AMF® REECE

Better Ideas, Better Made

MODEL S-4000 ISBH+I SM

ELECTRONIC BUTTONHOLE MACHINE

PARTS AND SERVICE MANUAL

MACHINE SERIAL No:

PART NUMBER 97.2486.3.001

01 / 2025

LIMITED WARRANTY ON NEW AMF REECE - CARS EQUIPMENT

Warranty provisions:

A ninety (90) day limited service labor warranty to correct defects in installation, workmanship, or material without charge for labor. This portion of the warranty applies to machines sold as “installed” only.

A one (1) year limited material warranty on major component parts to replace materials with defects. Any new part believed defective must be returned freight prepaid to AMF Reece - Cars for inspection. If, upon inspection, the part or material is determined to be defective, AMF Reece - Cars will replace it without charge to the customer for parts or material.

Service labor warranty period shall begin on the completed installation date. Material warranty shall begin on the date the equipment is shipped from AMF Reece - Cars.

Exclusions:

Excluded from both service labor warranty and material warranty are: (1) Consumable parts which would be normally considered replaceable in day-to-day operations. These include parts such as needles, knives, loopers and spreaders. (2) Normal adjustment and routine maintenance. This is the sole responsibility of the customer. (3) Cleaning and lubrication of equipment. (4) Parts found to be altered, broken or damaged due to neglect or improper installation or application. (5) Damage caused by the use of non-Genuine AMF Reece parts. (6) Shipping or delivery charges.

There is no service labor warranty for machines sold as “uninstalled”.

Equipment installed without the assistance of a certified technician (either an AMF Reece - Cars Employee, a Certified Contractor, or that of an Authorized Distributor) will have the limited material warranty only. Only the defective material will be covered. Any charges associated with the use of an AMF Reece - Cars Technician or that of a Distributor to replace the defective part will be the customer’s responsibility.

NO OTHER WARRANTY, EXPRESS OR IMPLIED, AS TO DESCRIPTION, QUALITY, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, OR ANY OTHER MATTER IS GIVEN BY SELLER OR SELLER’S AGENT IN CONNECTION HEREWITH. UNDER NO CIRCUMSTANCES SHALL SELLER OR SELLER’S AGENT BE LIABLE FOR LOSS OF PROFITS OR ANY OTHER DIRECT OR INDIRECT COSTS, EXPENSES, LOSSES OR DAMAGES ARISING OUT OF DEFECTS IN OR FAILURE OF THE EQUIPMENT OR ANY PART THEREOF.

WHAT TO DO IF THERE IS A QUESTION REGARDING WARRANTY

If a machine is purchased through an authorized AMF Reece - Cars distributor, warranty questions should be first directed to that distributor. However, the satisfaction and goodwill of our customers are of primary concern to AMF Reece - Cars. In the event that a warranty matter is not handled to your satisfaction, please contact AMF Reece - Cars office:

Prostejov, Czech Republic
Phone: (+420) 725-088-560
E-mail: info@amfreece-cars.cz

Warranty Registration Card

((Please E-mail immediately after installation)

Note: All Warranty Claims void, unless Registration Card on file at AMF Reece - Cars HQ

Machine model number:
(Deco 3000, S-4000, S-4002, EBS Mark II, etc.)

Manufacturer‘s serial or production number:

Installation Site Information:

Customer‘s Name:

Customer‘s Mailing Address:

Customer‘s Telephone Number:

Supervising Mechanic‘s or Technician‘s Name:

Signature of Supervising Technician:

AMF Reece - Cars Technician‘s Name:

AMF Reece - Cars Technician‘s Signature:

Type of garment produced at this location?

Average Daily Production Expected from this machine?
(number of buttonholes, jackets sewn, pants produced, buttons sewn, etc)

Any special requirements required at this location?

What other AMF Reece Machines are at this location?

How can we serve you better?

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A - INTRODUCTION

1. BASIC INFORMATION

The sewing machine S4000 ISBH+I SM is designed and produced to be very reliable. Important design goals have been to provide a safe machine that is simple and inexpensive to maintain.
The patented rotary needle bar shaft drive, a major benefit, delivers longer needle bar life. The added benefits of lower vibration and less noise, translate into less operator fatigue.
Simple buttonhole length adjustment located outside the machine, eliminates the need for tilt back, while the quick stop repair function delivers safety and makes repairs easier.

Special electronic and mechanical safety devices protect the operator and the machine. There is a special power lock out switch that permits the machine to be locked in the off position, so that it cannot be cycled accidentally. There is an emergency off switch. There is a low air pressure detector that will not permit machine operation if air pressure is dangerously low.
There are safety-warning labels on the machine in all areas that require special care. These must not be removed. If they are lost replace them immediately.
You are the most important safety equipment of all. Be sure you understand the proper operation of the machine. Never remove safety mechanisms or labels. We have made every effort to provide the safest possible machine, but without complete knowledge of how this machine operates, and the use of proper care by the operator, this machine can cause serious injury or death. That is why there are safety warnings throughout these instructions that carry one of these messages.

There are four categories of safety instructions in this manual:

DANGER! Ignoring instructions may endanger operator's life.

CAUTION! Ignoring instructions may cause a serious injury of the operator or damage the machine.

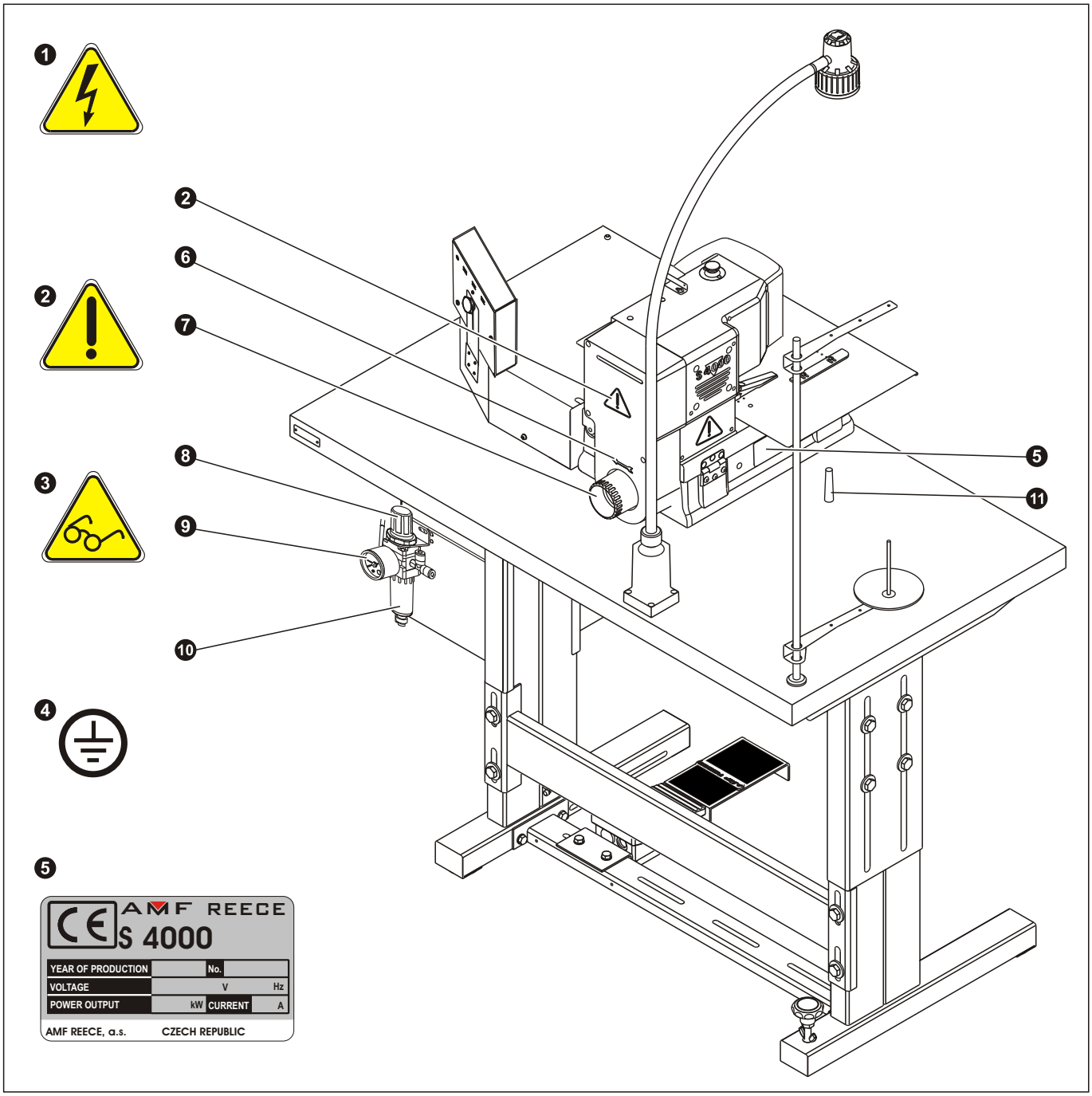
WARNING! Ignoring instructions may cause damage on the machine or injury of the operator.

NOTICE! Breaking procedures may cause functional problems of the machine.

We recommend that servicemen from AMF Reece supervise the installation of the machines and initial training of your mechanics and operators.
The most effective method ensuring safety of operators working on the machine is a strict safety program including instructions for safety operation. Operators and servicemen should wear safety glasses.

A - INTRODUCTION

2. SAFETY DEVICE AND LABELS

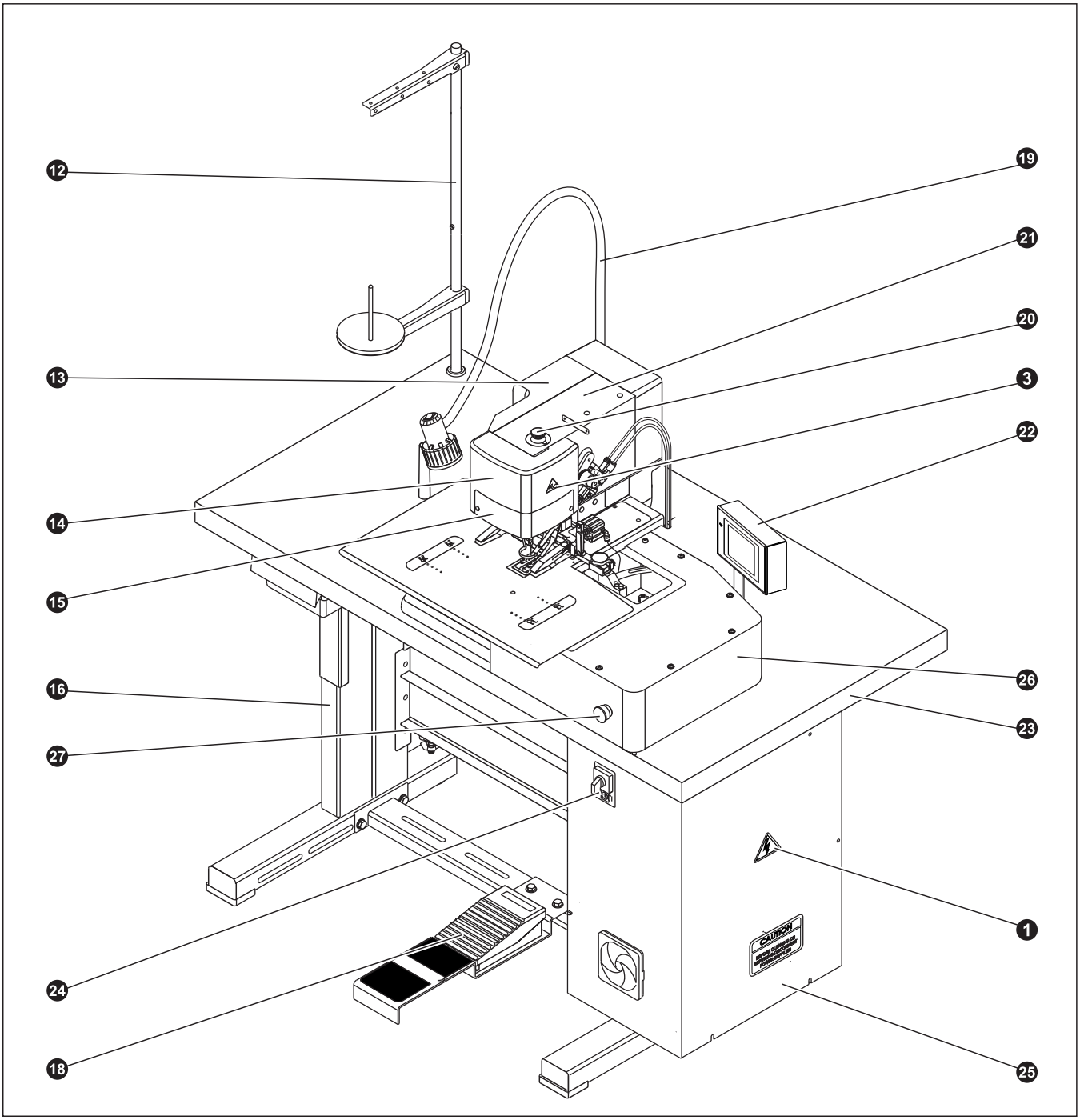


1. Warning
2. Covers removed, possible injury
3. Warning when opening cover eyes injury danger
4. Grounding
5. Standard label
6. Rotation direction
7. Hand wheel
8. Air pressure adjustment knob
9. Manometer with pressure sensor
10. Air pressure regulator
11. Rest pin
12. Thread stand
13. Head cover
14. Needle bar cover

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A - INTRODUCTION

3. GENERAL MACHINE PARTS DESCRIPTIONS



⓯ Eye guard
⓰ Table
⓲ Foot pedal
⓳ Halogen lamp Button
⓴ Emergency Stop Button
㉑ Machine head
㉒ Control panel
㉓ Table top
㉔ Main Switch
㉕ Control box
㉖ Indexer
㉗ Cycle interruption switch

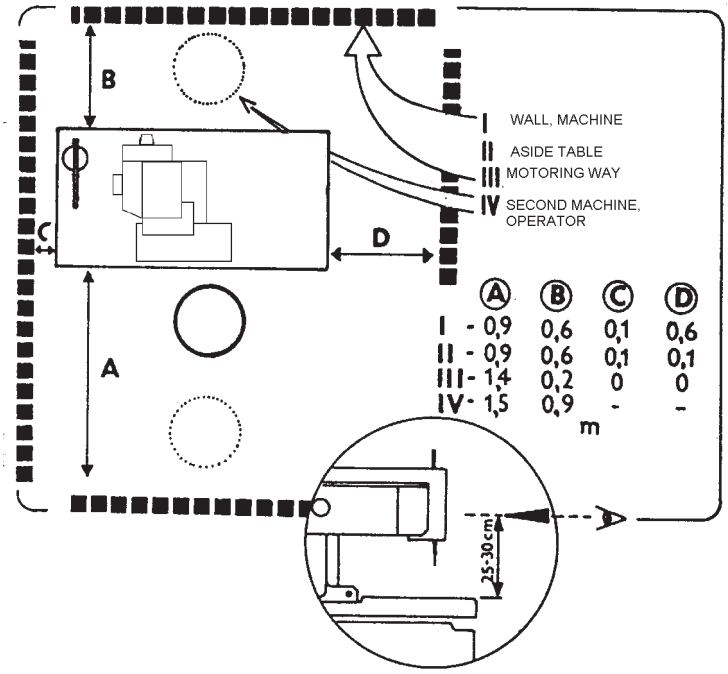
4. TECHNICAL CONDITIONS

Machine type	S 4000 ISBH+I
Description	Electronic controller chains stitch straight buttonhole machine for sewing imitation buttonholes on cuff Wiggins. With the automatic indexer, preset programs automatically control the sewing of multiple buttonholes either straight or on an angle
Sewing speed	1500-3800 stitches/min (500 - 1900 rev/min of the drive shaft)
Buttonhole length	15.8 - 25 mm (5/8” - 1”)
Stitch density	3 - 12 stitches/cm (8 - 35 spi)
Type of the buttonhole	Single thread chain stitch without center cutting
Machine clamp foot height	12.7 mm (1/2”)
Maximum work thickness	to 3 mm (1/8”)
Bite range	1.7 - 2.3 (1/15” - 3/32”)
Distance between the first and the second row of stitches	0 - 0.9 mm
Recommended thread	Thread size 80, 100, 120
Needle system	Needle 750 SC 90/14 (it is possible to order 80/12; 70/10)
Lubrication	Semi-automatic
Operating Conditions	According to IEC 364-3, IEC 364-5-51 temperature from +5°C to 40°C, relative air humidity from 30 to 80 %
Air pressure	0.55 MPa (80 PSI) Indexer 0,4 Mpa (58 PSI)
Machine db level	Laeg = 74dB; LWA = 87dB; LpC, peak = 103dB
Machine head dimension	340 mm (height) x 470 (width) x 250 mm (length)
Machine head weight	62 kg
Table Dimension	700 mm (height) x 600 mm (width) x 1100 mm (length)
Electrical Requirements	1NPE~60Hz 230V/TN-S (according to EN 60204-1)
	1NPE~50Hz 230V/TN-S (according to EN 60204-1)
Line Circuit Breaker	10A characteristic C (according to EN 60947-2)
	16A characteristic B (according to EN 60947-2)
Indexer number of buttonholes	1 — 8
Distance between buttonholes	4 — 63 mm
Max. indexer feeding	63 mm
Indexer dimension	114 mm (height) x 400 mm (width) x 383 mm (length)

A - INTRODUCTION

5. INSTRUCTIONS FOR OPERATOR SAFETY AND MAINTENANCE

When installing the machine we recommend the minimum clearances noted above around the machine. Read all of the instructions that follow. DO NOT PUT THE MACHINE INTO OPERATION UNTIL YOU ARE COMPLETELY FAMILIAR WITH ALL INSTALLATION AND OPERATING INSTRUCTIONS.



