cutting preparation for zigzag joining.

Specially designed to carry out assemblies on site.

Open throat for unlimited width and head displacement with mechanical pitch advance system.

Punching of V-shaped blades against plastic support plate.

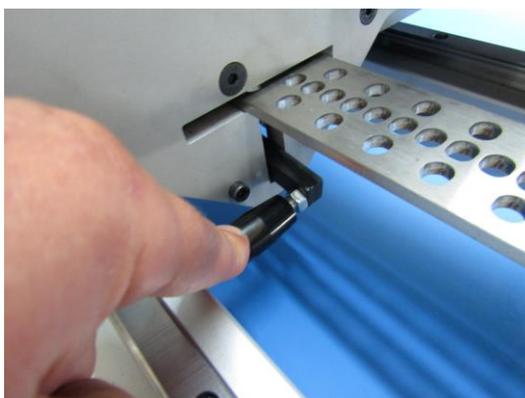
- **Technical characteristics:**

- Belt thickness max.	12mm
- Stroke head	1190mm
- Standard cutting head	80x10 / 50x20
- Dimensions (LxWxH)	1595x350x520mm
- Total weight	50.8kg

- **Using instructions:**

Positioning and control elements:

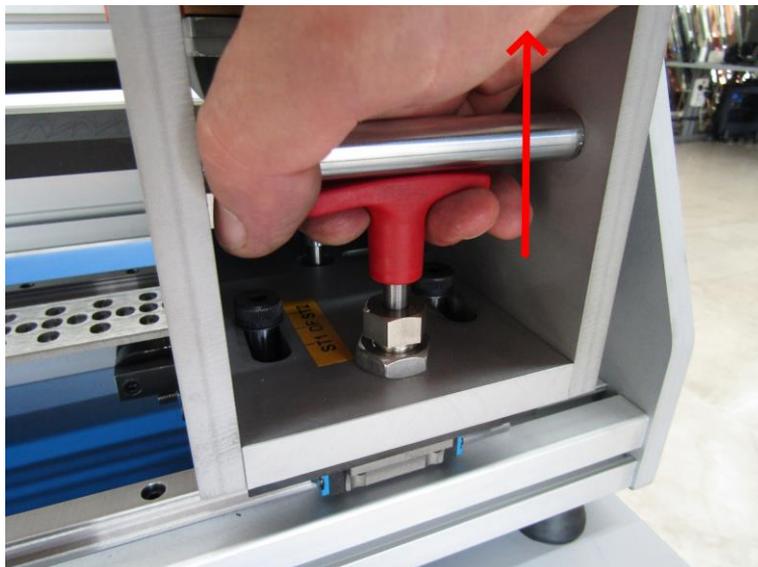
- **Displacement lock cam.**



Its function is to block the lateral movement of the head and limit it in the step-by-step movement during the punching operation.

To release the lock, just press down until the lock is released.

- **Spring positioner.**



The spring positioner ensures the positioning of the head in the three positions **ST1/DF/ST2**

To position the head in any of the three points, just pull it up and keeping it retracted, move the head to the reference mark.

- **Start guide positioner.**



The function of this mobile guide is to move exactly 10mm (half the pitch of the double finger) between the **STEP 1** and **STEP 2** position to make the cut at the second end of the belt.

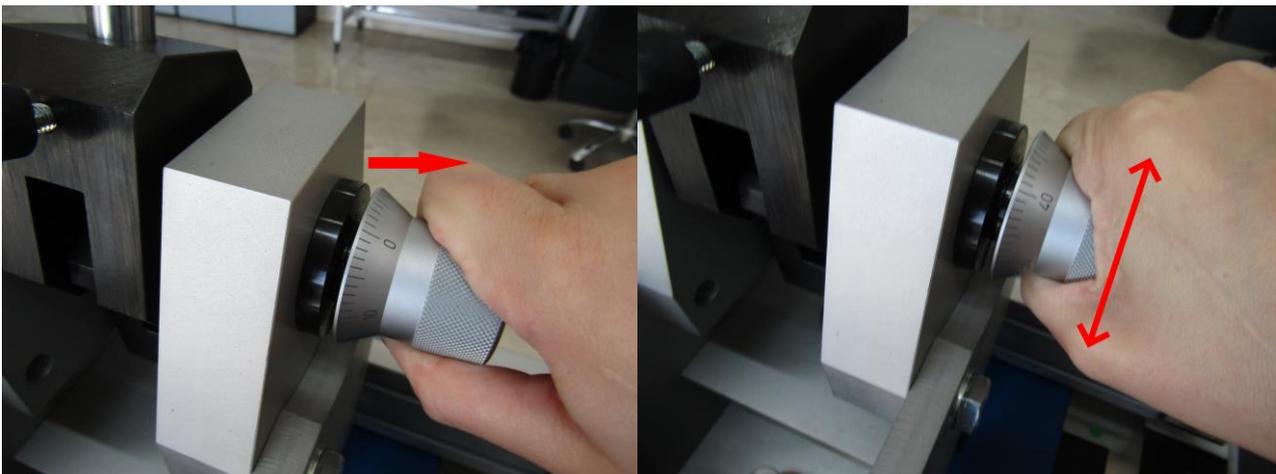
To position it, simply loosen the lower knurled knob half a turn and move it to the end of its stroke.

- Pressure regulator knob.



Its function is to regulate and limit the downward path of the die by means of an eccentric shaft. The lowest set point is **0**.

To adjust, pull the knurled knob out, turn into position and lock again.



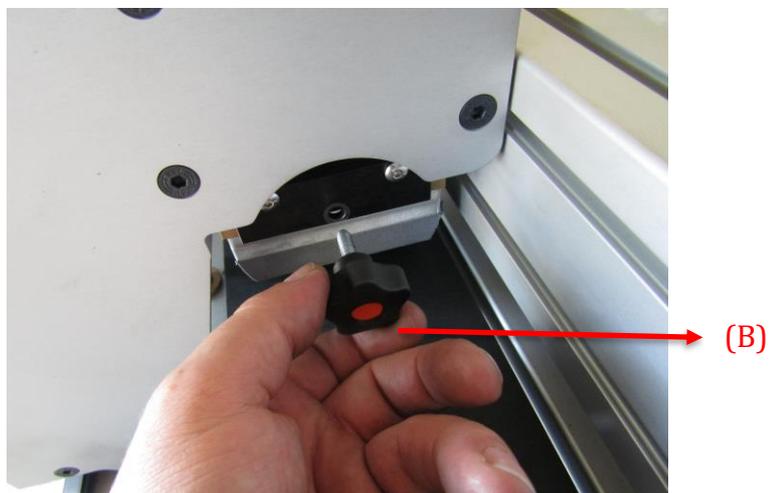
- Clamp bar pressure flanges.



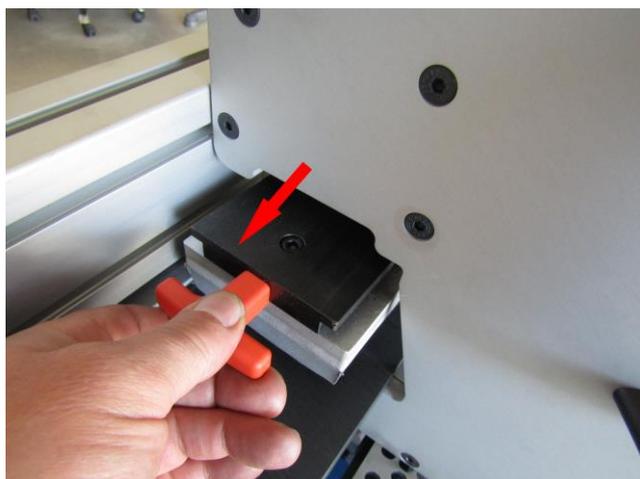
They fix and immobilize the belt during cutting by pressing the bar down.

Replace cutting head

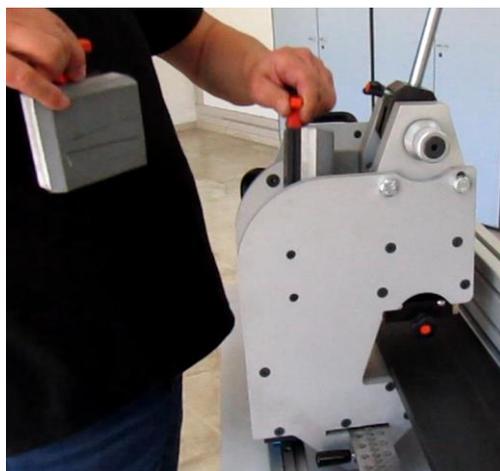
To change the cutting head, it is necessary to loosen and remove the knob M-6 (B)



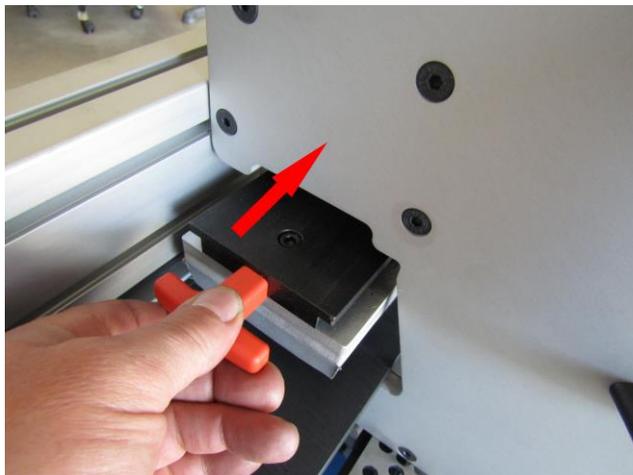
Then remove the cutting head from the opposite side.