DANGER!

- Before connecting the machine to the power supply, be positive that all safety covers are correctly installed.
- Always engage the power lockout switch, or disconnect the main power supply, before removing any safety covers.

WARNING!

- Locate the Emergency Stop button. Be sure you know how to use it.
- Be sure that you have a reliable and uniform power supply.
- Be sure that all electrical supply lines are in good condition and have no signs of damage to avoid electrical shock.
- If any covers become damaged, they must be repaired or replaced immediately.
- Do not touch moving parts of the machine while it is operating.
- Keep clear of the needle.
- Always switch off the main power before changing the needle.
- Before cleaning the machine or performing service to the machine, engage the power lock out switch or disconnect the main power supply.
- When the machine is not in use engage the power lock out switch or disconnect the main power supply.
- When this machine is used incorrectly, or is incorrectly maintained, it can be dangerous. Everyone who uses this machine, or maintains this machine, must be completely familiar with this manual.

CAUTION!

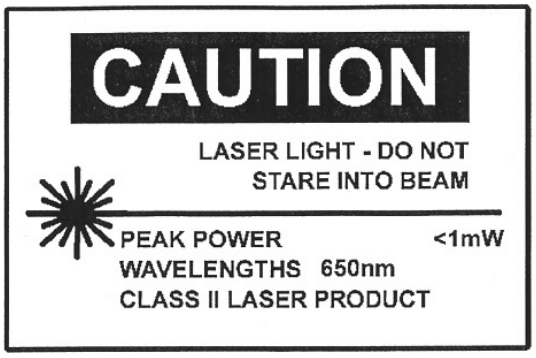
- Perform all regular service as described by this manual.
- If there is any problem with the power supply, turn off the main power switch.
- Do not remove, paint over, damage or in any way change safety labels. If a safety label cannot be easily read, replace it.
- Long hair and loose clothing may be dangerous near any machinery. Always contain long hair and avoid loose clothing, so that it cannot be caught by machinery and cause injury.
- Never use this machine while under the influence of drugs or alcohol.
- If anything seems to be operating incorrectly in the machine call for maintenance assistance immediately.
- Be sure that there is adequate light for safe operation. A normal minimum light level is 750 lux.

A - INTRODUCTION

CAUTION: LASER RADIATION

DO NOT VIEW DIRECTLY WITH OPTICAL INSTRUMENTS

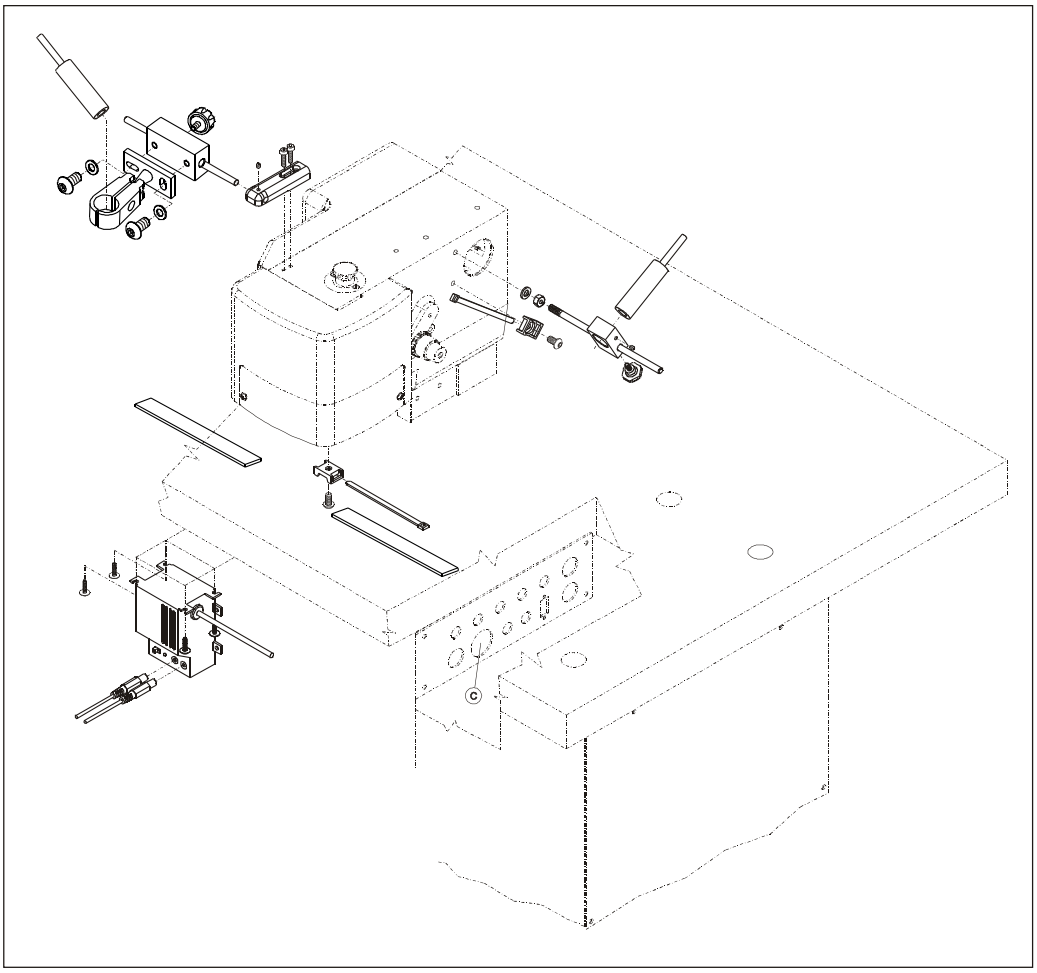
Read carefully the supplemental rules described below before setting up laser system.



C.C. E.A. laser product has been designed and manufactured specifically for the work place and for use in working, conditions.
It complies to the existing work safety regulation included in directive 73/23 and subsequent 93/68.
It has been made following to the International Standart CE/EN 60825.

Use C.C.E.A. laser system belong Class II. To this class emit low-power beam =/< lmW to be seen into the visible spectrum. They are not considered dangerous if just the laser beam will be accidentally (fraction of second) pointed at the eyes. The palpebral
reflection would not allow a length of exposure higher than 0,25 seconds. It is absolutely necessary wearing specific safety glases (with declared wavelength and filter), when eyes are directly and lasting exposed at the laser radiation.
Our Lasers are followings: 650 nm.

LABELLING:
The label showing the laser class must bepermanently attached so as to be clearly visible and readable when the system is working, for maintenance and other needs. Labels must be see without a direct exposure at the laser radiation.



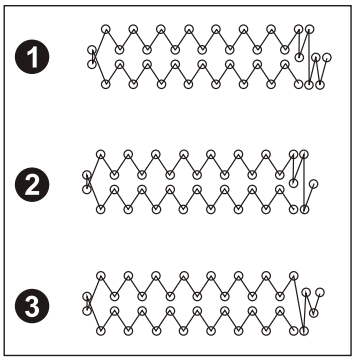
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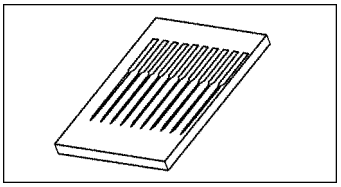
6. SPECIAL ACCESSORIES

- machine device, which is not included in the standard equipment of the machine and a customer can order it

Sewing cam
- it is possible to sew a different buttonhole shape ❶, ❸ than standard buttonhole ❷ is
- a cutomer can order it - ❶ part number 24.3079.0.000
  - ❸ part number 24.3080.0.000
- to change a cam - see section E20

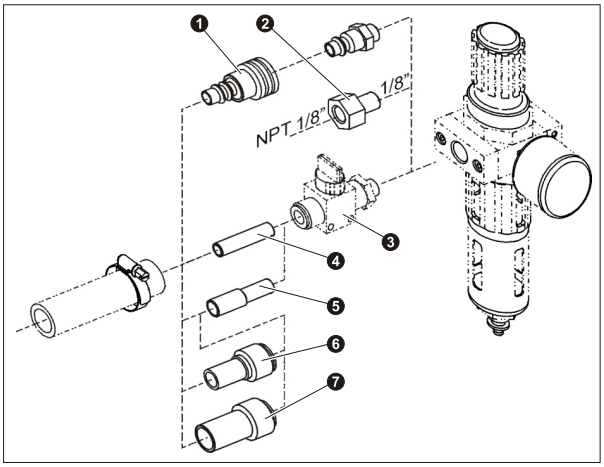


Needles 750 SC 80/12, 70/10
- the manufacturer recommends to use these needles when sewing the thin materials
- part number 02.0750.2.100 (80/12), 02.0750.2.109 (70/10)



Connector Ø 8 ❶
- order it if the connecting tube has the inner diameter 8 mm. The connector Ø 10 is supplied with the machine.
- part number is 12.0008.3.607

Pneumatic Adapater ❷
- order it if using 1/8“ NPT
- part number 12.0008.3.081



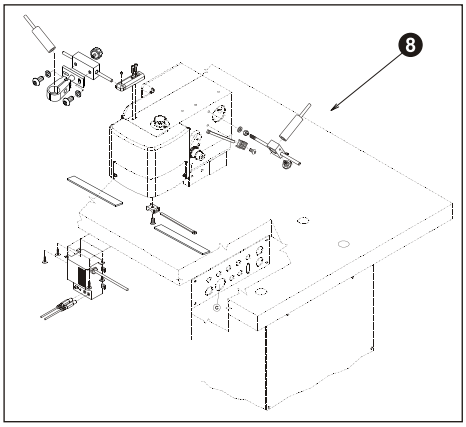
Hand valve ❸
- to dissipate any air from the machine, order it (air circuit is bled). It is necessary to order the connectors (see below) to the hand valve for connection to the air tubes.
- part number 12.0008.3.463

Connectors

❹ 12.0008.3.464 Ø 8
for connection to the tube with inner Ø 8 mm
❺ 12.0008.3.466 Ø 10
for connection to the tube with inner Ø 10 mm
❻ 12.0008.3.467 Ø 12
for connection to the tube with inner Ø 12 mm*
❼ 12.0008.3.465 Ø 16
for connection to the tube with inner Ø 16 mm*

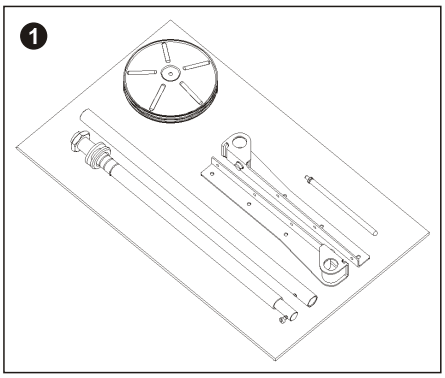
* To connect the tube with inner Ø 12 and Ø 16, it is also necessary to order Ø 10

Laser light kit
❽ 03.5519.0.022



B - MACHINE ASSEMBLY

1. CONTENT OF THE SHIPPING BOX



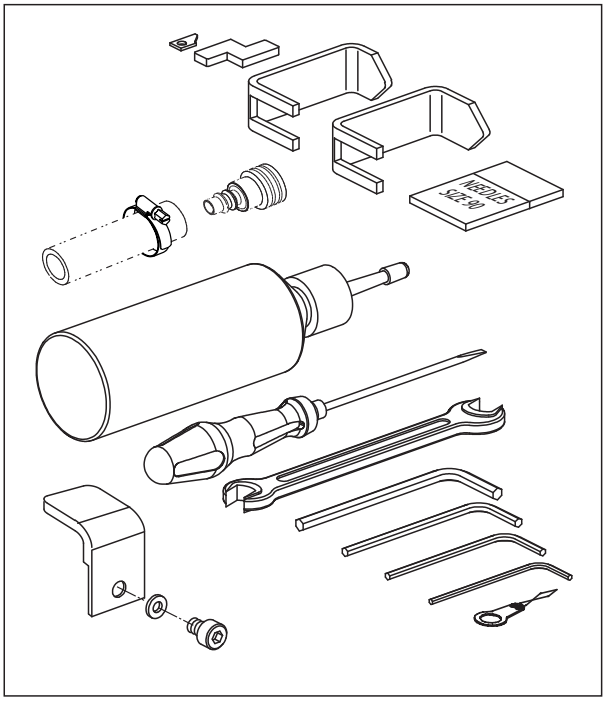
1. The shipment contains one box.
2. There is a carton with accessories, service manual with parts section and thread stand ❶ in the box.
3. During unpacking the shipment, follow the labels which are on a cover.

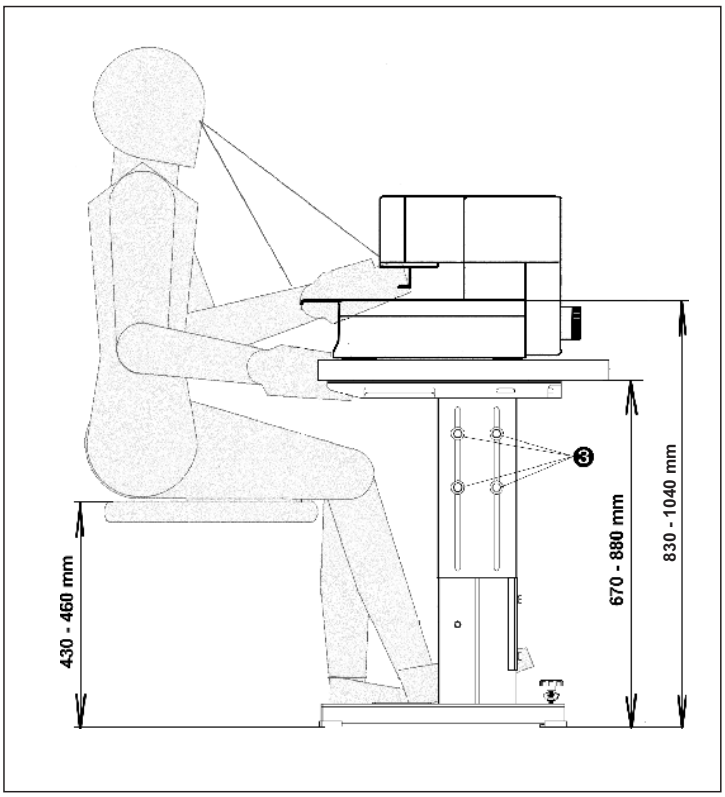
CAUTION: If the machine or crate was damaged in shipment inform the freight company immediately. Check the contents of the crate immediately and report any damage or missing items to the manufacturer immediately, late reports will not be considered.

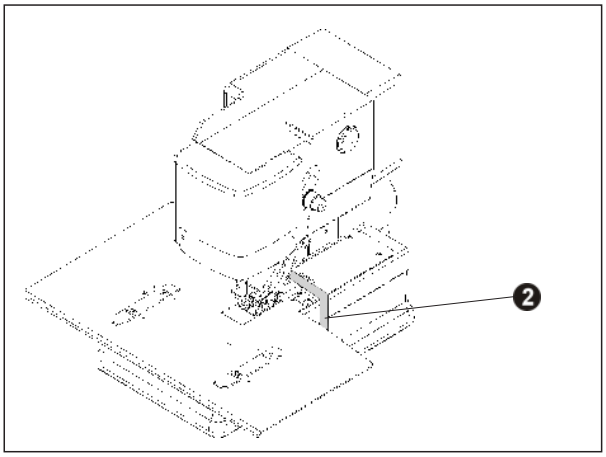
2. ACCESSORIES

A package of accessories is supplied with this machine, please refer to page **3-63** for detailed descriptions.