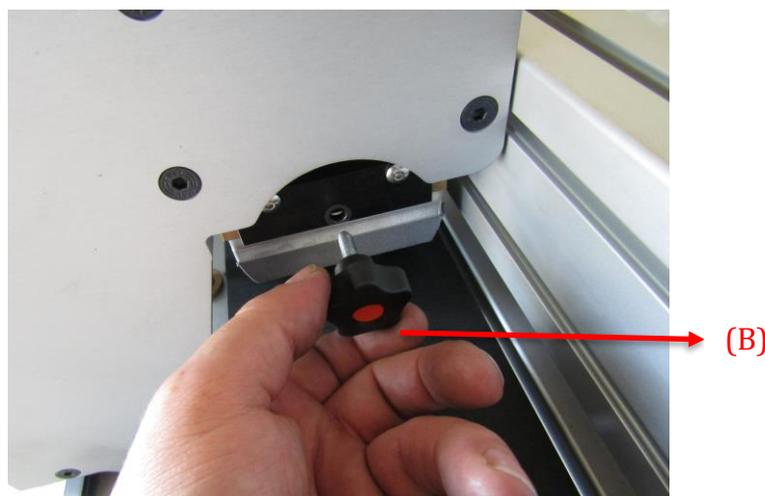
Replace the cutting head with the one found in the housing that is arranged in the head to protect it.



We will introduce the new cutting head from the same side.



And we will fix it later with the knob (B)



WARNING:

When assembling the 80x10 cutting head it is very important that the head is always positioned in DF. Otherwise, ST1 and ST2 may break the blades on the side guides.

Initial cut measurements before die cutting.

In both types (80x10 and 50x20 double) we will have to cut the belt **100mm longer** from the measure of the final development once it is joined.

Due to the short length of the side guides, it is necessary to cut at 90° with extreme precision.

The positioning reference of the end of the nylon board will determine the straightness of the splice.

For double die cutting, a minimum of **95mm fabric opening** is required.

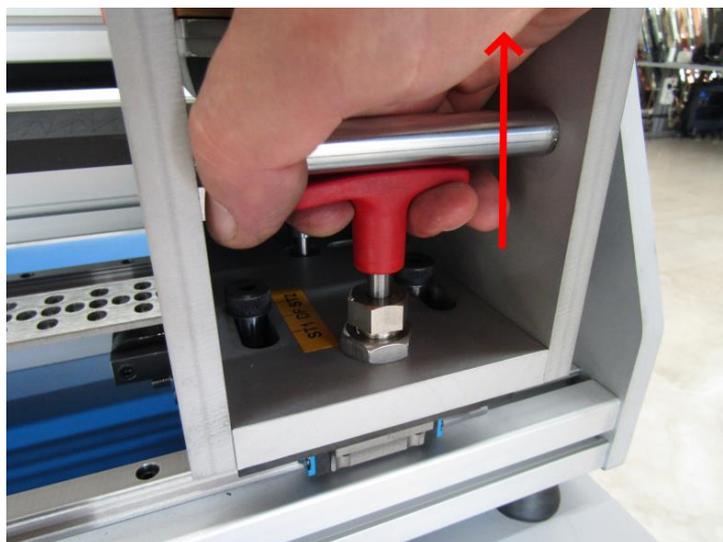
Direct die cut 80x10

Preparation

Once the 80x10 cutting head is assembled, we will move the head to the start of the path on the right side of the bench (0), releasing the **locking cam** from the lower part of the cutting head by pressing it down.



Once we have reached the end of the route, we will make sure that the head is in "DF" position (direct finger), if not, we will position it in the DF position by pulling up the locking knob.



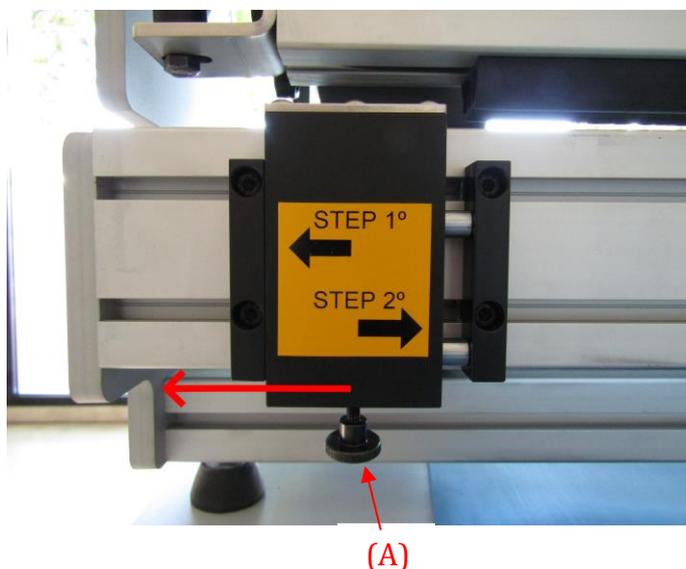
We will move the head to the DF position, making sure that the handle snaps back into the hole.



WARNING:

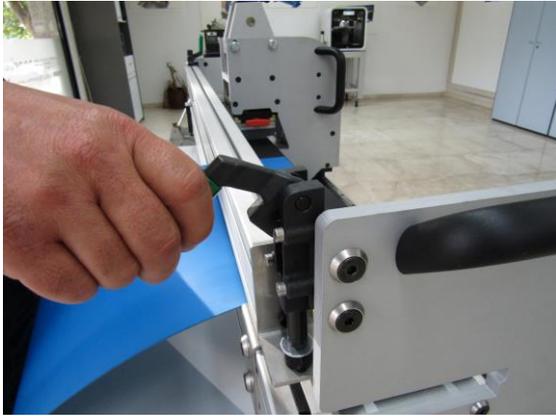
To be able to position the head in any of the three positions: **ST1, DF, ST2**; it is essential that it is at the beginning of the stroke (0) on the right side, otherwise, we could damage the mechanical elements of the locking cam.

Once the spindle is positioned in **DF** and with its corresponding cutting head mounted (80x10), we will position the **mobile starting guide** in **STEP1** and fix it with the lower tightening knob **(A)**.

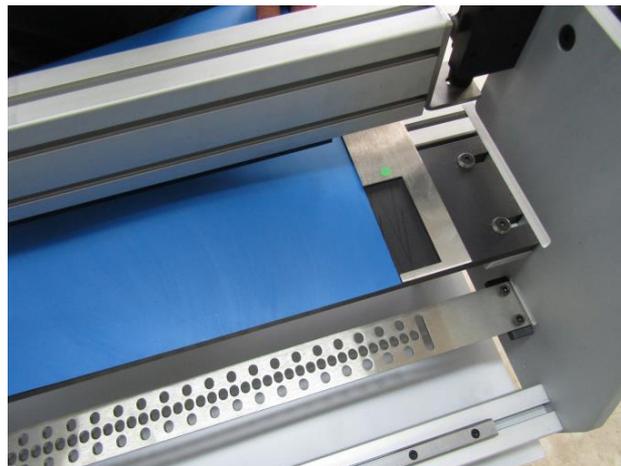


Operation

We will introduce the first end of the belt with the transport or cover face upwards, lifting the clamping bar through the clamping flanges.



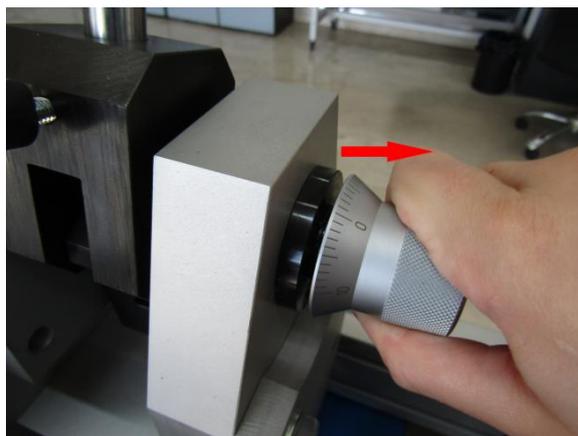
The belt must be inserted until the end of the Nylon plate and well tangent to the initial guide marked with a green dot (0).



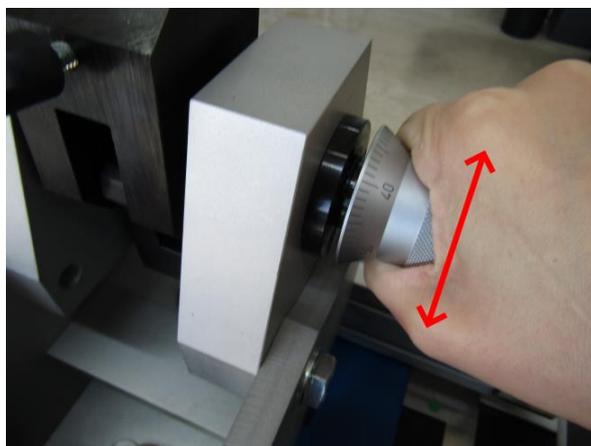
Descend the holding rod by activating the pressure flanges of the clamp on both sides of the bench.

We will adjust the **pressure regulator knob** at the 0° point.

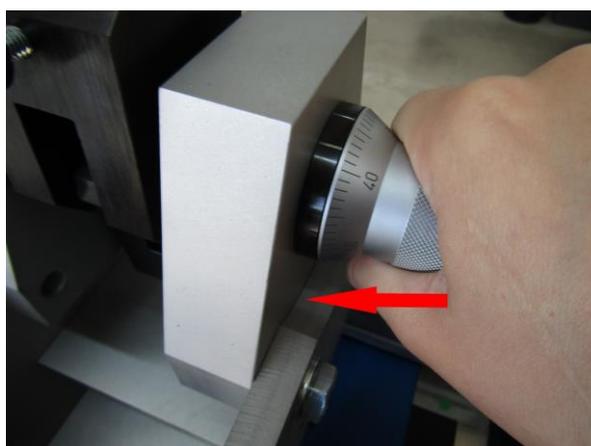
To adjust the regulator knob, we will pull the knob out to unlock it.



We will rotate it to the desired position.



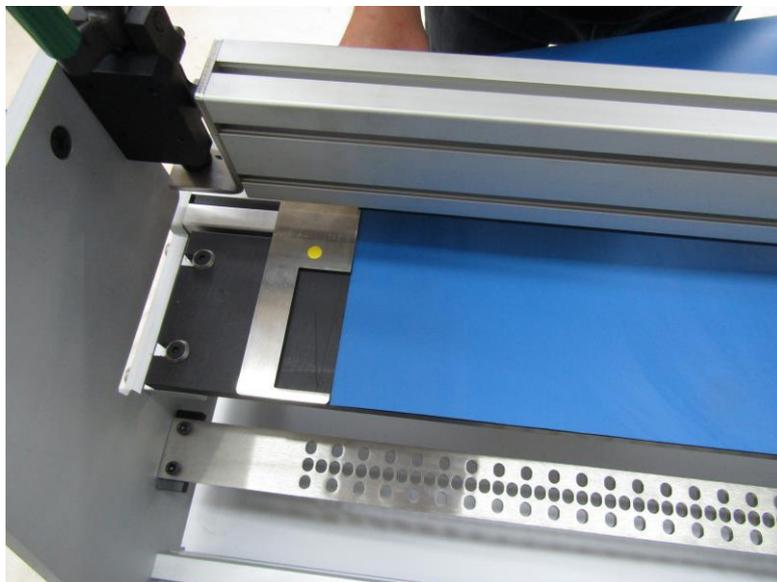
Once in position, we will press inwards again to lock it.



We will start the cut from right to left by activating the punching lever until the end of its stroke and after each cut, we will move the head to the left until it locks again to carry out the next cutting operation.

We will repeat as many necessary operations until we get the cut in the entire width of the belt.

We will remove the belt and introduce the second end of the belt also with the transport or cover face up on the opposite side of the bench, lifting the clamping bar and position it to the end of the Nylon plate and well tangent to the final guide marked with a yellow dot (0).



We will position the head from right to left until the beginning of the belt and we will repeat the cut in the same way as the previous one, that is, from right to left until the end of its path.



Double finger die cut (50x20)

Preparation

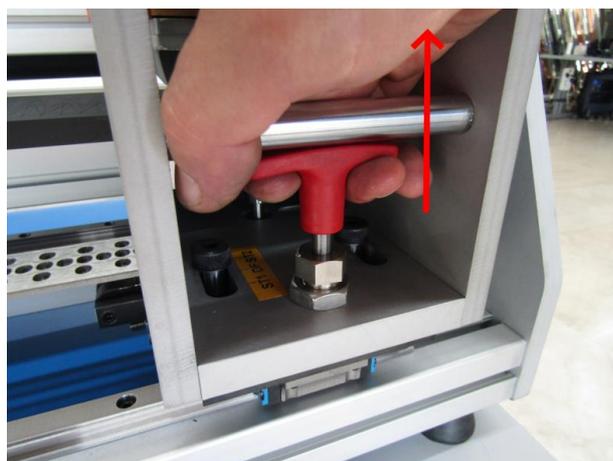
We will introduce the 50x20 cutting head and sit it with knob (B). (See pages 7 and 8)

Once the cutting head is assembled, we will move the head to the end of the path on the right side of the bench (0), releasing the cutting head **locking cam**.



We will position the head in position “ST1” to make the first cut of the upper fabric.

To position the “ST1” position head, we will pull up the **spring positioner** and move the head to the correct position.

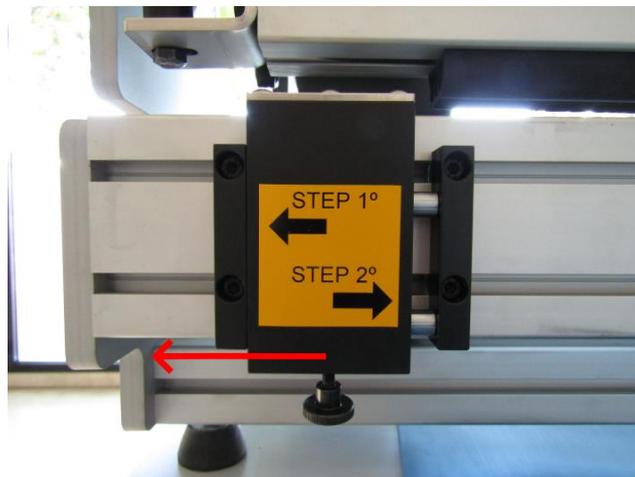




! WARNING:

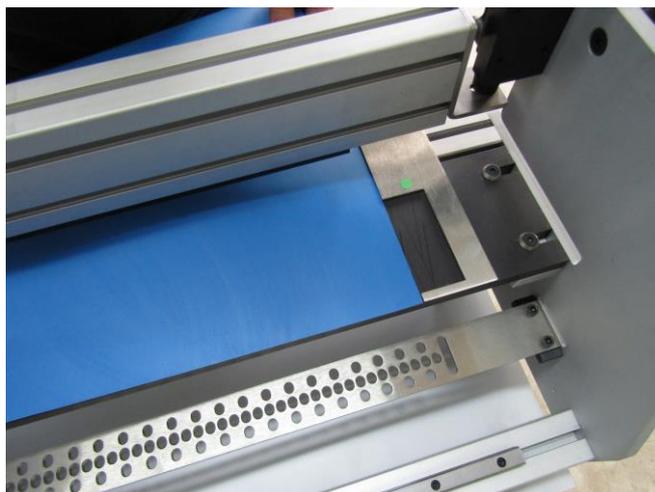
To be able to position the head in any of the three positions: **ST1, DF, ST2**; it is essential that it is at the beginning of the stroke (0) on the right side, otherwise, we could damage the mechanical elements of the locking cam.

Once the head has been positioned and with its corresponding cutting head mounted (50x20), we will position the **mobile guide** in **STEP1**.



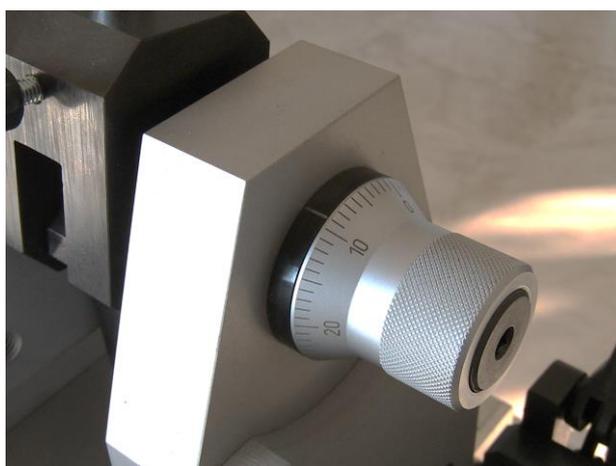
Operation

We will introduce the first end of the belt with the transport or cover face up, lifting the clamping bar and position it until the end of the Nylon plate and perfectly tangent to the initial guide (0) marked with a green point.



We will lower the clamping bar on both sides of the bench, and we will fix it with the pressure flanges.

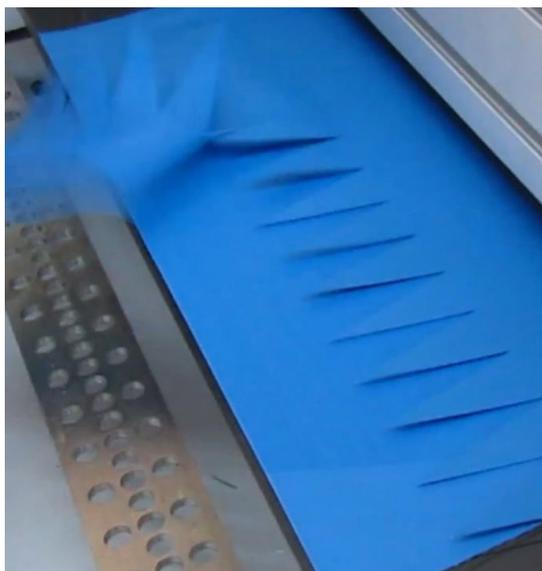
We will adjust the **pressure regulator** knob at the desired point depending on the thickness of the lower fabric of the belt (see guide table page ?)