The height of the working area is standardly set in range 830 - 850 mm from the manufacturer. When using this height of the working area, recommended height of the operator seat is in range 430 - 460 mm. The height of the table can be set in range 670 - 880 mm by screws ❸. Remove the shipping strap ❷ after unpacking the machine, the use of this strap is recommended anytime the machine is transported.





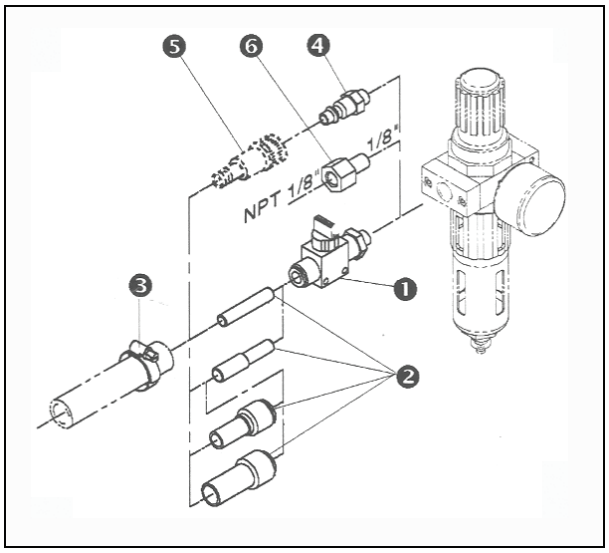


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B - MACHINE ASSEMBLY

3. POWER AND AIR CONNECTION

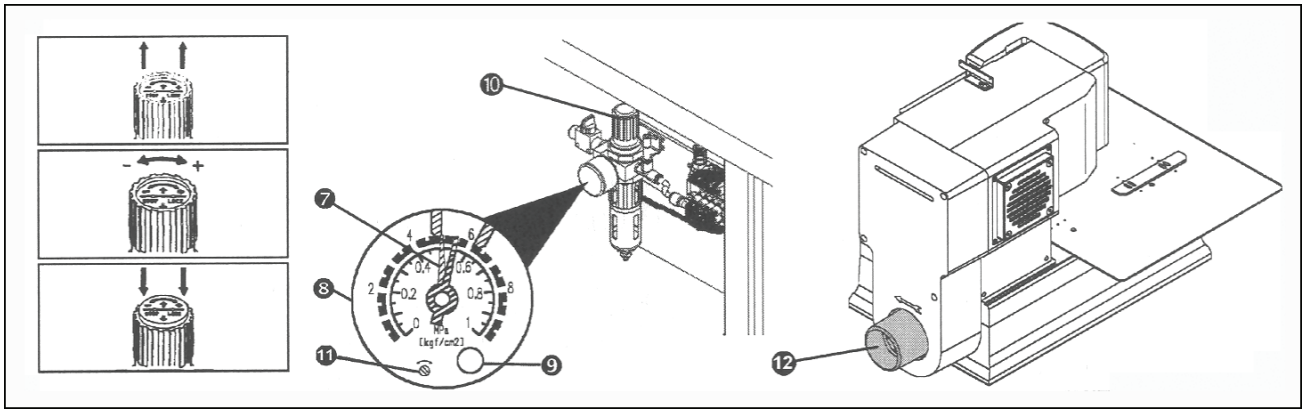
1. The machine is equipped with a quick coupler ❹ required with connector for inner Ø of the tube 10. The connector for inner Ø of the tube 8 is not supplied with the machine, a customer has to order it. The manufacturer recommends to use connector ❻ for who requires to connect the tube with connector NPT. If a customer needs to use a shut off valve ❶, which allows fast releasing of the air from the circuit, he must order it.
A variety of connectors ❷ can be used separately or in combination to adapt to the available input supply hose.
It depends on type of the tube which is used by a customer. These connectors are not included in the accessories. A tubing clamp ❸ is provided.



NOTE:
Parts ❶, ❷, ❺, ❻ are included in Extra Parts - see page 3-64.

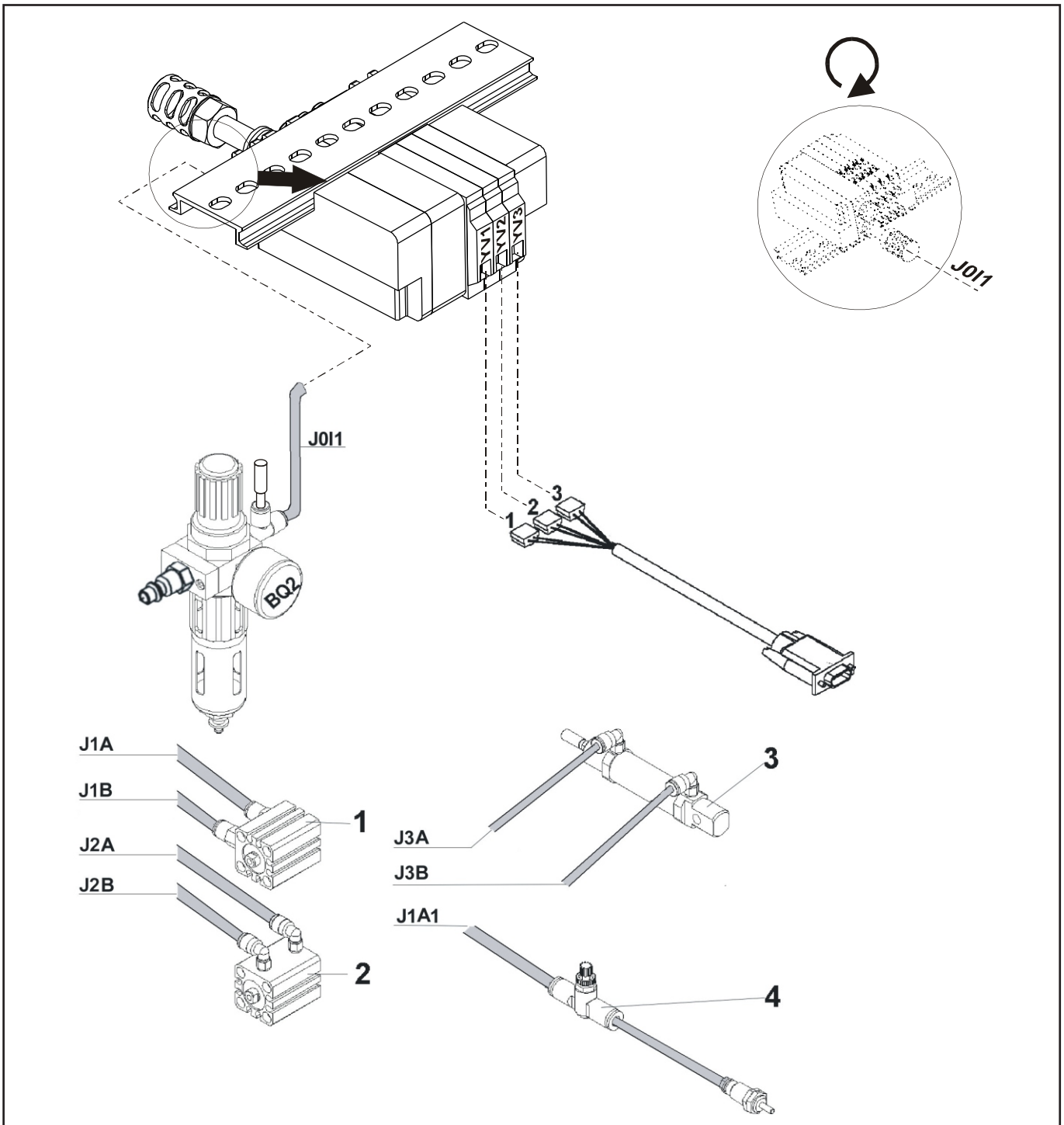
2. After air connection check the set air pressure on the dial of the regulator. It should be in range 0.5 - 0.6 MPa. The green pointer ❼ indicates the lowest working air pressure 0.5 MPa, which is set from the manufacturer on the regulator ❽. If the air pressure is lower than 0.5 Mpa after connecting the machine to the power supply „Low Pressure“ message appears on the control panel display. To adjust the working pressure, loosen the regulator cap lock ❿ and turn the regulator cap clockwise to increase the pressure. Push the regulator cap ❿ down.

3. Power supply must be 208 to 230 volts 1 phase, 50 or 60 hertz. Receptacle plug must meet requirements of IEC standard 364-4-41, its circuit breaker must be minimal 10A with characteristic C according to the EN 60947-2 (or 16A with characteristic B). No other devices must not be connected to the circuit breaker of the socker. The hand wheel ⓬ must turn counter clockwise.
The machine is equipped with a filters which contain capacitors which generate an high frequency leakage current. In order to prevent nuisance tripping, residual current protection device must be protected against these high frequency currents: this is the case for industrial residual current device (example „S“ type).



B - MACHINE ASSEMBLY

4. Head Pneumatic



❶ - thread draw-off, tension release
❷ - clamp feet 1
❸ - thread
❹ - speed controller
J0I1 - J0I2 - air input
BQ2 - regulator with air pressure switch

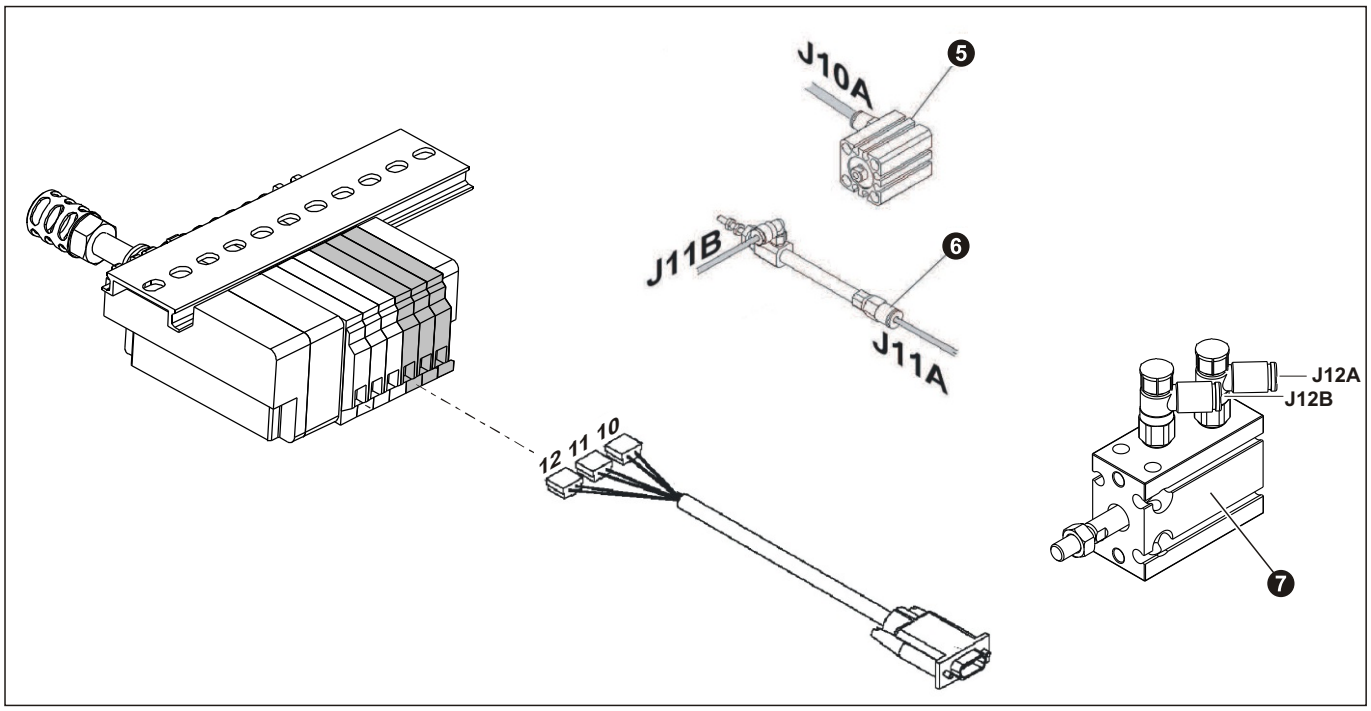
Tubes identification

J X X X
- air distribution
- 0, 1, 2 — X => distribution from a regulator
- 0, 1, 2 — X pneumatic cylinder identification (first number is 0 but is not marked)
- A ; B; C

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B - MACHINE ASSEMBLY

5. Indexer Pneumatic



❺ - clamp feet
❻ - thread pick-up (Extra part)
❼ - angle indexer clamp-feet swiveling

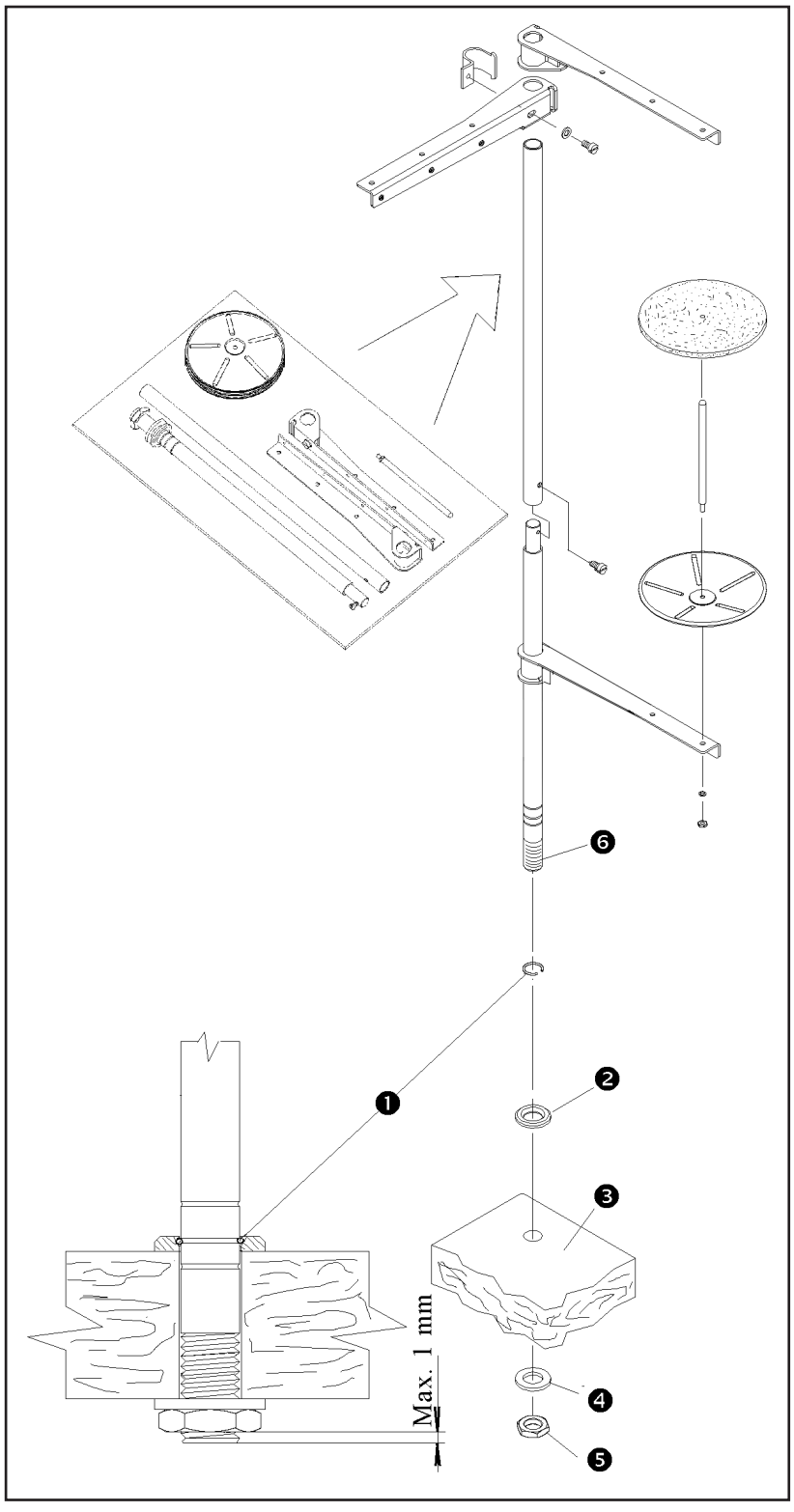
B - MACHINE ASSEMBLY

4. THREAD STAND INSTALLATION

1. Put the thread stand together according to the drawing.

2. Position of the locking ring ❶ allows assembly of the thread stand for various thickness of the table top. Threaded end of the post ❻ must not extend more that 1 mm (1/32) through the locking nut ❺.

3. Insert the washer ❷ and the post into the hole provided in the right rear of the table top ❸. Insert the washer ❹ and tighten the nut ❺.



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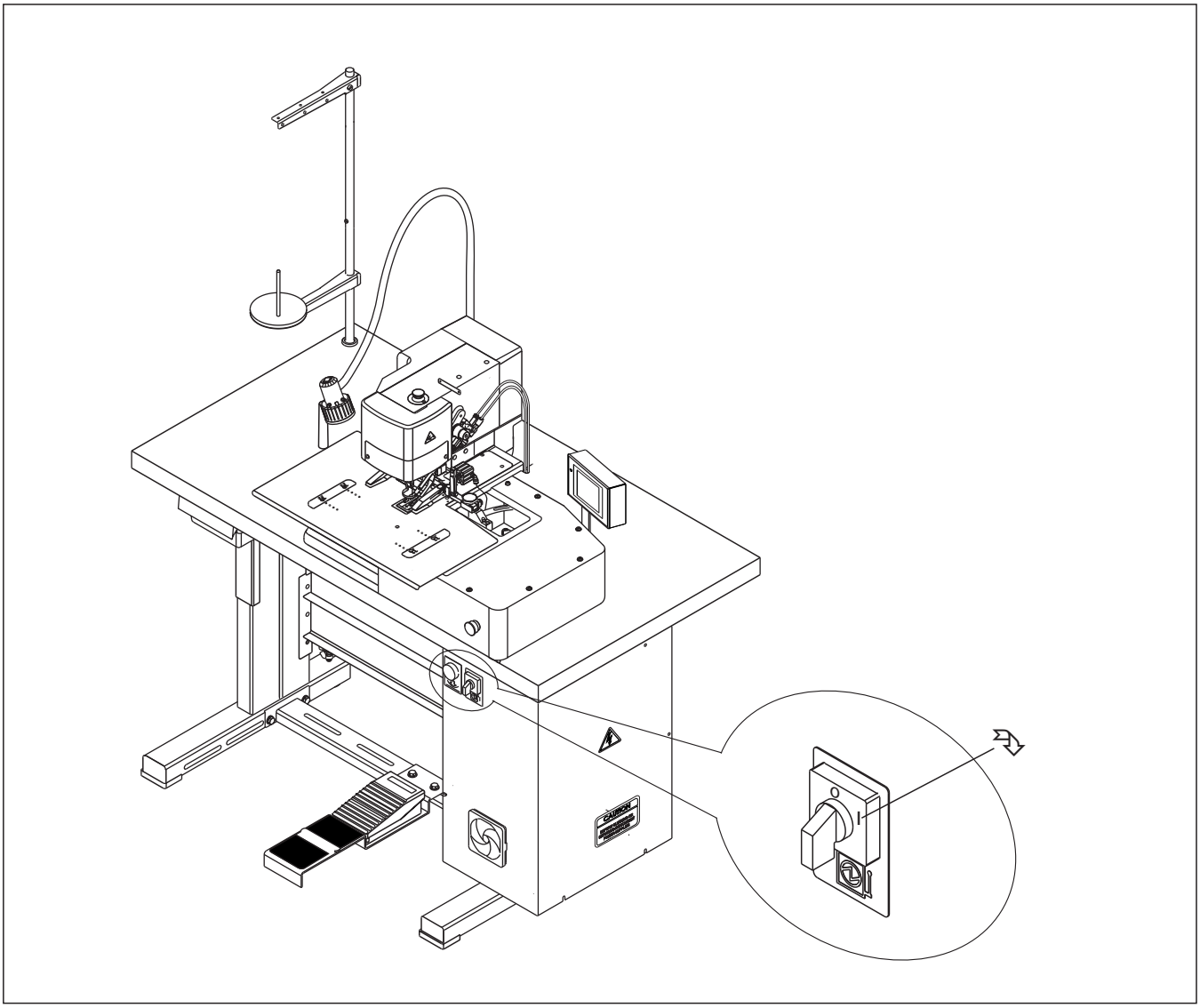
C - PROPER APPLICATION

1. POWER UP / HOME POSITION

1.1. Turn the main power switch on ❶  by turning clockwise to the **I** position.

1.2. The machine is ready for operation when the control panel display lights, the Ready message appears on the display.

1.3. The machine must be in the home position before starting to sew (to be certain, press the foot treadle and sew one dummy buttonhole).



C - PROPER APPLICATION

2. NEEDLE INSTALLATION

WARNING! Before performing this adjustment, switch the main machine power off to prevent accidental starting of the machine. Disconnect the air supply and dissipate any stored energy.
Use needles ordering number 02.0750.2.110 (750SC 90/14) only - see accessories.
It is also possible to use needles ordering number 02.0750.2.100 (750 SC 80/12),02.0750.2.109 (750 SC 70/10) for sewing the thin materials - these needles are not included in the standard machine equipment.

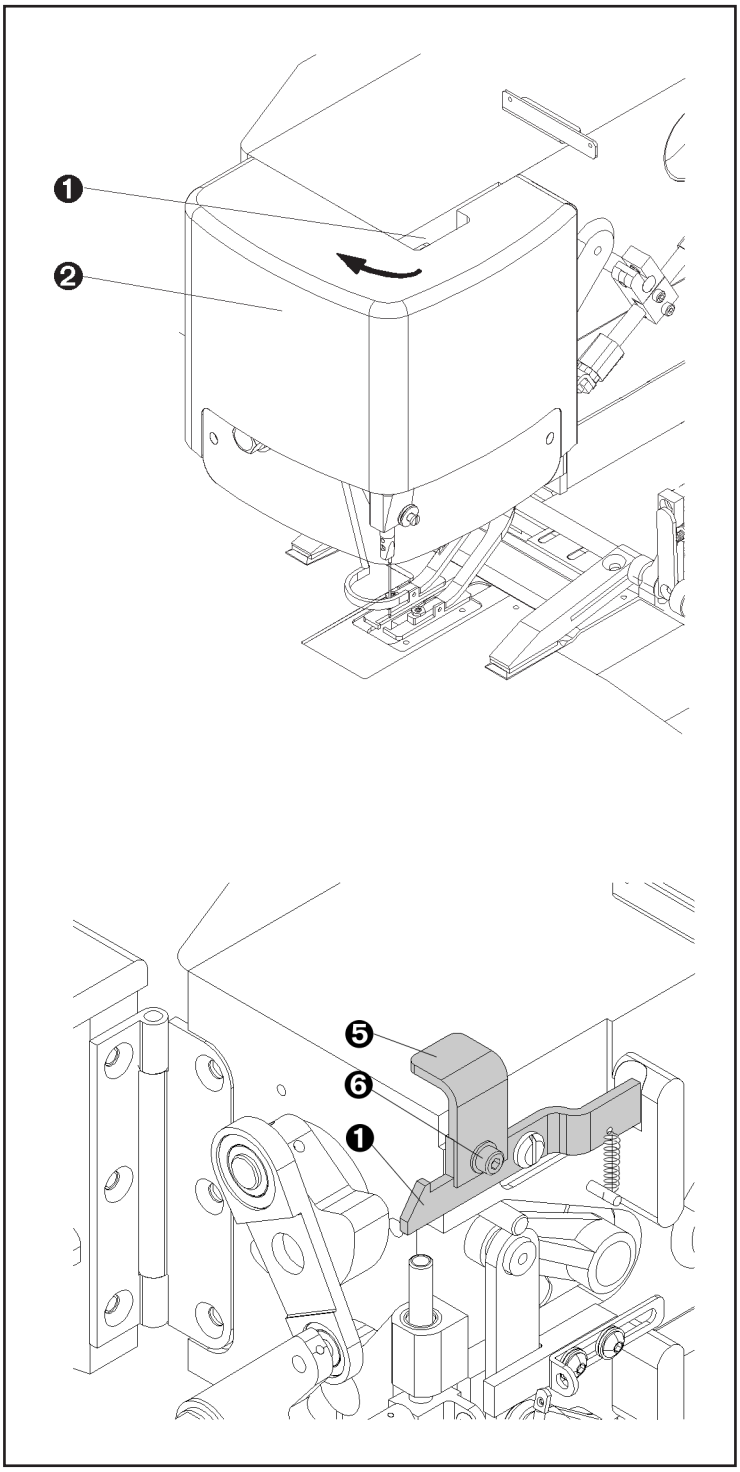
1. Using the screwdriver push the latch ❶ and open the needle bar cover ❷.

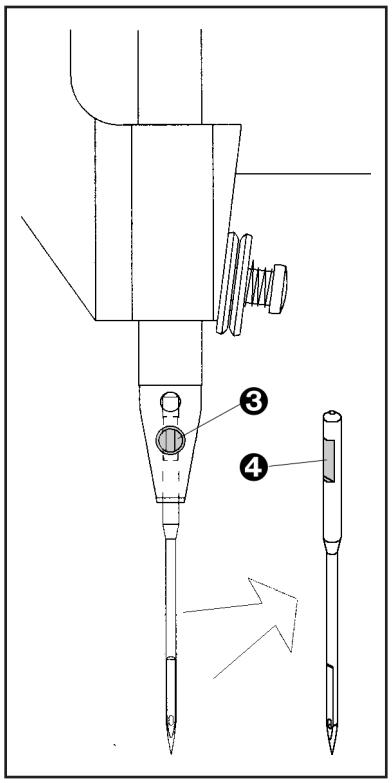
Note: The accessories contain the lever ❺ (ordering number 22.0213.0.000) and screw (ordering number 08.6000.4.005) with washer (08.6850.4.000) ❻, which is possible to fit to the latch. It allows opening of the cover without using the tool.

2. Loosen the screw ❸ and remove the needle.

3. Insert the new needle so that the long thread groove ❹ is in the rear and the spot for the clamping screw ❸ is in line. Do not install a bent or broken needle. Roll the needle on a flat surface to check for straightness.

4. Tighten the screw ❸ well.



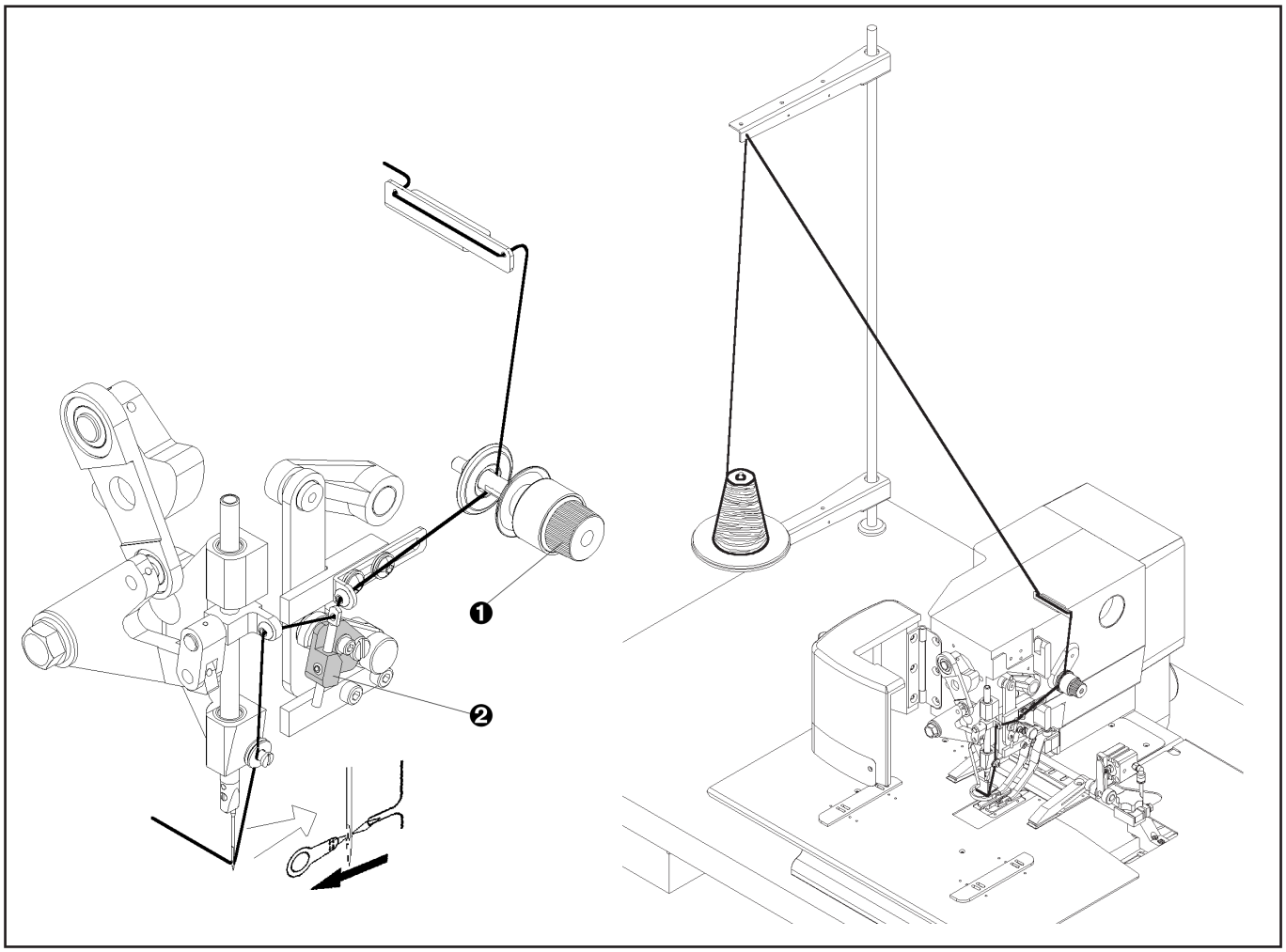


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C - PROPER APPLICATION

3. THREADING

WARNING! Switch the main machine power off to prevent accidental starting of the machine. Disconnect the air supply and dissipate any stored energy.
When threading, see the pictures below. Change the thread tension by nut ❶ according to the sewing conditions. To increase the thread draw off (for example sewing on the thin fabrics) there is an arm ❷ installed on the thread draw off lever.



The appearance and quality of the buttonhole may be affected by one or more of the following:

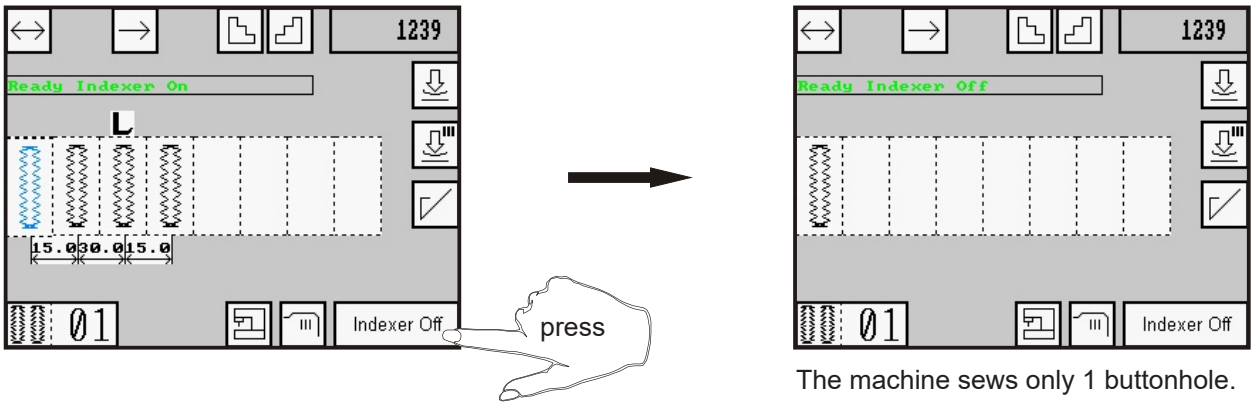
- clamping of the material
- bartack quality
- thread tension
- type of thread (size, etc.)
- sewing width
- sewn material (thickness, density)

D - MACHINE CONTROLS

1. HOW TO SEW A BUTTONHOLE

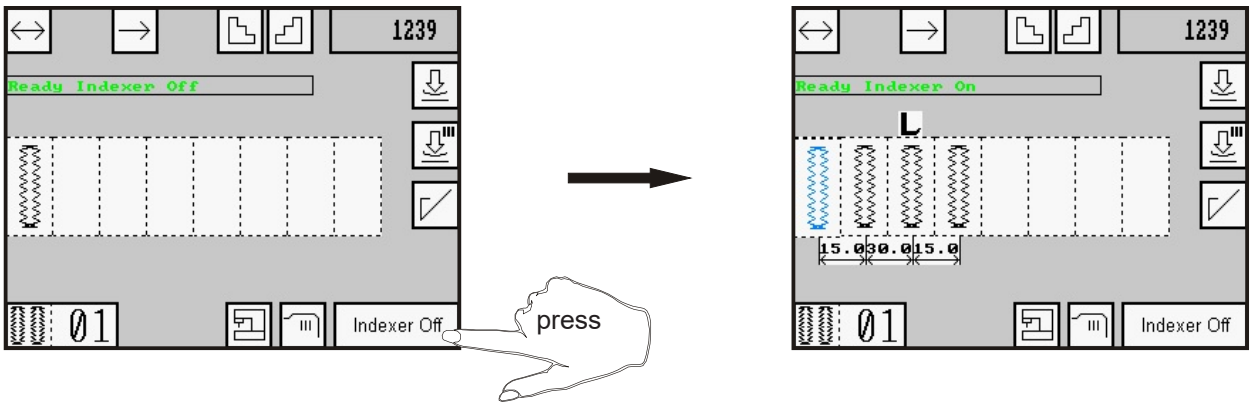
1.1. Bring the machine to the home position according to the section C1.

a) sewing without indexer
Check, if the message Ready indexer Off appears on the display. If not, follow steps below:



The machine sews only 1 buttonhole.