NOTE:

For belt types where the exact pressure setting point is unknown, it is recommended to first perform a cutting test at position **ST2**, since even if the setting is incorrect, when performing the second lower fabric cutting operation, the results of this test will be deleted.

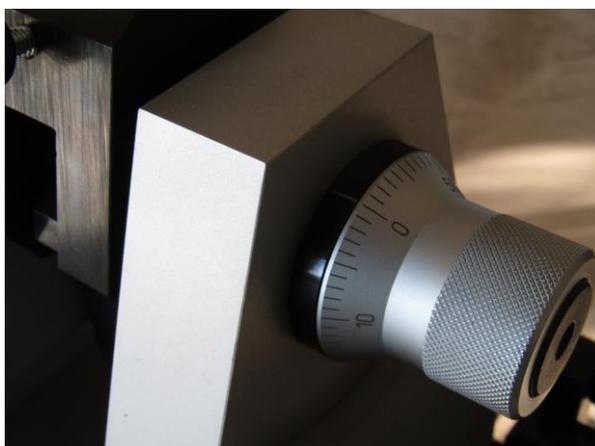
Once the cutting pressure has been adjusted, we will proceed to the die-cutting of the upper fabric, carrying out cutting operations from right to left until the width of the belt is finished, we will remove the waste of the upper fabric.



We will move the head again towards the starting guide marked with the green dot (0) by releasing the cutting head locking cam, and we will position the head at "ST2" to make the second cut of the lower fabric.

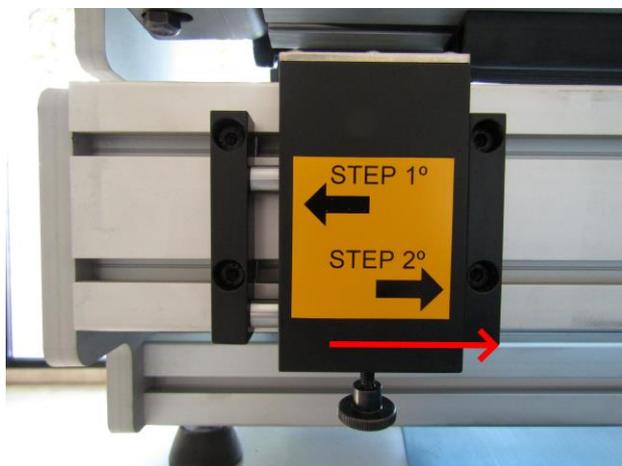


We will adjust the cutting regulation knob at **point 0**,

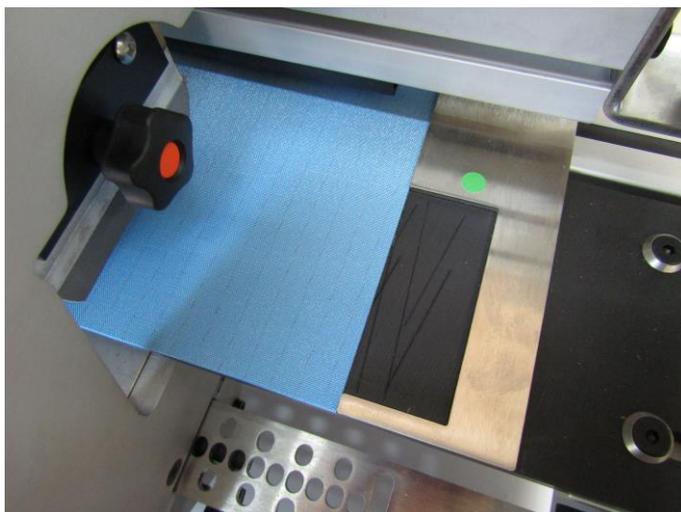


to proceed to the second cut of the lower fabric in the same way, from right to left.

After the cuts are completed at the first end of the belt, we will remove the belt and, to make the cut at the other end of the belt, we will adjust the mobile guide to **STEP2**.



We will lift the clamping bar and introduce the belt the other way around, that is, with the fabric on top and the covering down to the end of the Nylon plate and well tangent to the initial guide (0) marked with a green dot.



We will lower the clamping bar on both sides of the bench.

We will position the head in position "**ST1**" to make the first cut of the upper fabric and we will adjust the pressure regulator knob according to the thickness of the lower fabric.

This graduation for the second end is not related to that of the first end made previously.

NOTE:

For belt types where the exact pressure setting point is unknown, it is recommended to first perform a cutting test at position **ST2, since even if the setting is incorrect, when performing the second lower fabric cutting operation, the results of this test will be deleted.**

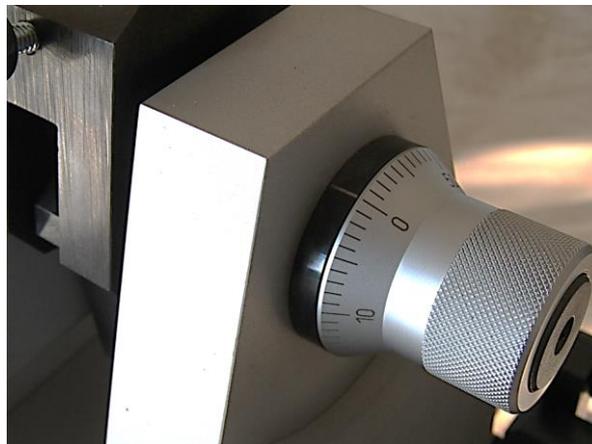


! WARNING:

To be able to position the head in any of the three positions: **ST1, DF, ST2**; it is essential that it is at the beginning of the stroke (**0**) on the right side, otherwise, we could damage the mechanical elements of the locking cam.

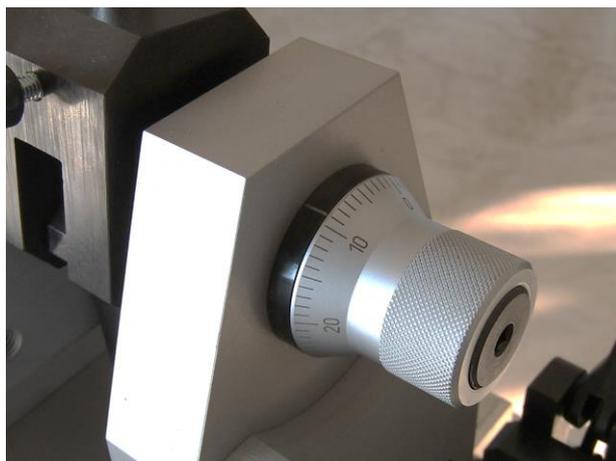
We will start the cutting operation from right to left until we cut the entire width of the belt.

We will remove the waste, move the head again to the end of the stroke (**0**) and position the head at **ST2** and the **pressure regulation knob at 0** to cut the lower fabric.



We will lower the clamping bar on both sides of the bench.

We will adjust the pressure mode at the desired point and start the cut from right to left.

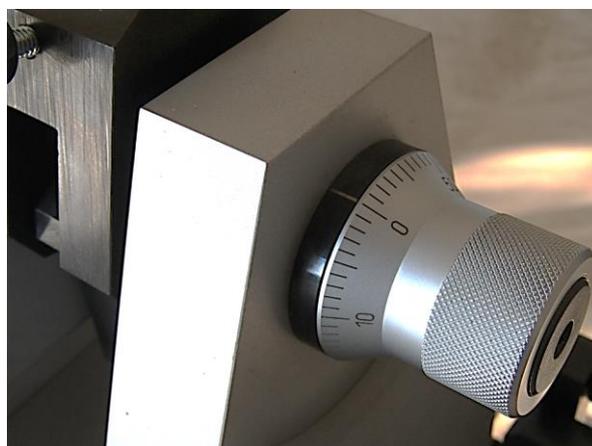


For the second cut, we will lift the clamping bar and position it to the end of the Nylon plate and well tangent to the initial guide (0) marked with a green dot.

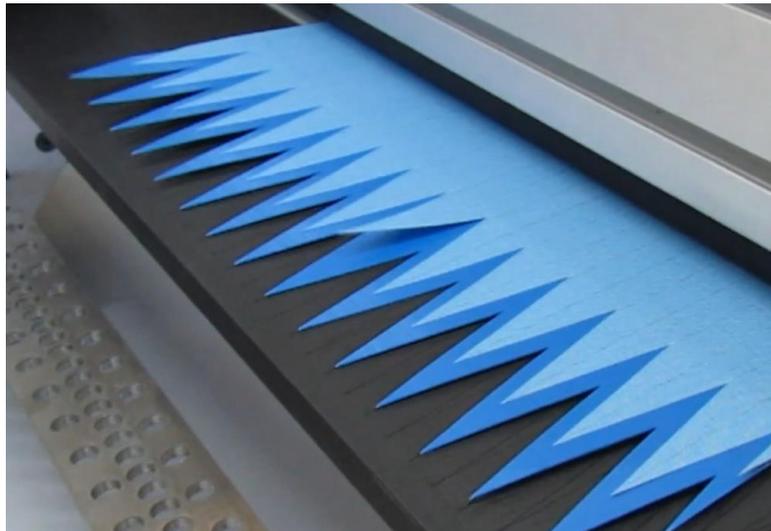
We will position the head in position "ST2" to make the second cut of the lower fabric.



We will adjust the pressure knob at point 0.