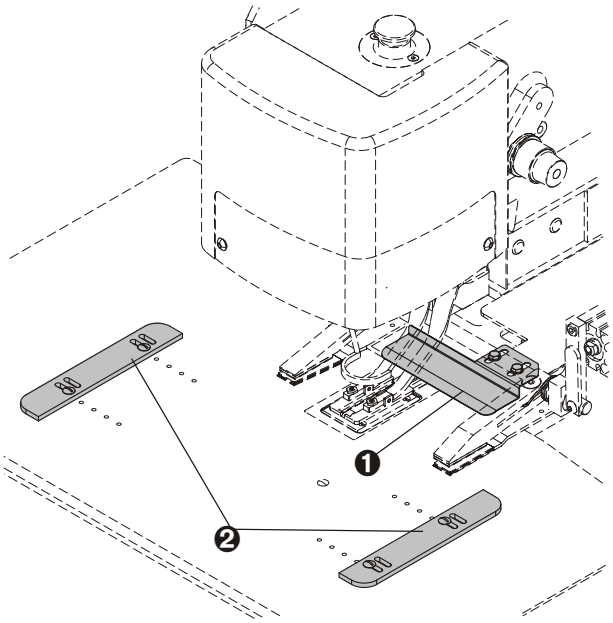
b) sewing with indexer
Check, if the message Ready indexer On appears on the display. If not, follow steps below:



After this setting, the machine will sew with the indexer according to the parameters set in the program.

1.2. Be certain that the machine is threaded correctly according to the section C3 and insert the sewn work under the clamp feet. To place a buttonhole, use the adjustable front stop ❶ and side gages ❷.
Note: There are no side stoppers ❷ on machines with positioning laser lights (see 3-70).

1.3. When the foot pedal ❸ is pressed to the first position, the sewn work is clamped by the head clamp feet. (Releasing the foot treadle will raise the clamp feet).
Note: It is possible to set the control so that both the clamping and the sew start are simultaneous, consult the programming section for this information.



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D - MACHINE CONTROLS

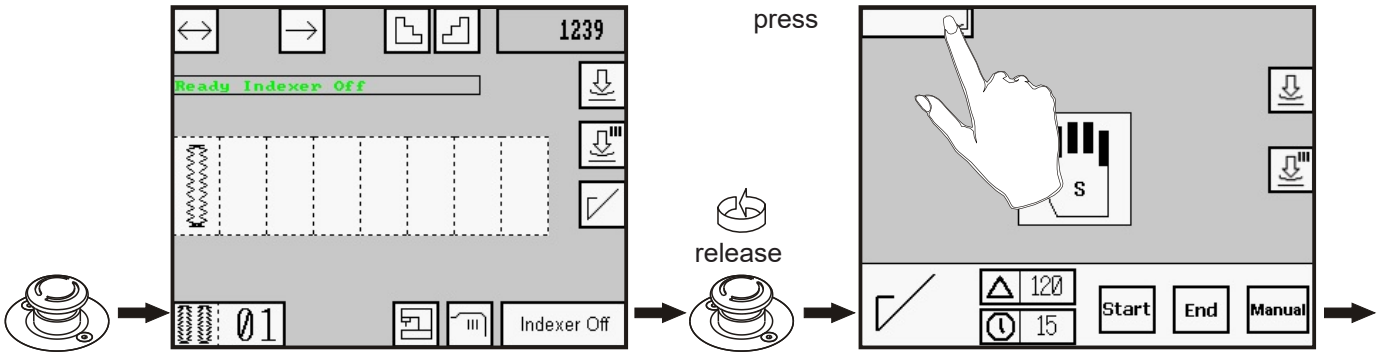
1.4. When the foot pedal is pressed to its second position, the sewing is started with or without indexer, it depends on set program - see 1a, b. When the buttonhole is sewn and the thread is trimmed, the machine goes to the home position and clamp feet raise.

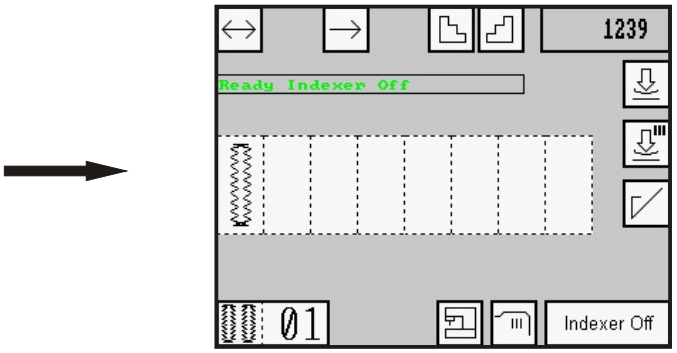
1.5. When the clamp feet are up, it is possible to move the sewn work for sewing the second buttonhole - but only for sewing without indexer.

The machine automatically sews the buttonholes according to the set program - *sewing with indexer*.

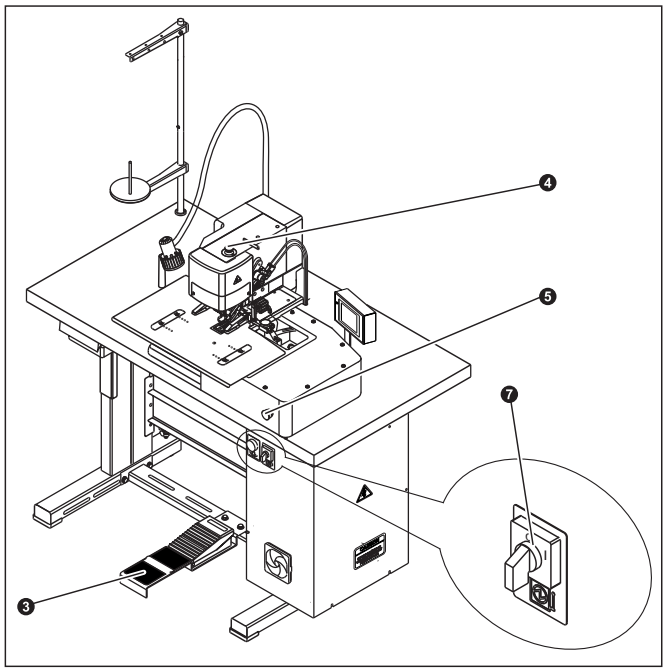
1.6. *a) sewing without indexer*

Machine can be stopped in any place of the cycle by pressing the Emergency Stop button ❹.





and pressing the foot pedal, the machine finishes the buttonhole.



D - MACHINE CONTROLS

b) sewing with indexer

If it is necessary to interrupt the cycle during the sewing with indexer (example: needle breakage, thread breakage):

b1) press the Cycle Interruption button ❺  on the indexer. The machine stops in the home position after buttonhole is finished.

b2) Indexer clamp feet stay down. By the  and  buttons you can shift indexer clamp feet to the desired position and finish sewing by pressing the foot pedal ❸ with simultaneous holding the button ❺.

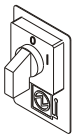
b3) If you need to take out the fabric, you can do it by pressing the foot pedal ❸ to the first position and rejecting then. You can hold the fabric by pressing the foot pedal ❸ again and next sequence is the same as in point b2.

- if it is necessary to interrupt the cycle because of the operator safety:

b4) press Emergency Stop Button ❹  .

b5) the machine stops immediately, the indexer clamp feet raise up and move to the home position - see b2.

b6) release the button  , press  button and sew one dummy buttonhole, to bring the needle bar to the home position.

1.7. When the work is done, switch the machine off by the main switch ❼  by turning center clockwise to the 0 position, then stop the air supply by closing valve which is behind the regulator.

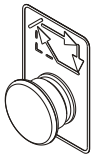
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D - MACHINE CONTROLS

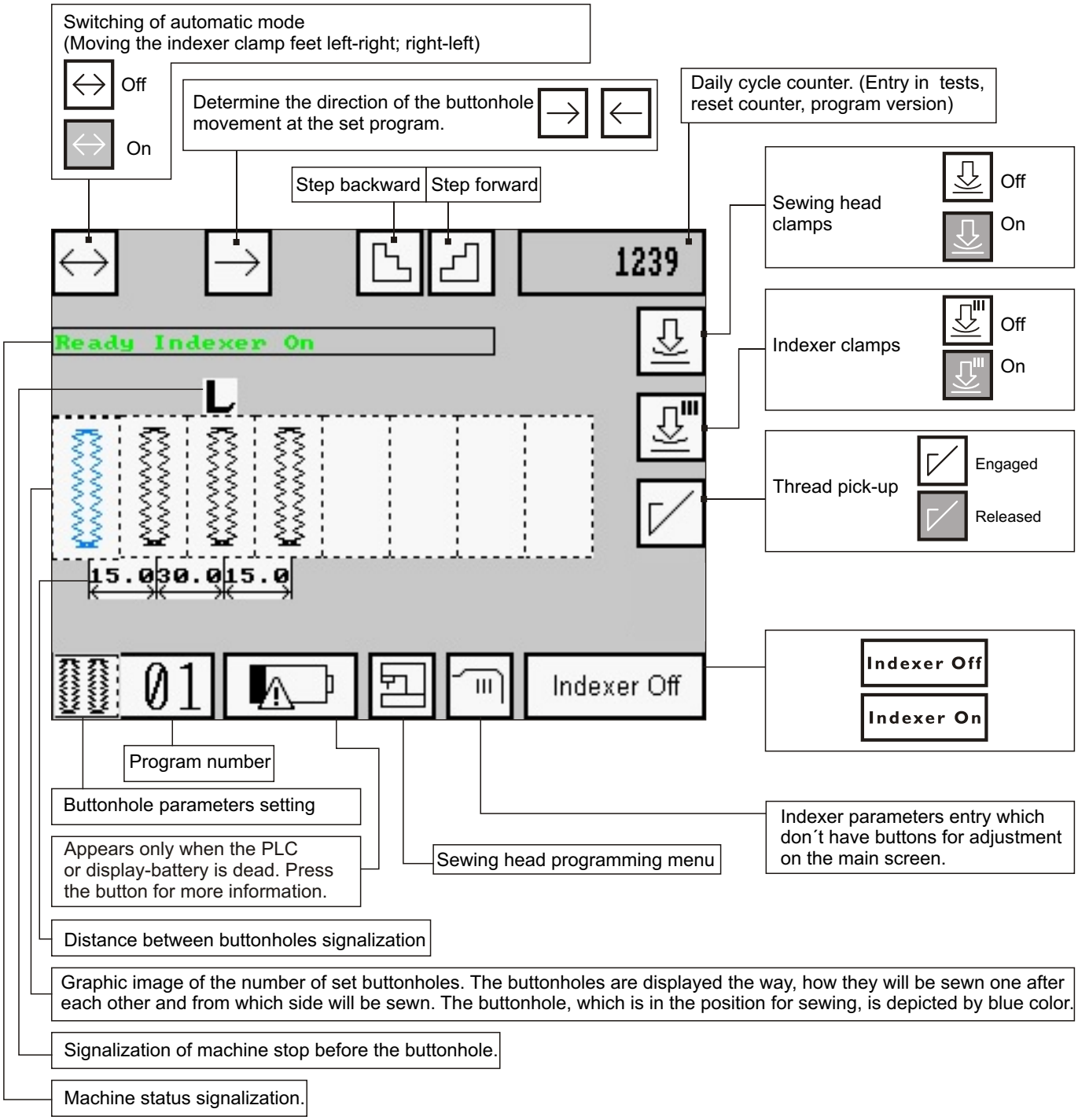
2. OPERATOR CONTROL PANEL PUSH BUTTONS AND SWITCHES



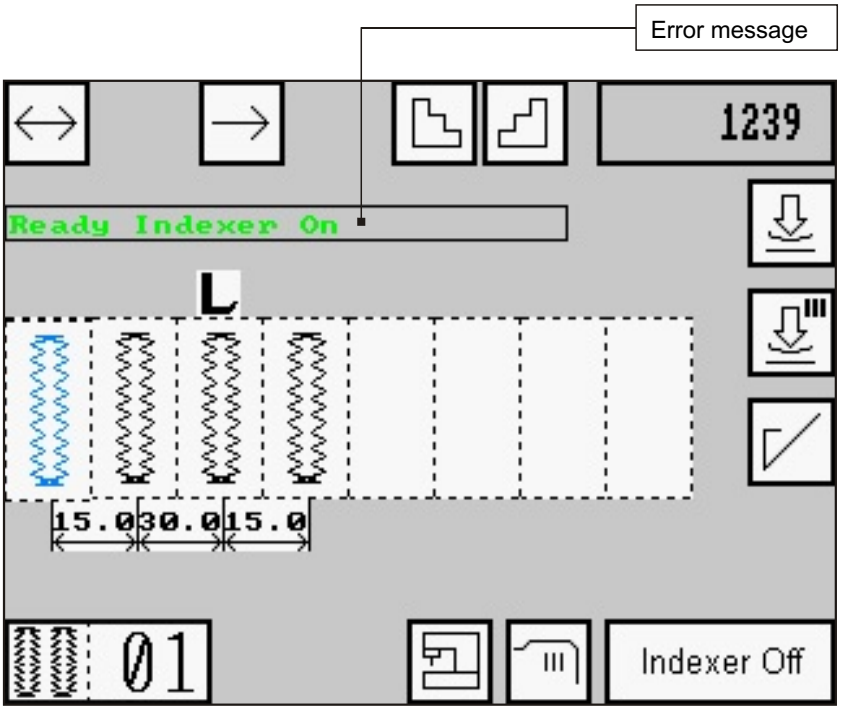
Emergency Stop Button



Indexer cycle Interrupt Button



D - MACHINE CONTROLS



Ready indexer On

Ready indexer Off

Emergency stop

Wait please

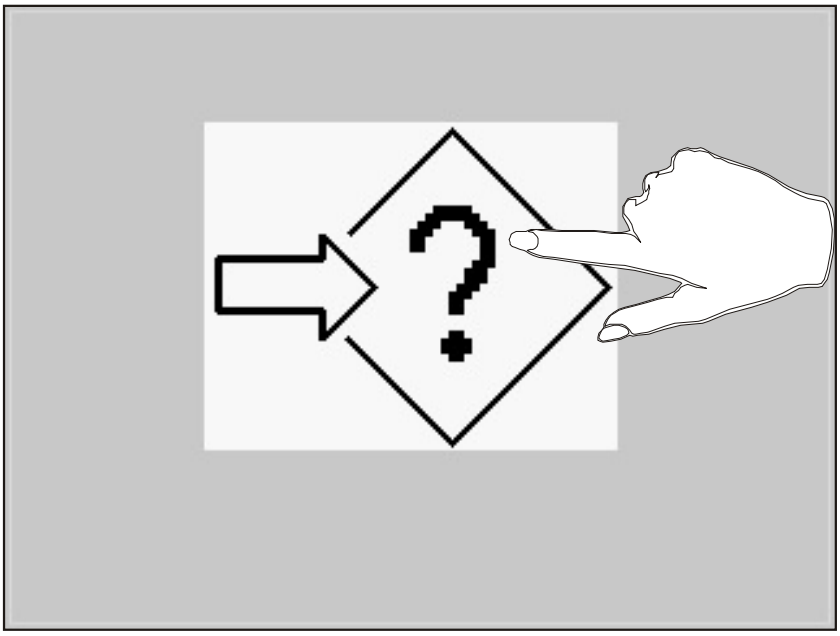
Busy

Motor not ready

Low air pressure

Home position time out

Error setting



It will be displayed if the value of the parameter is adjusted out of range.

Press the display any where, you will return to the main screen.

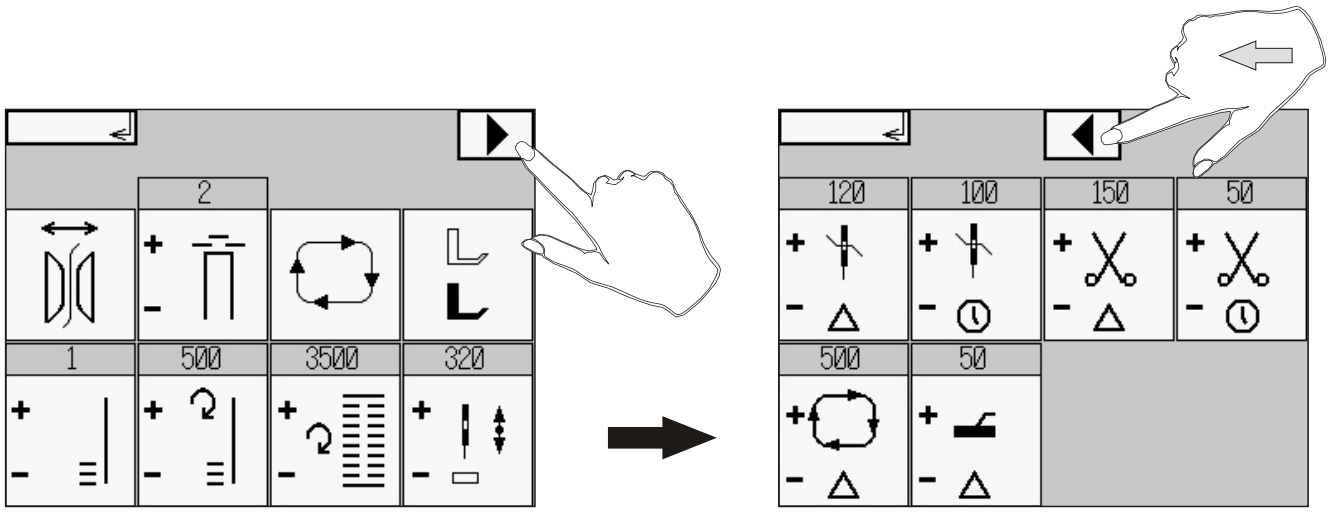
Press button ↵ you will get to the main screen.

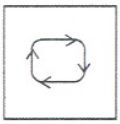
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D - MACHINE CONTROLS

3. THE SEWING HEAD PROGRAMMING MENU

Enter the sewing head program menu by pressing button  .





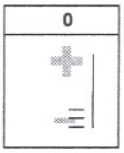
Setting the machine cycling. (On/Off).
If the button lights, function is active.



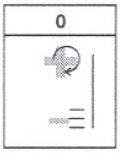
Setting the foot pedal position. (Possible setting 1step/2steps).
Adjustment for position 1 means, that the machine closes clamps and starts sewing in one moment.



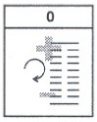
Adjustment for position 2 means, that the machine closes clamps on 1 position and on position 2 starts sewing cycle.



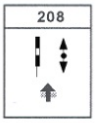
Selecting the number of stitches in slow start.
(Range 0 - 3 rpm)



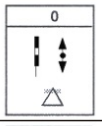
Setting the slow start speed at the sewing cycle.
(Range 500 - 1000 rpm)



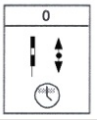
Maximal speed.
(Range 1000 - 3840 ppm)



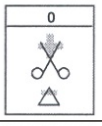
Correction of the needle bar upper position. (Range 0 - 600 imp)



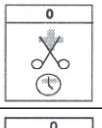
Draw-off delay.
(Range 60 - 150 ms)



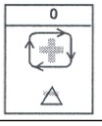
Timming of the knife/draw-off activation.
(Range 30 - 200 ms)



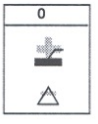
Setting the trim delay.
(Range 0 - 200 ms)



Setting the trim timing activation.
(Range 30 - 60 ms)



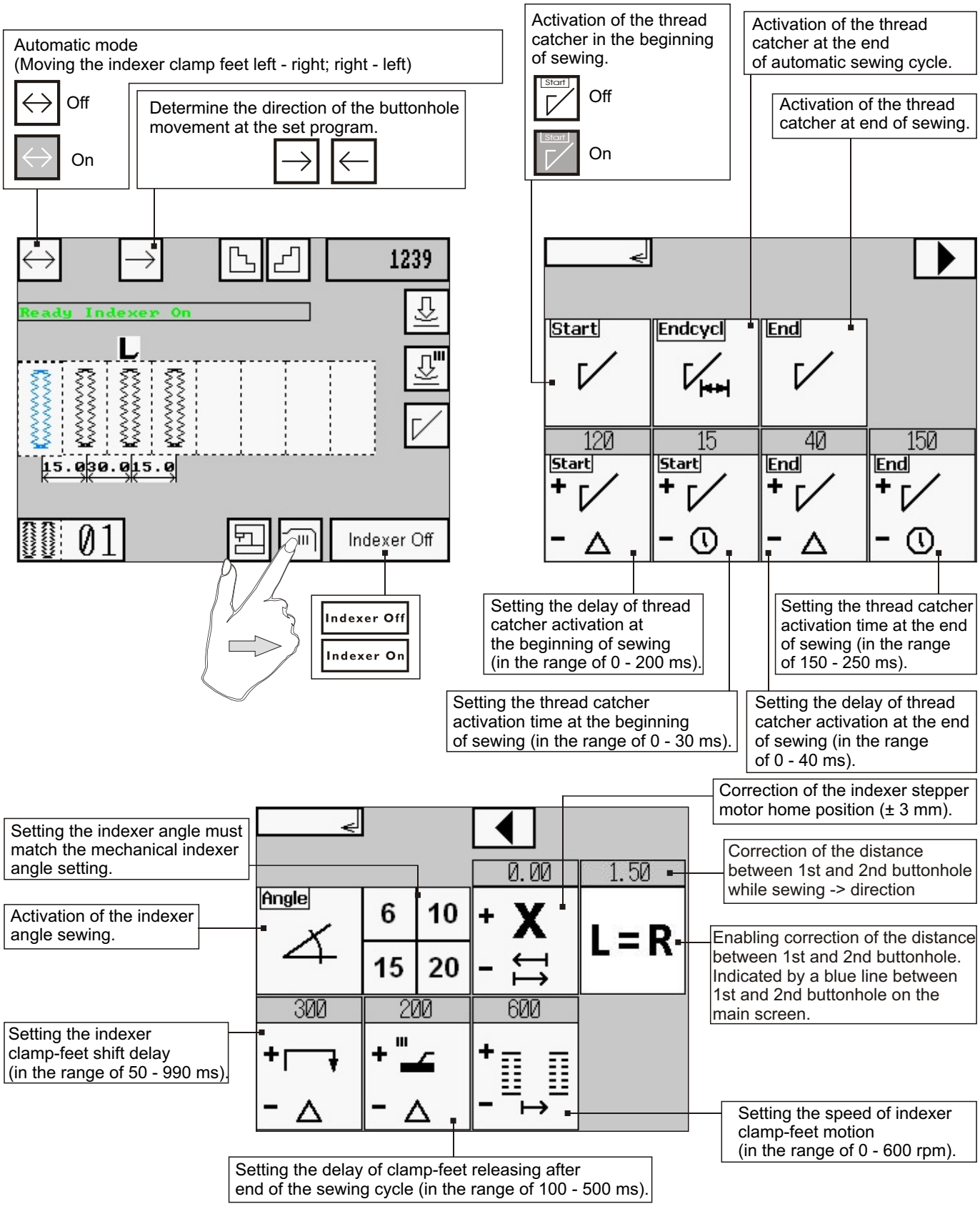
Setting the delay between the sewing cycles. (Range 500 - 2500 ms)



Clamp feets opening delay adjustment, in the end of cycle. (Range 0 - 100 ms)

To return to the main screen, press ↵ key.

4. THE INDEXER PROGRAMMING MENU



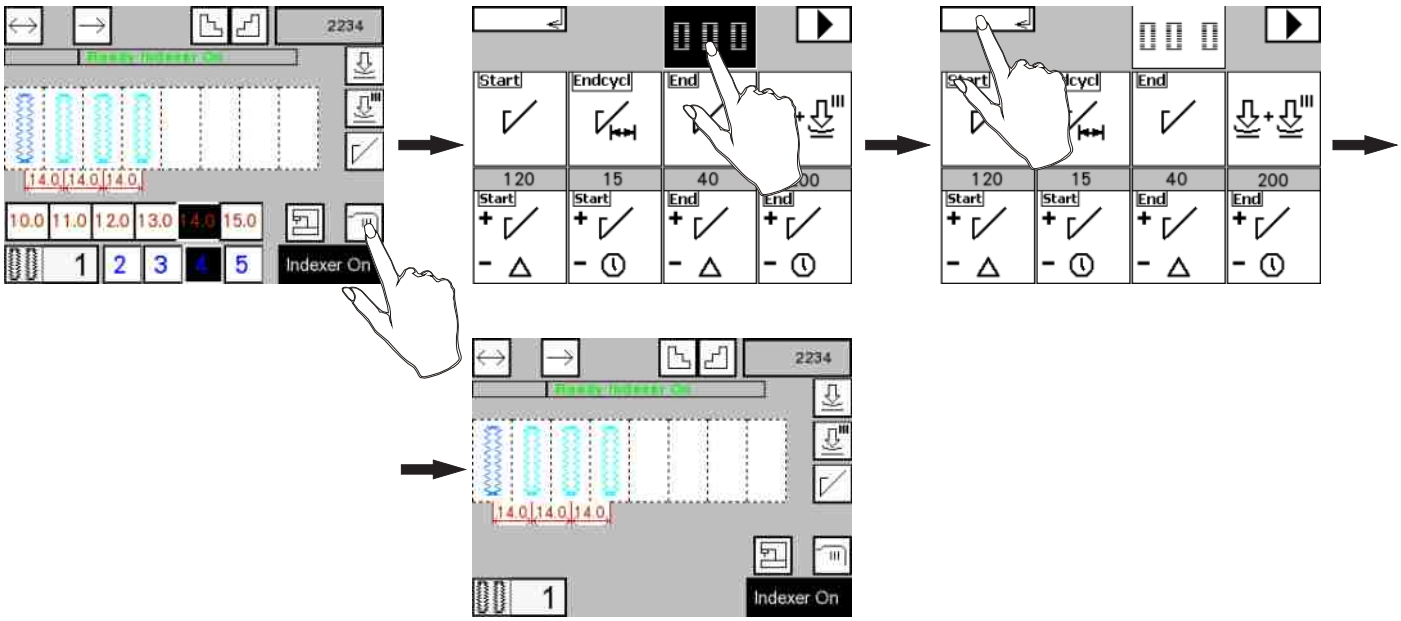
D - MACHINE CONTROLS

5. THE INDEXER PROGRAMMING

– entering space and button holes

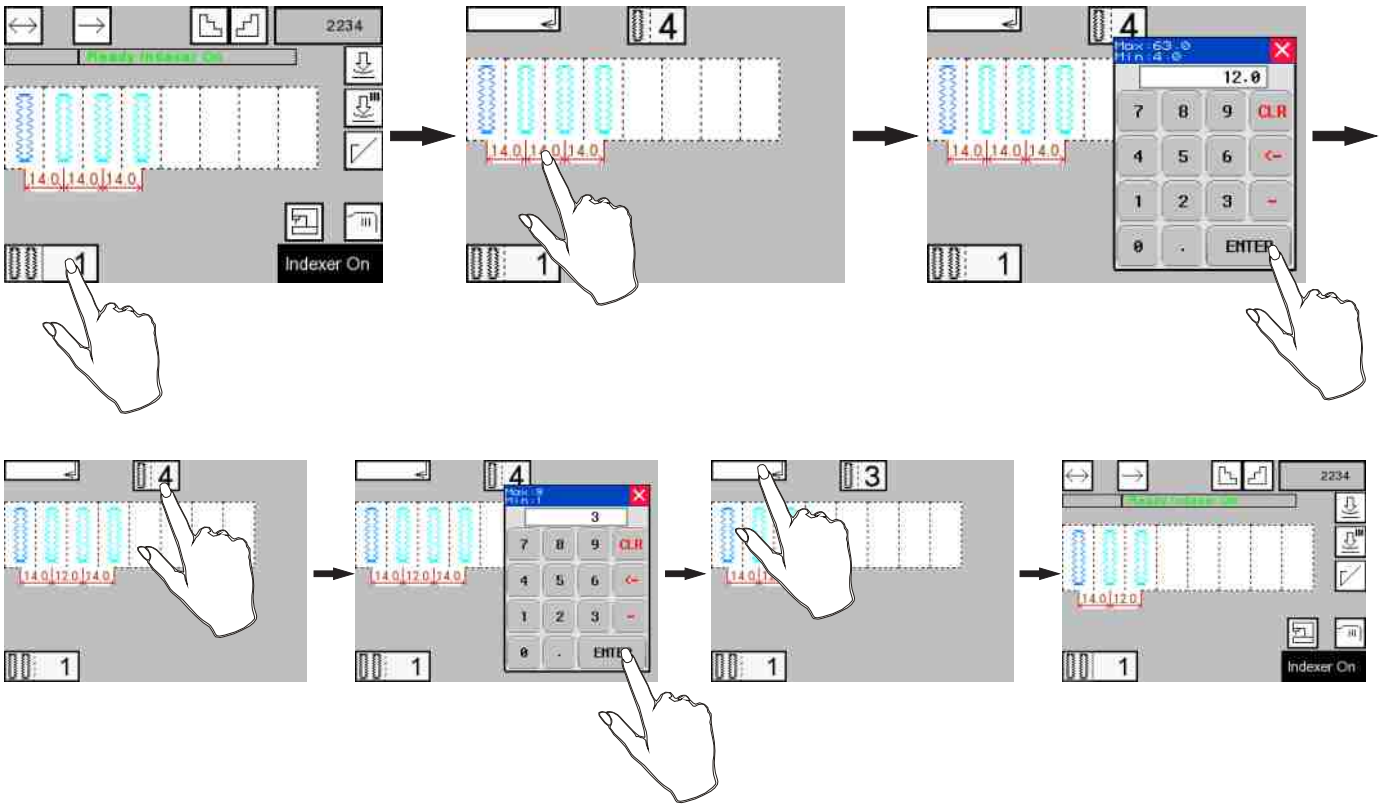
5.1. Standard mode

This mode is activated by this icon  at indexer programming menu.



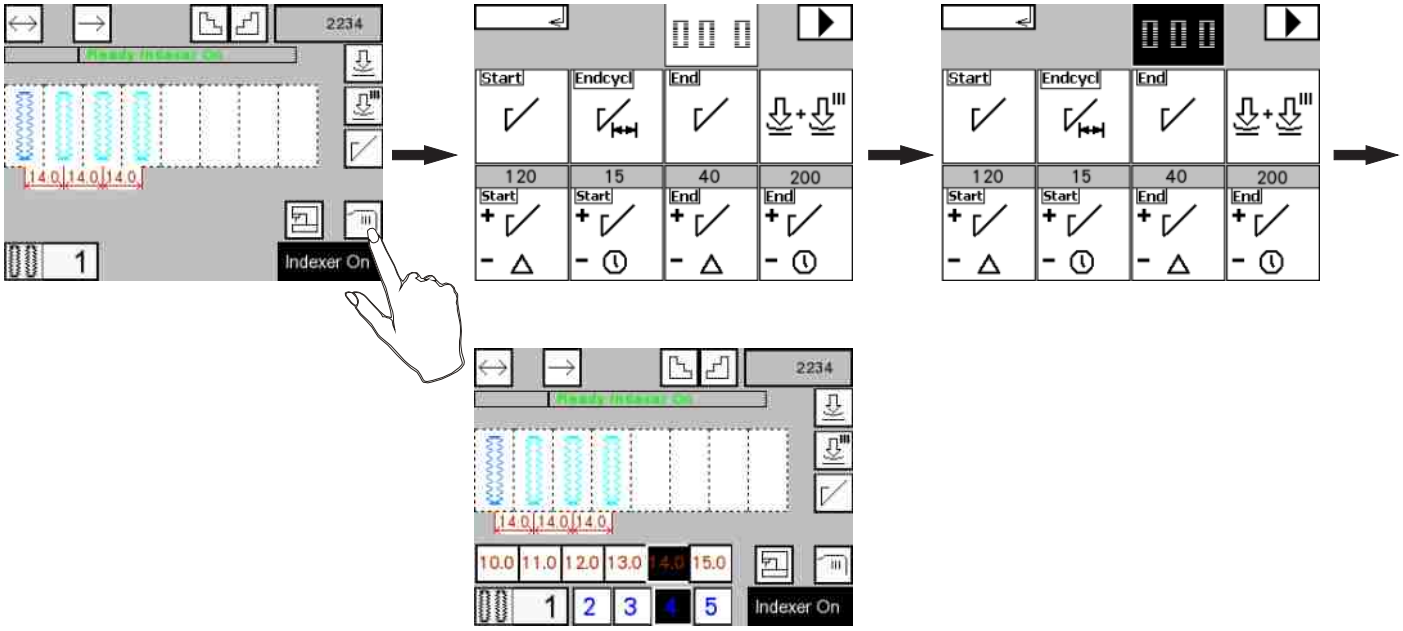
Count of button hole and distance between button holes setting.