We will start the cut from right to left until the cut is finished throughout the width of the belt.



- **Maintenance:**

Changing the nylon plate:

To replace the end plate, we will position the head in the middle of the bench.



We will loosen and remove with a 4mm Allen key the 4 bolts that hold the plate.



Once removed, we will extract the plate through the lateral opening of the bench on the left side.



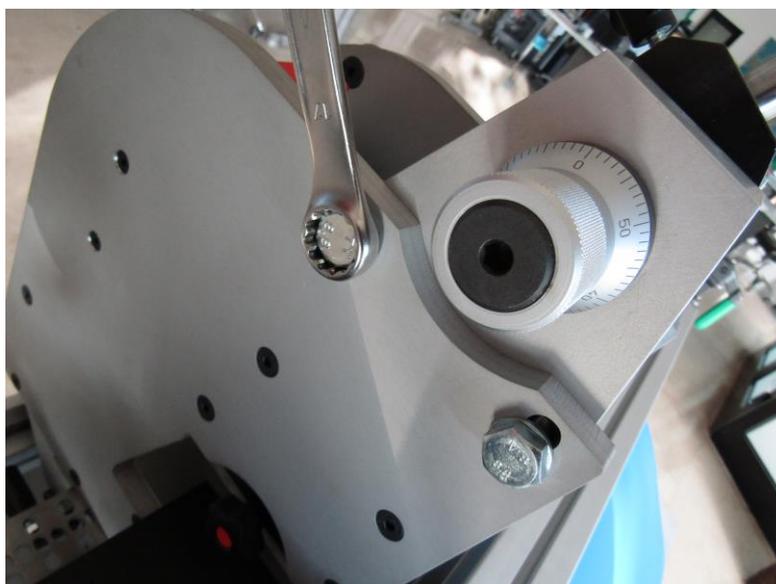
In the same way, we will introduce the new plate and fix it again with the 4 bolts.

Head height adjustment:

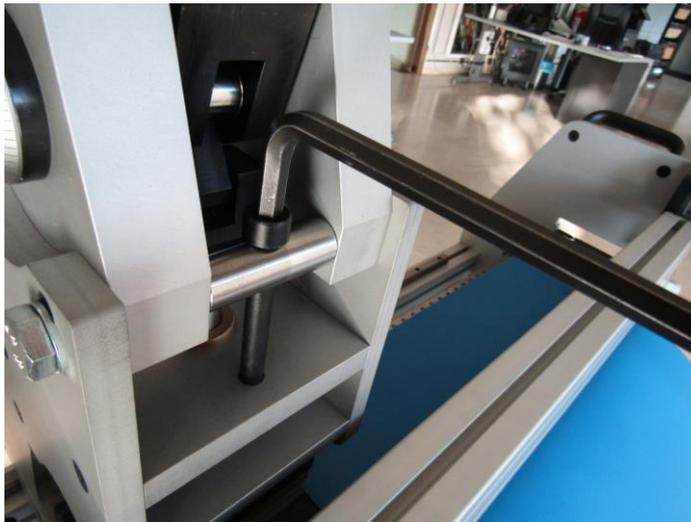
NOTE:

We will have to adjust the height of the head each time we replace the nylon plate, either due to deficiencies in the cut or due to excessive deterioration of the plate.

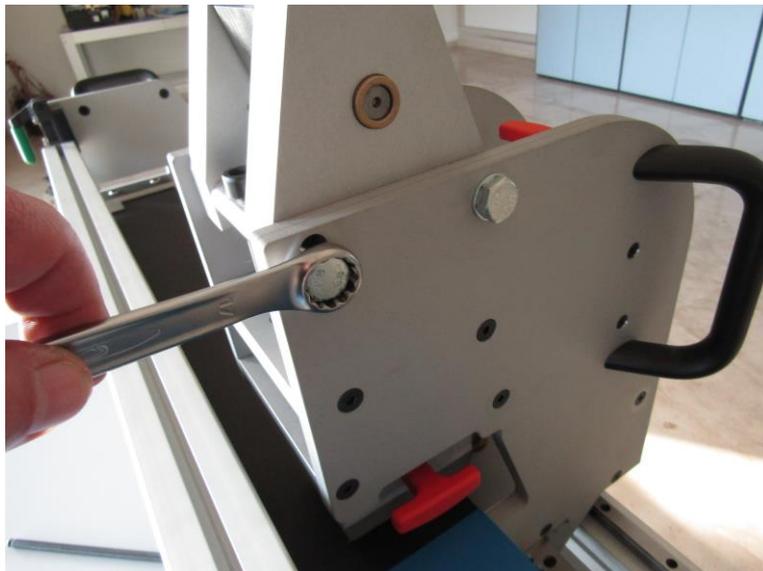
We will loosen with a 17mm key the 4 upper bolts of the head (the two on each side).



With an 8mm Allen key we will adjust the height of the set of cams.



Once the height is adjusted, we will tighten the 4 M10 bolts again with the 17mm spanner.

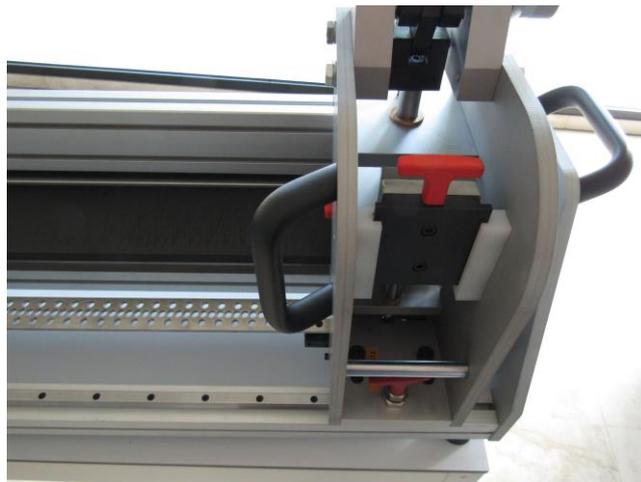


Once adjusted, retighten the four screws tightly.

We can also move the nylon plate by loosening the 4 M6 screws on the sides and moving it a few millimeters to avoid that the cut always coincides in the same place.

- **Transport and mobility:**

To transport the machine from one place to another, we will move the head to the end of the start travel (0) in such a way that the weight of the head is on the transport wheels.



If it is considered necessary, we can extract the punching lever by loosening the toggle that holds it and pulling it up.

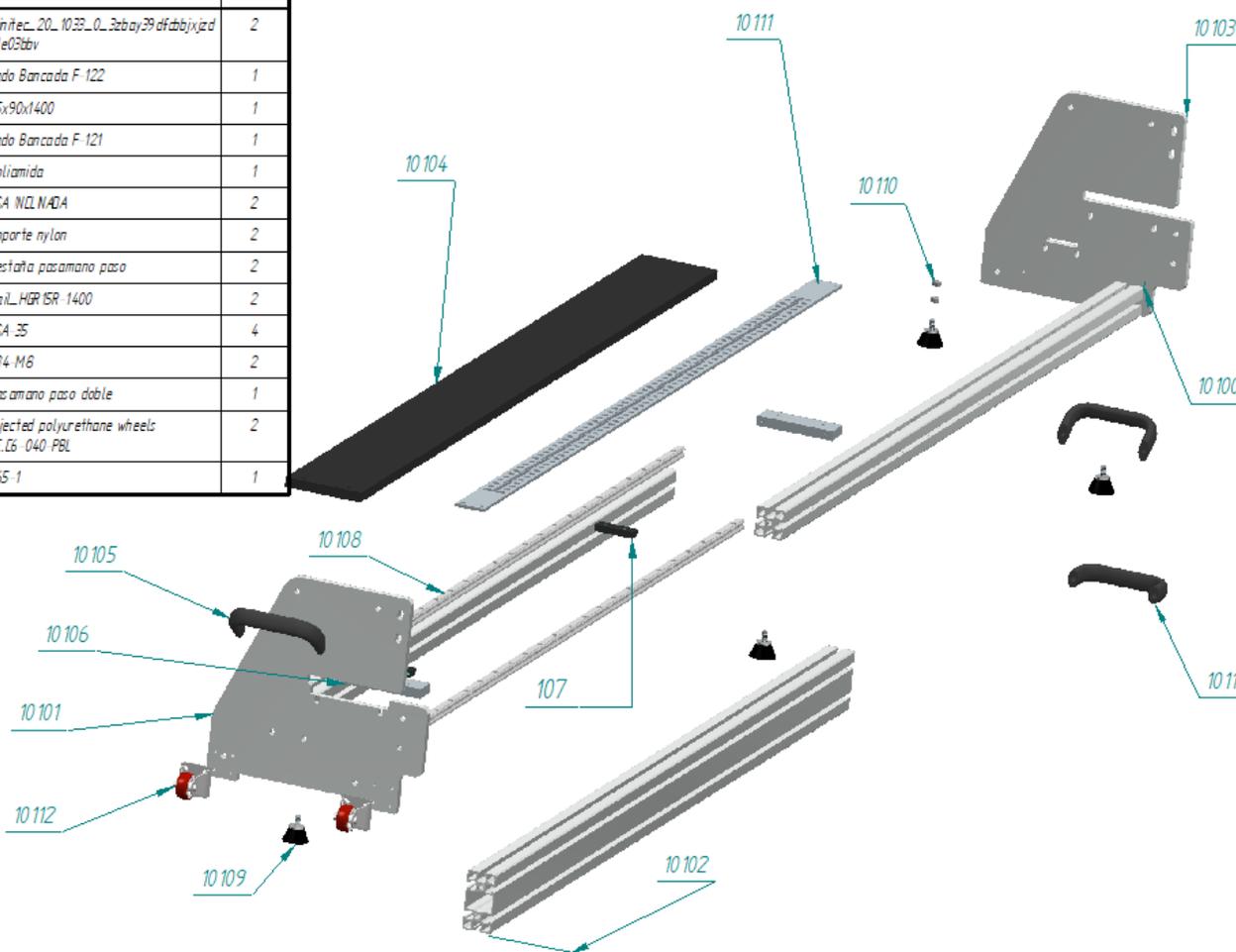


It is also recommended to close the pressure flanges of the rammer bar to avoid vibrations during movement.



Spare parts:

Part number	Part name	Units
F-10100	minitec_20_1033_0_3bay39 dfabbjxjd 21e03bv	2
F-10101	Lado Bancada F-122	1
F-10102	45x90x1400	1
F-10103	Lado Bancada F-121	1
F-10104	Poliamida	1
F-10105	ASA NCLN404	2
F-10106	Soporte nylon	2
F-10107	Pestana pasamano paso	2
F-10108	Rail_HGR ISR 1400	2
F-10109	TSA_35	4
F-10110	934-M6	2
F-10111	Pasamano paso doble	1
F-10112	Injected polyurethane wheels RE.C6_040 PBL	2
F-10113	565-1	1

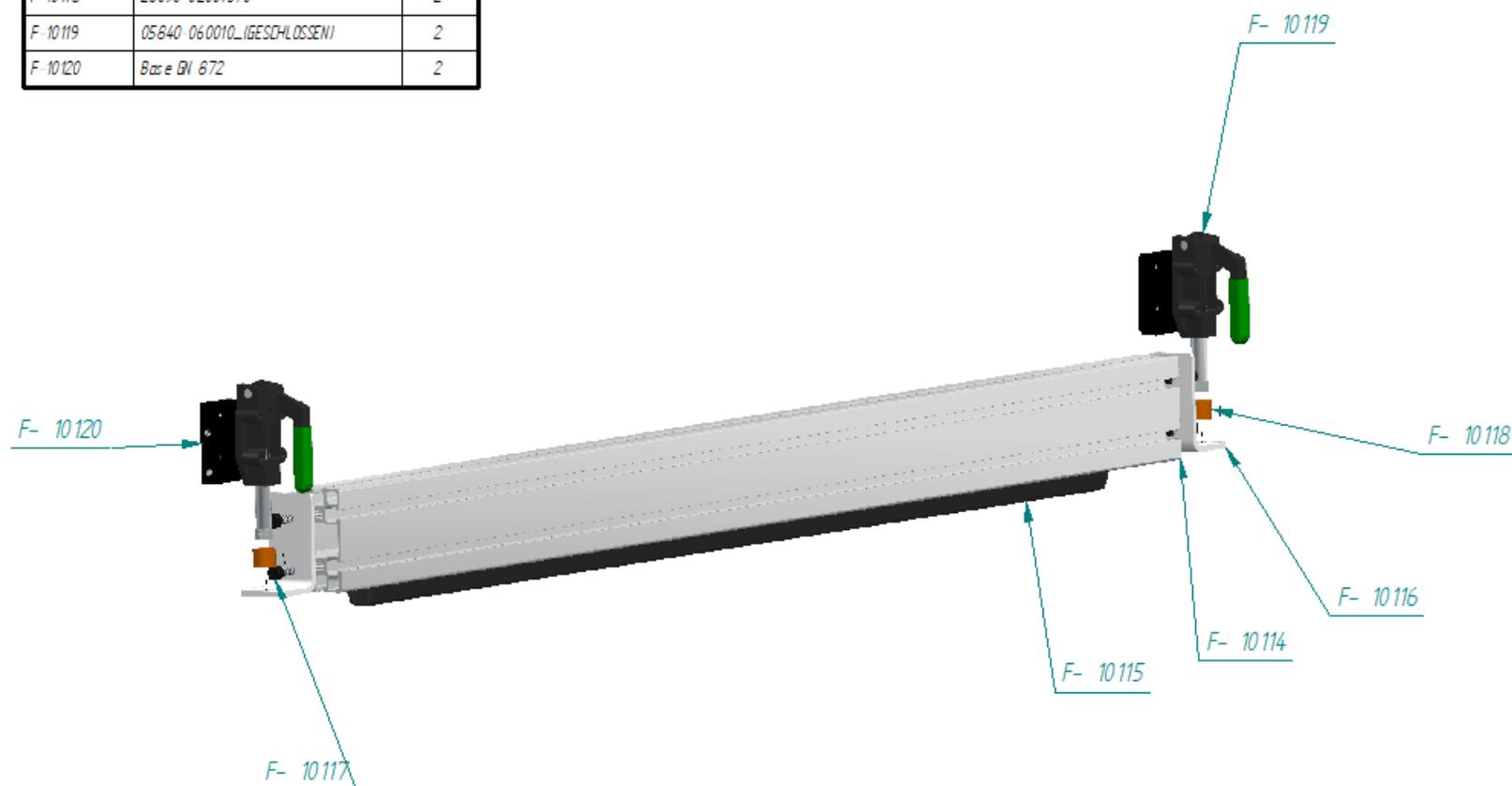


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Part number	Part name	Units
F-10114	45x90 pisador	1
F-10115	Perfil goma pisador	1
F-10116	Escuadra pisador	2
F-10117	912M6X30	4
F-10118	26090-02001670	2
F-10119	05840-060010...(GESCHLOSSEN)	2
F-10120	Base BN 672	2