Note: It is possible to have different distance between each button hole.

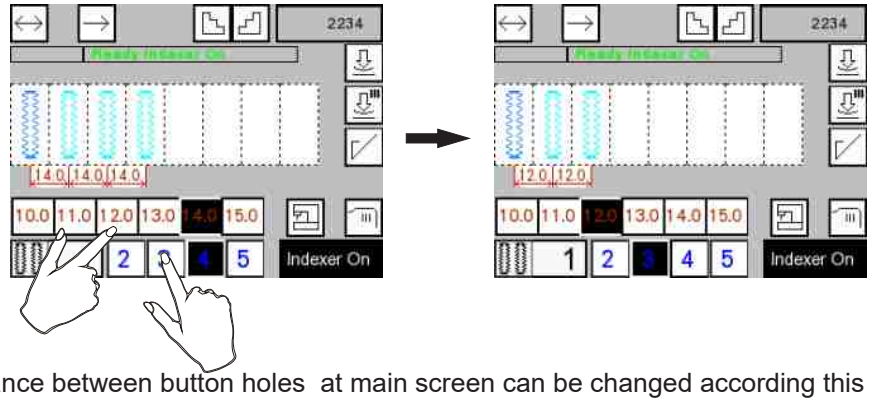


5.2. Special mode

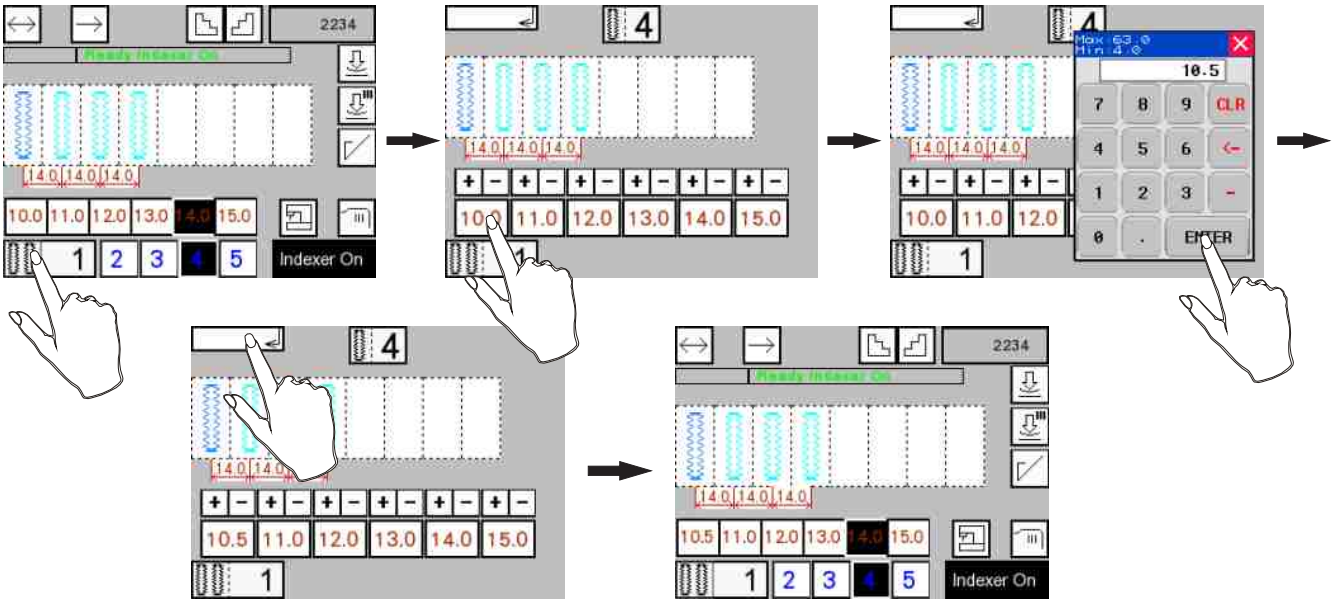
This mode is activated by this icon  at indexer programming menu.



Count of button hole and distance between button holes setting.
Note1:Distance between button hole are equal.
Note2:Count of button hole and distance between button holes are possible to change directly from main screen.



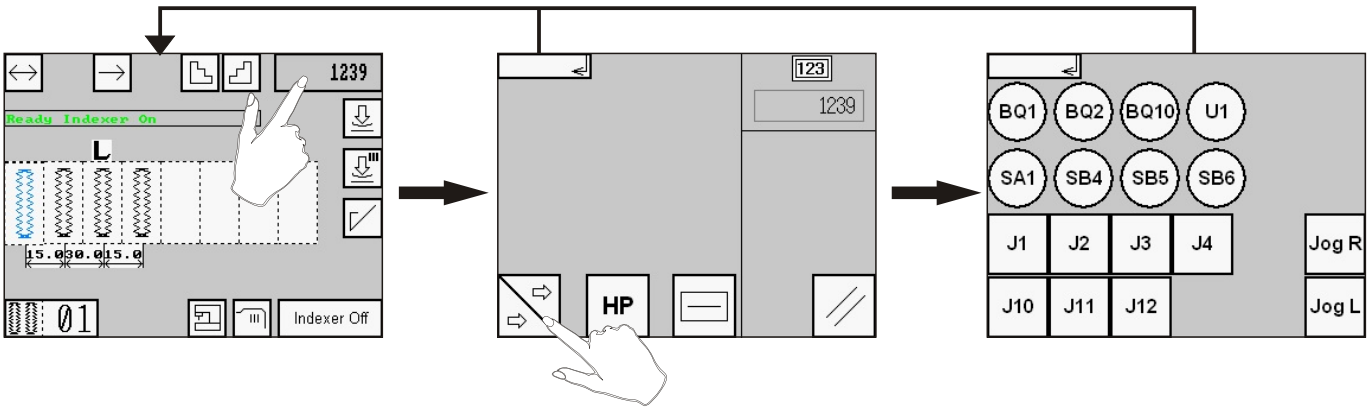
Value of distance between button holes at main screen can be changed according this steps.



D - MACHINE CONTROLS

6. TESTS

Warning! Tests can be performed only by skilled service technicians.



BQ1 The end position sensor BQ1. Activate the sensor using a metal tool - icon starts lighting. BQ1

BQ2 If the air pressure is less than 0,5 MPa the button is underlighted. BQ2

BQ10 Stepper motor home position sensor BQ10. Activate the sensor using a metal tool - icon starts lighting. BQ10

SA1 After pressing button key EMERGENCY STOP  the icon lights. SA1

U1 If the servodriver is in operation the icon lights. U1

SB6 Cycle interruption button SB6. While pressing the button icon lights. SB6

J1 Press button key to activate the draw-off. The valve J1 is tested by this parameter. J1

J2 When the button key is pressed, the clamp feet are closed.The valve J2 is tested by this parameter. J2

J3 Press button key to activate the thread trimming. The valve J3 is tested by this parameter. J3

J4 Press button key to activate the second thread tension. The valve J4 is tested by this parameter. J4

J10 Press button key to close the indexer clamp feet. The valve J10 is tested by this parameter. J10

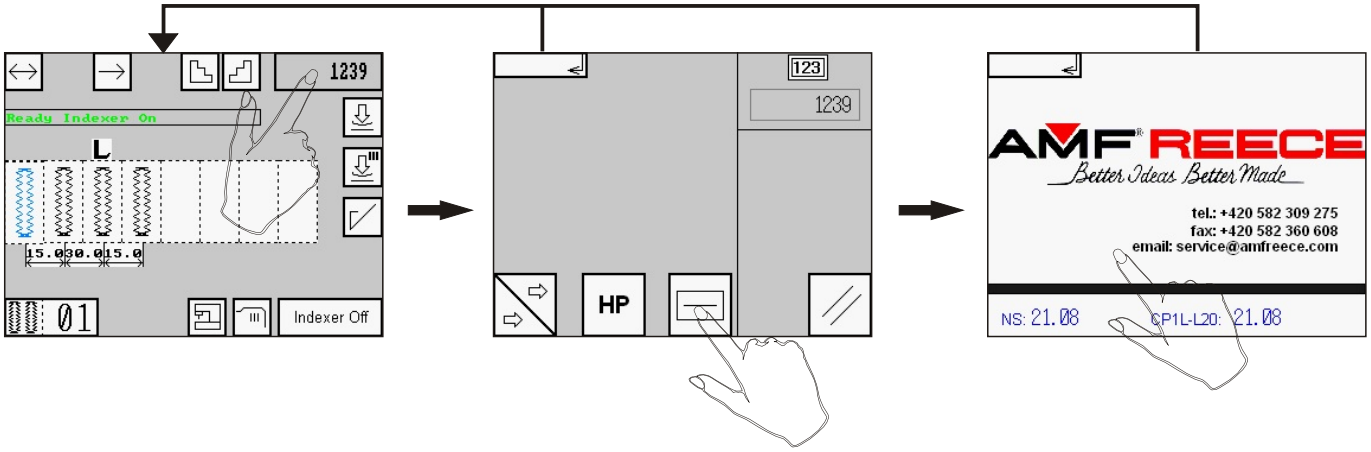
J11 Press button key to activate the thread pick. The valve J11 is tested by this parameter. J11

J12 Press button key to activate the indexer feet. The valve J12 is tested by this parameter. J12

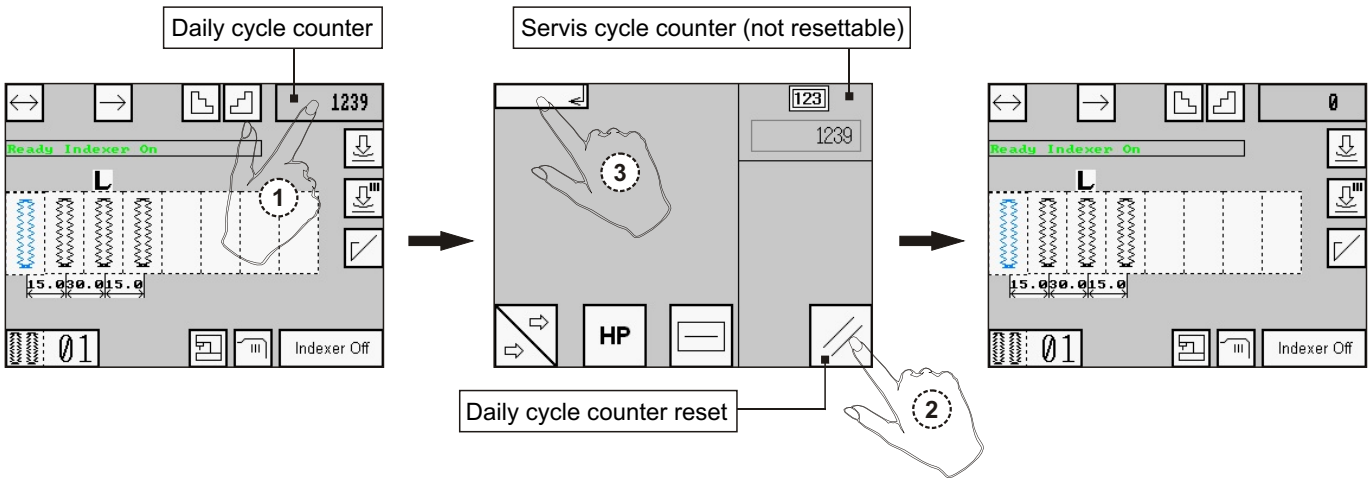
JogR Press this button to shift indexer by 10 mm right.

JogL Press this button to shift indexer by 10 mm left.

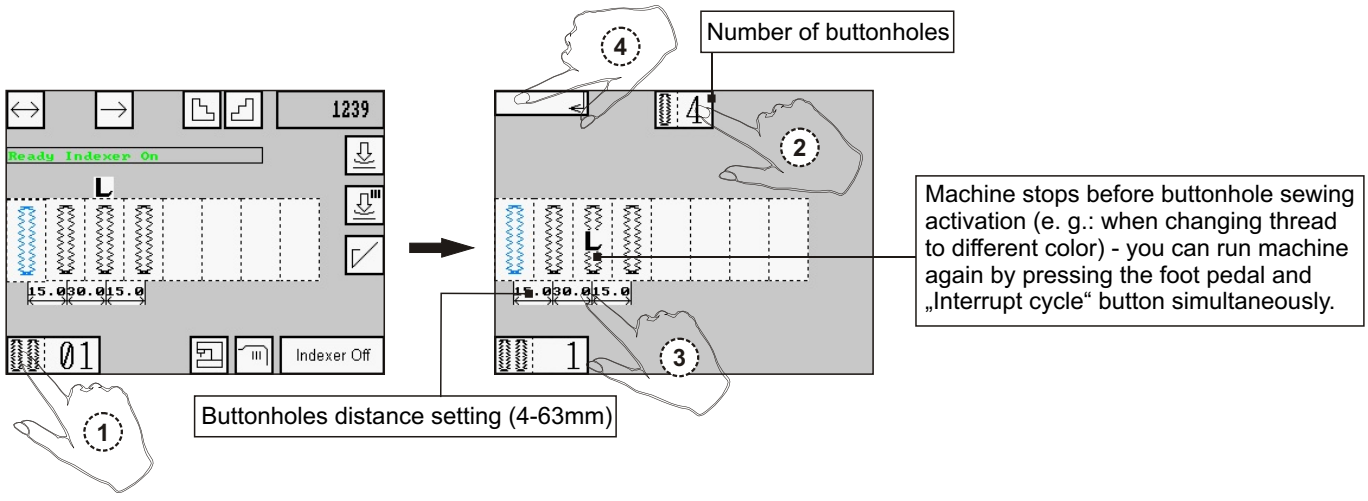
7. PROGRAM VERSION



8. COUNTER RESET



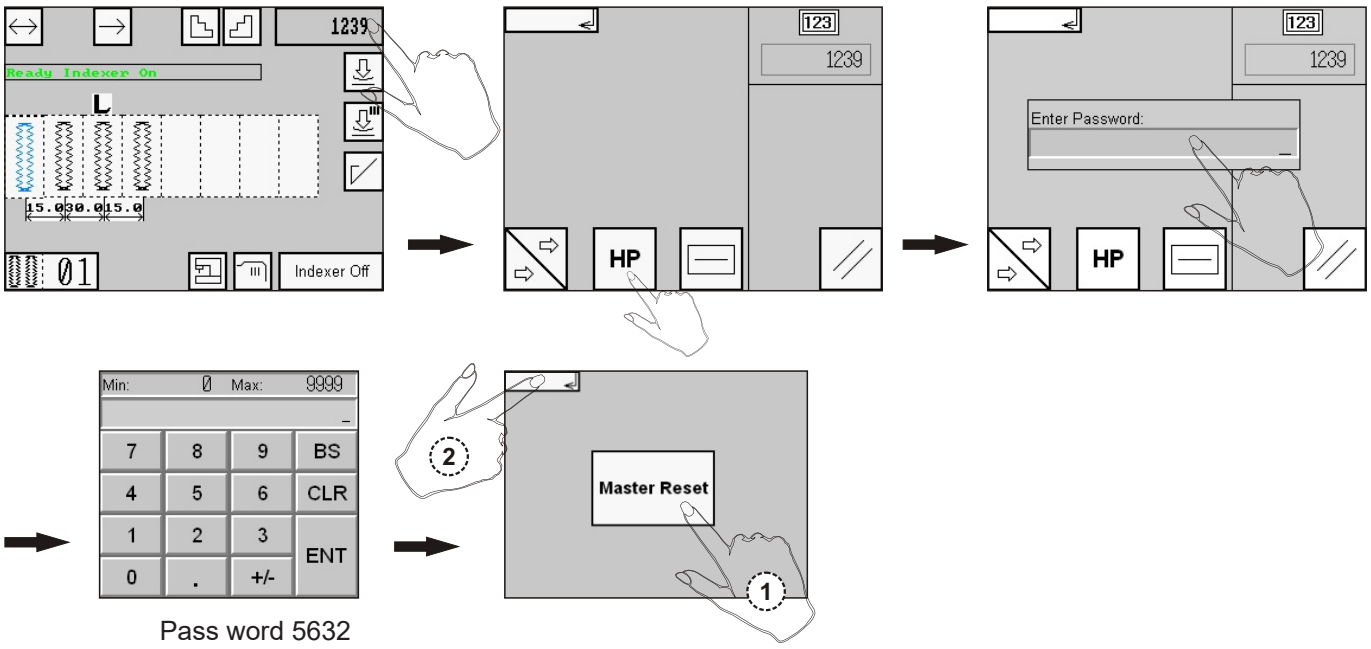
9. BUTTONHOLES PARAMETERS SETTING



D - MACHINE CONTROLS

10. FACTORY SETTING

- all the parameters are set according to table 1.