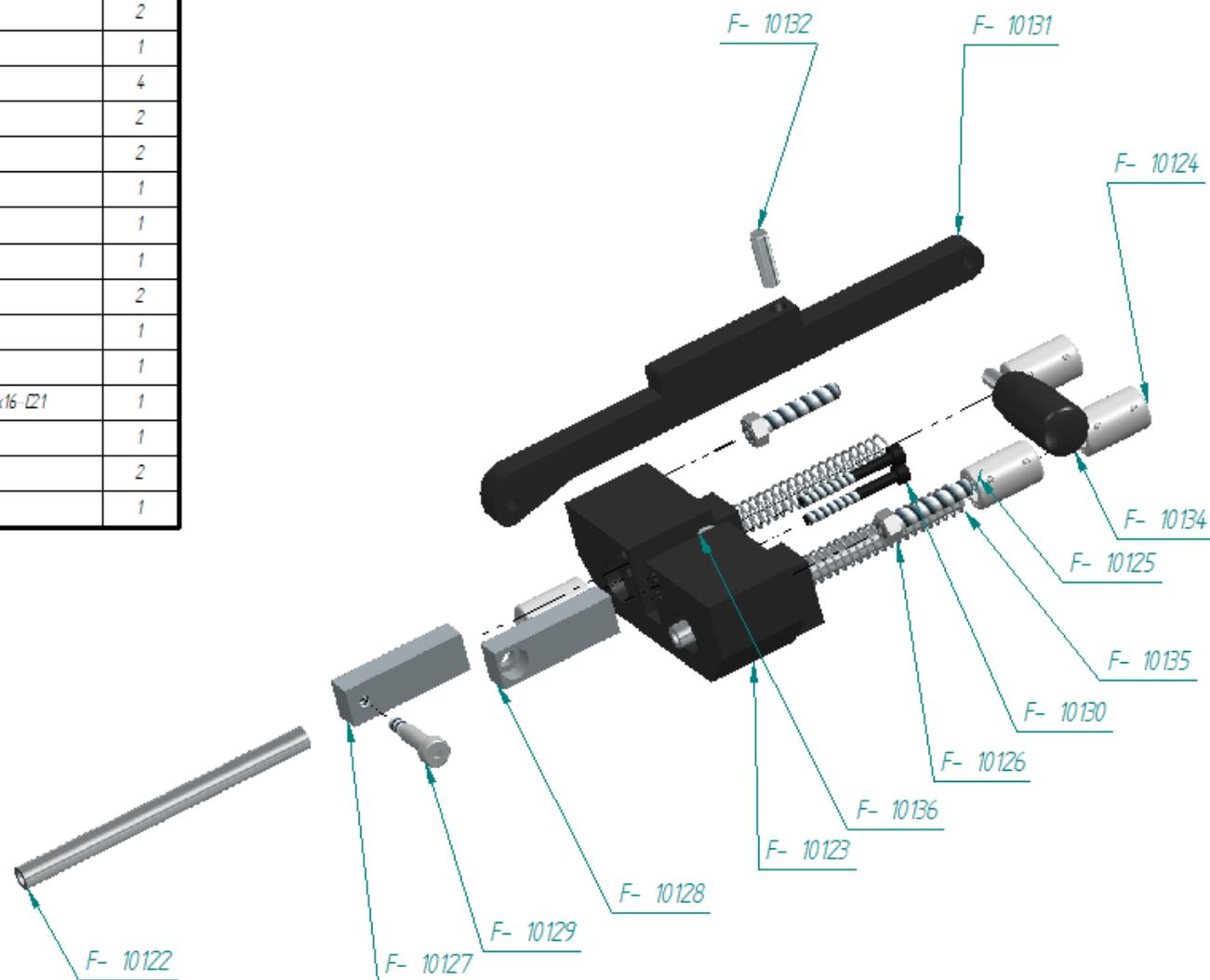


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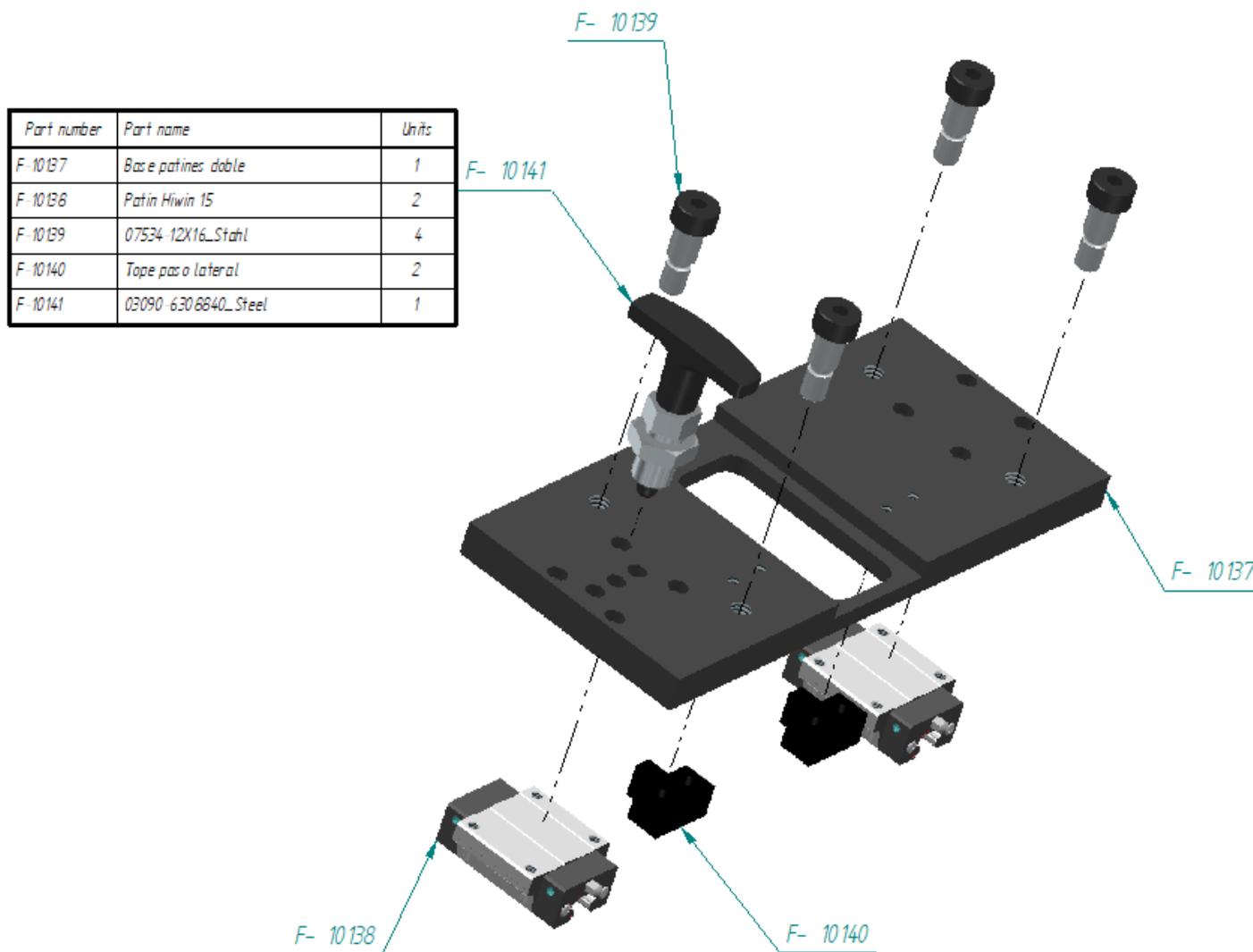
Part number	Part name	Units
F-10121	Vastago paso	1
F-10122	barra guia gatillo	2
F-10123	Carredera gatillo	1
F-10124	bush_kh_0824_0	4
F-10125	M6x35	2
F-10126	934-M6	2
F-10127	Brazo gatillo 2	1
F-10128	Brazo gatillo 1	1
F-10129	07534-06x16_Steel	1
F-10130	912M4x35	2
F-10131	Gatillo nuevo	1
F-10132	perno paso	1
F-10133	Lobe knobs VLT.32 p-M6x16-L21	1
F-10134	L_280_40_p_m6x16	1
F-10135	Muelle paso	2
F-10136	Muelle gatillo	1



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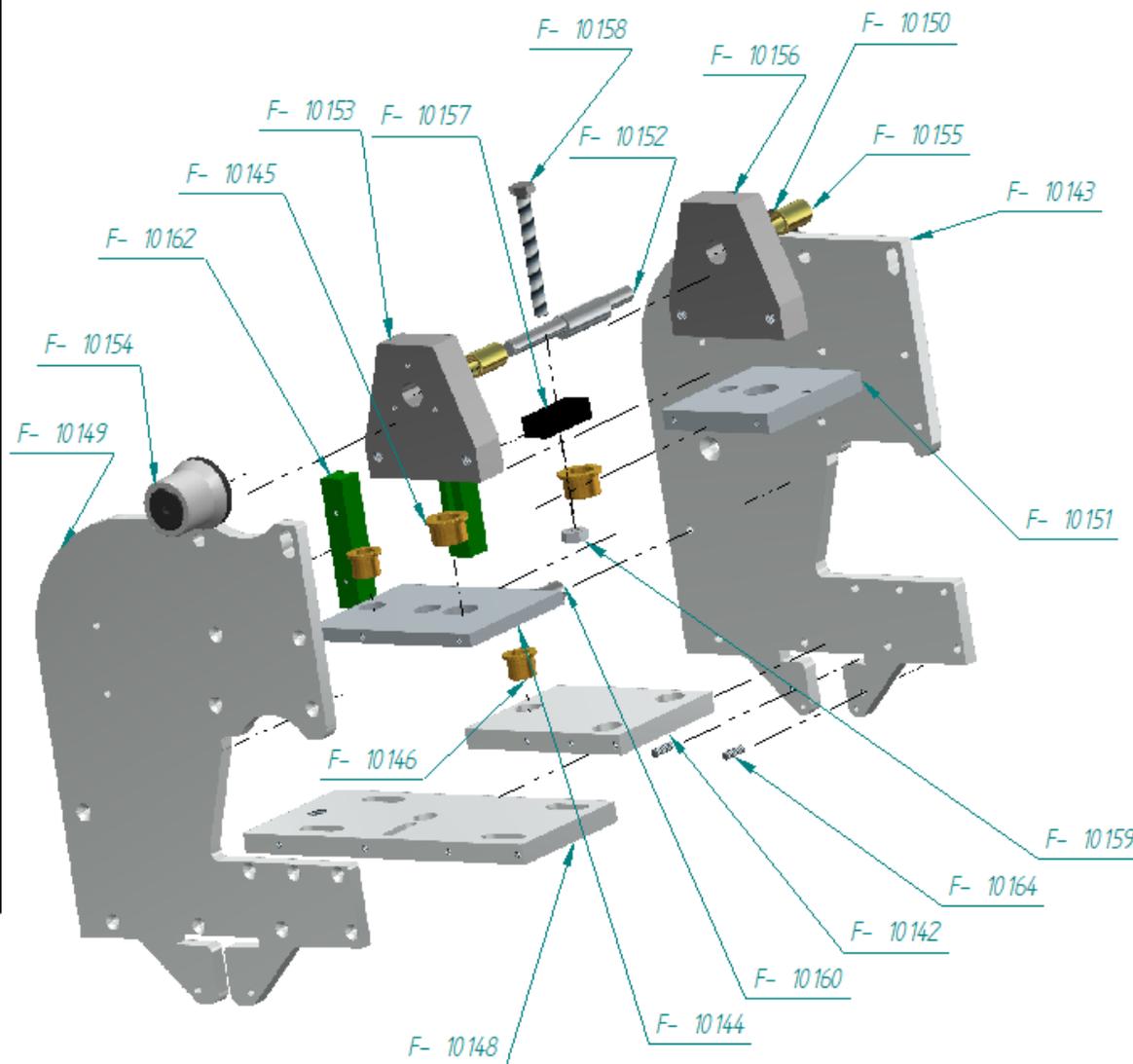


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Part number	Part name	Units
F-10142	BASE DE TROQUELADO	1
F-10143	Lado F-120-2	1
F-10144	Distancial troquel inferior	1
F-10145	Selfoi 20-26-15	2
F-10146	Selfoi 15-20-15	2
F-10147	Vástago paso	1
F-10148	Base cabezal	1
F-10149	Lado F-120-1	1
F-10150	ASA INCLINADA	1
F-10151	Distancial troquel superior	1
F-10152	Eje ajuste presión 2	1
F-10153	Regulador presión	1
F-10154	Indexing mechanism BN 200-52-K12-AS 10	1
F-10155	A-12-16-30	2
F-10156	Regulador presión 2	1
F-10157	Distancial ajuste presión	1
F-10158	933M10X100	1
F-10159	934-M10	1
F-10160	Vasla empuja	1
F-10161	Lobe knobs VCT.32 p-M6x16-L21	1
F-10162	Guía porta-troquel	2
F-10163	934-M6	2
F-10164	M6x20	2

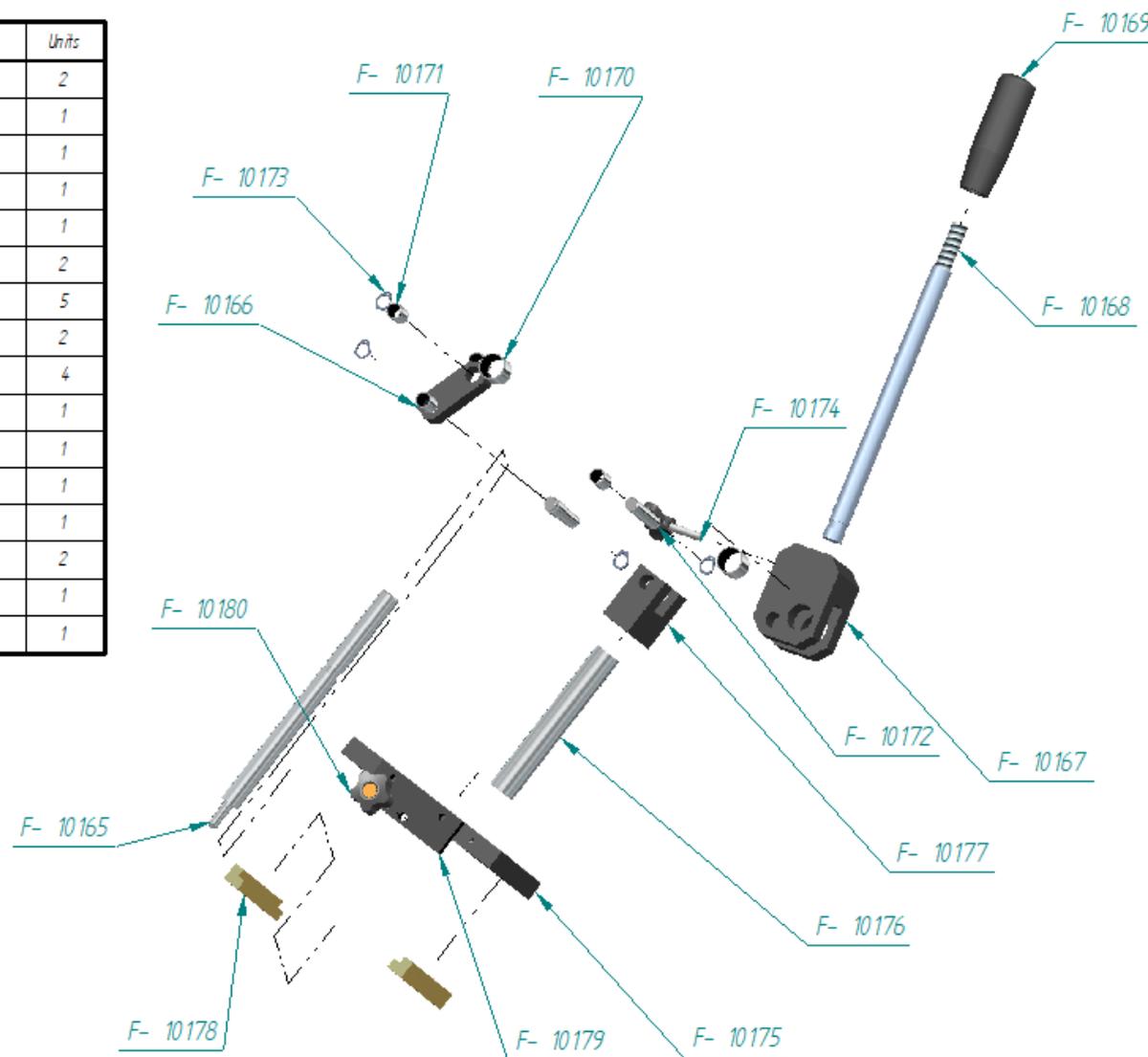


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Part number	Part name	Units
F-10165	Vástago paso	2
F-10166	BISAGRA	1
F-10167	EXCENTRICA	1
F-10168	PALANCA	1
F-10169	L_260_90_m12	1
F-10170	PAP16ISP10	2
F-10171	PAP10ISP10	5
F-10172	Buje 10	2
F-10173	10x1	4
F-10174	Wing nuts EWN.40 p-M6x25-C61	1
F-10175	Distancial troquel	1
F-10176	Eje presión	1
F-10177	Anclaje vástago	1
F-10178	Guía corredera troquel	2
F-10179	Placa tope troquel	1
F-10180	Lobe knobs VCT.32 p-M6x16-D21	1

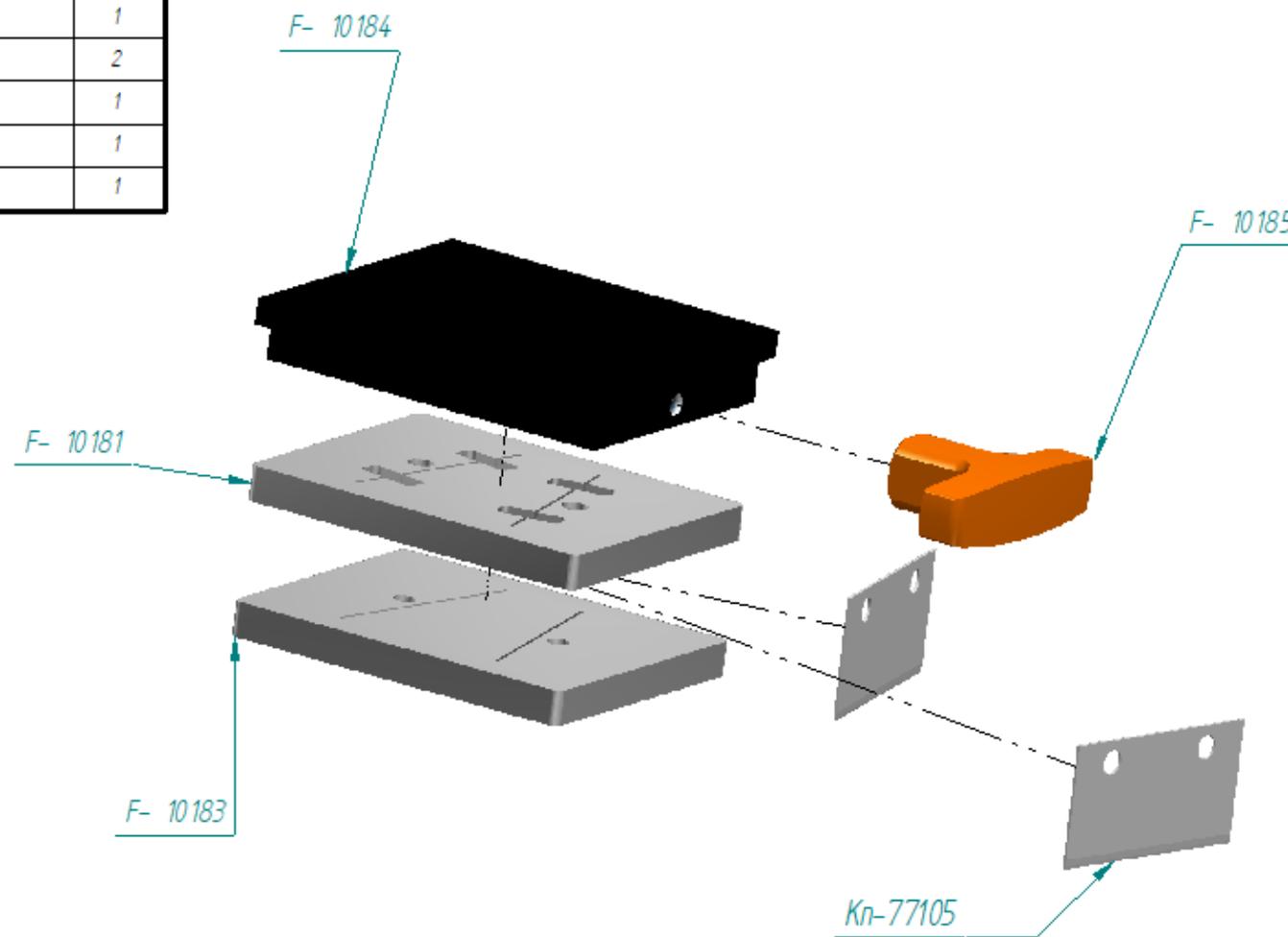


Use and maintenance manual

Manual die cutter

Model: F-121

Part number	Part name	Units
F-10181	50x20-2 F	1
Kn-77105	Kn-77105	2
F-10183	50x20-1 F	1
F-10184	Corredora troquel	1
F-10185	T-Handle L.652_55 B-M6-D2	1



Use and maintenance manual

Manual die cutter

Model: F-121

Part number	Part name	Units
F-10166	F-80x10-1	1
F-10167	F-80x10-2	1
Kn-77102	Kn-77102	2
F-10169	Corredora traquel	1
F-10190	T-Handle: L.652_40 B-M6-C6	1