Pass word 5632

Table 1

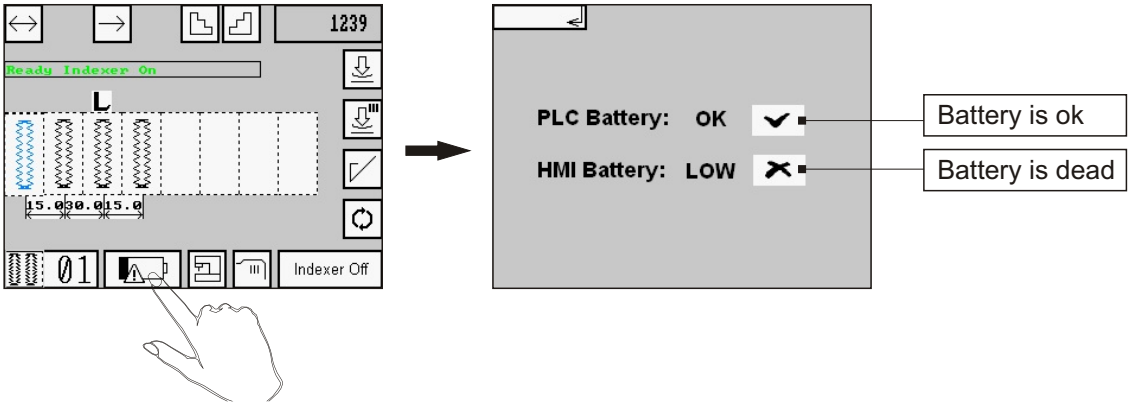
	PARAMETER	RANGE	SETTING
1.		Off / On	Off
		1 step / 2 steps	2 poloha
		0 - 3	0
		500 - 1000 rpm	1000
		1000 - 3840 rpm	3500
		0 - 600 ipm	320
2.		60 - 150 ms	120
		30 - 200 ms	100
		0 - 200 ms	150
		30 - 60 ms	50
		500 - 2500 ms	500
		0 - 100 ms	50

	PARAMETER	RANGE	SETTING
1.	Indexer	Indexer Off / Indexer On	Indexer On
		Off / On	Off
	4	1 - 8	4
	15mm	4 - 63 mm	16
		Off / On	Off
	Start	Off / On	Off
	End	Off / On	On
	Endcycl	Off / On	On
	Start	0 - 200 ms	120
	Start	0 - 40 ms	15
	End	0 - 100 ms	40
	End	50 - 300 ms	200
2.	Angle	Off / On	Off
	6 10 15 20	6°, 10°, 15°, 20°	
	X	± 3 mm	0
	L=R	L=R Off / L≠R On / 0 - 2 mm	1
		200 - 990 ms	300
		100 - 500 ms	200
		0 - 600 rpm	600

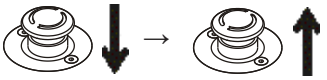
11. DEAD BATTERY

If the PLC or display battery is dead, a flashing icon  appears on the main screen. By pressing the icon, one can find out which battery needs to be replaced.

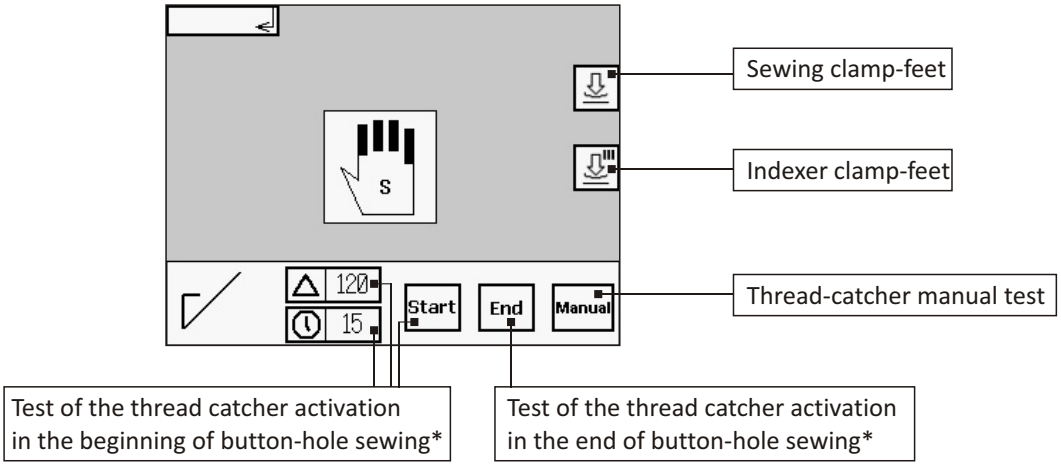
Warning! The battery shall be replaced in 4 days, all the data are lost afterwards!



12. SERVICE MODE

After pressing and releasing the emergency stop button  the Service Screen appears.

The clamp feet and thread catcher can be tested with deactivated servomotor from this screen.



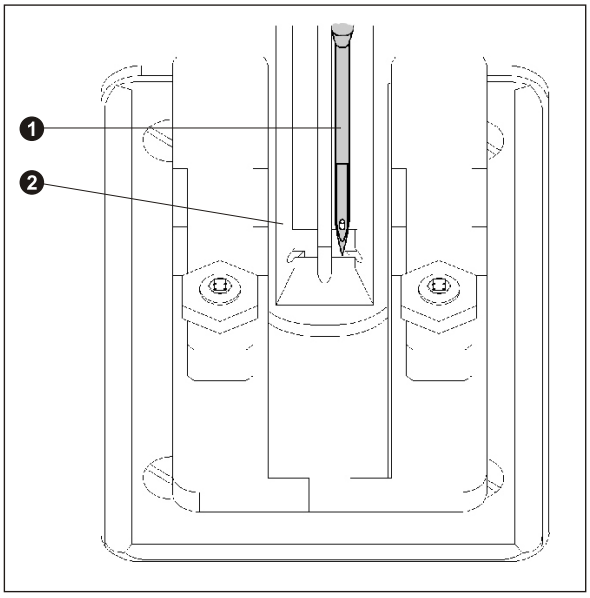
* The icons will not appear if this function is not activated in the indexer settings.

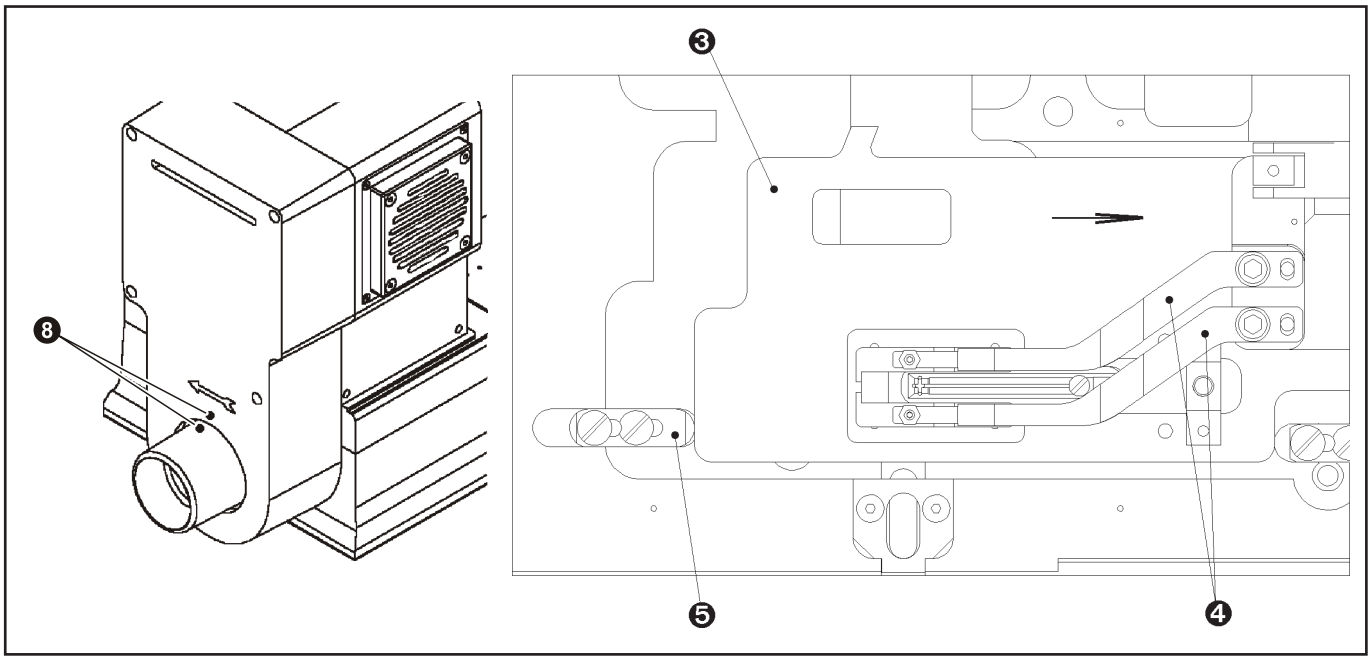
E - MACHINE ADJUSTMENTS

1. MACHINE HOME POSITION

1. The needle bar is in the upper position. The needle ❶ descends to the right side of the throat plate slot ❷ during the first stitch. The marks ❽ on the handwheel and cover casting are aligned.

2. The clamp plate ❸ with clamp feet ❹ is in the full forward position against the adjustable stop ❺. The clamp plate moves to the rear during the first row of stitching.



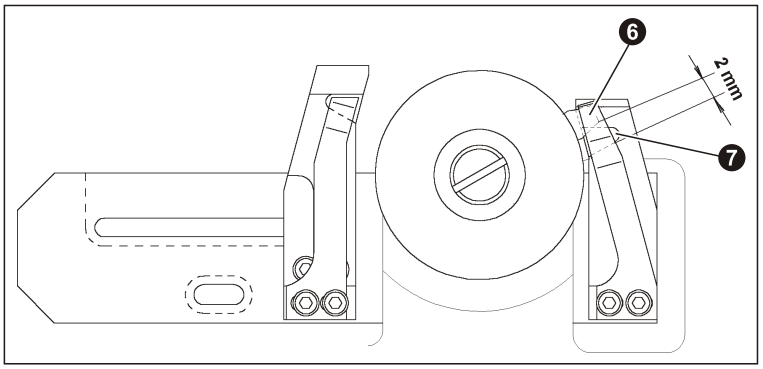


2. MAIN CAM ADJUSTMENT

1. Bring the machine to the home position.

2. Tilt the machine on the rest pin and view the main cam assembly. The distance between the control spring ❻ and the right shifter block ❼ is 2 mm.

3. If incorrect - see section E9, point 1.



E - MACHINE ADJUSTMENTS

3. THE PRINCIPLES FOR THE MACHINE ADJUSTMENT

1. Before making mechanical adjustment turn the machine to the *service mode* by pressing

the button ❼ Emergency Stop  ➡ Emergency stop ➡ release  ➡ Ready - F1
Service - F6

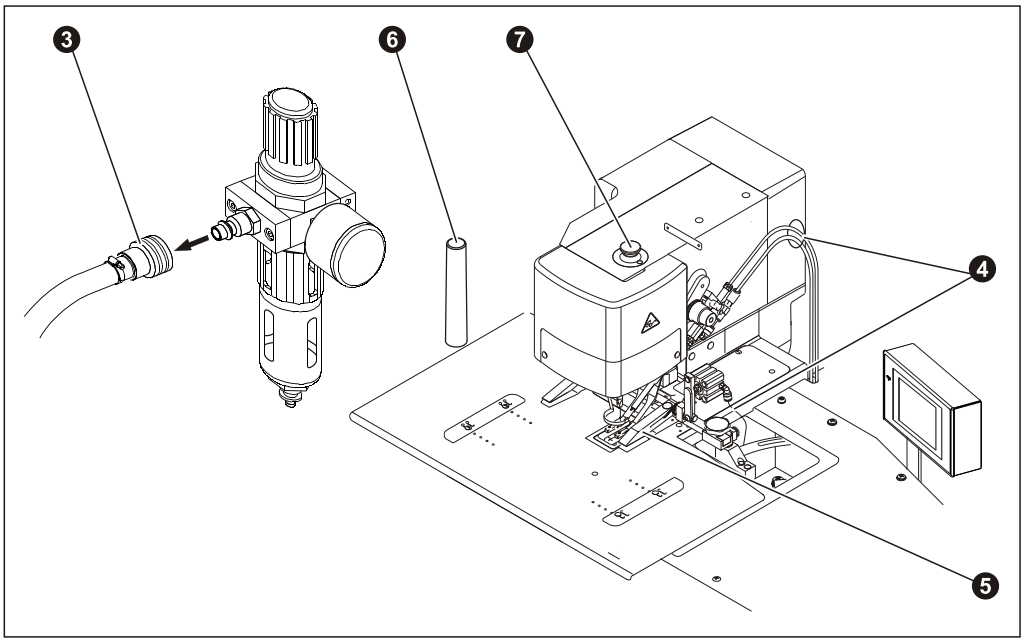


➡ Service mode
Ready-F1

CAUTION: It is not possible to start sewing by pressing the foot pedal when working in Service Mode.

2. If it is necessary to tilt the machine on the rest pin ❻ during the machine adjustment, follow the below mentioned steps:

a) disconnect the air tubes ❸ from regulator
b)disconnect the air tubes ❹ from the cylinders of the indexer clamp feet and from the thread puller
c) remove the indexer clamp feet ❺.



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E - MACHINE ADJUSTMENTS

4. NEEDLE BAR

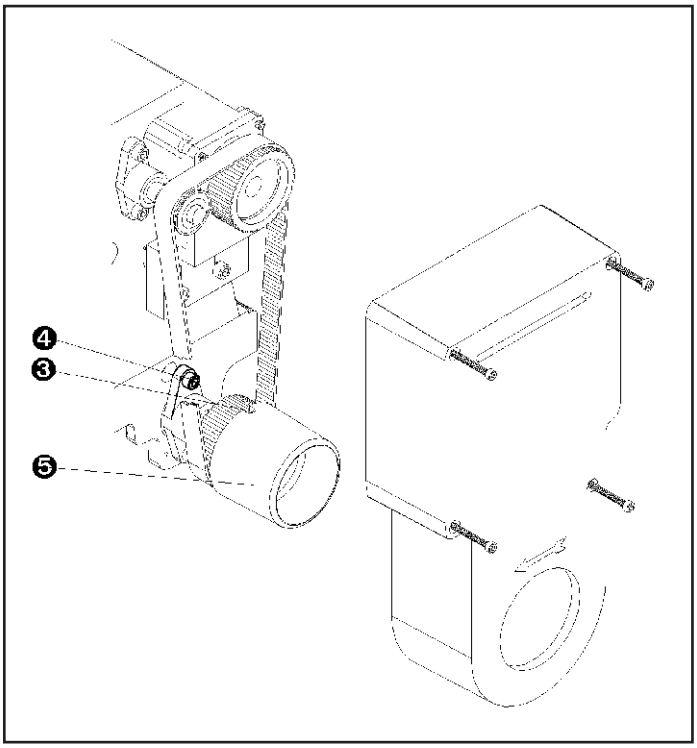
1. Needle bar crank position

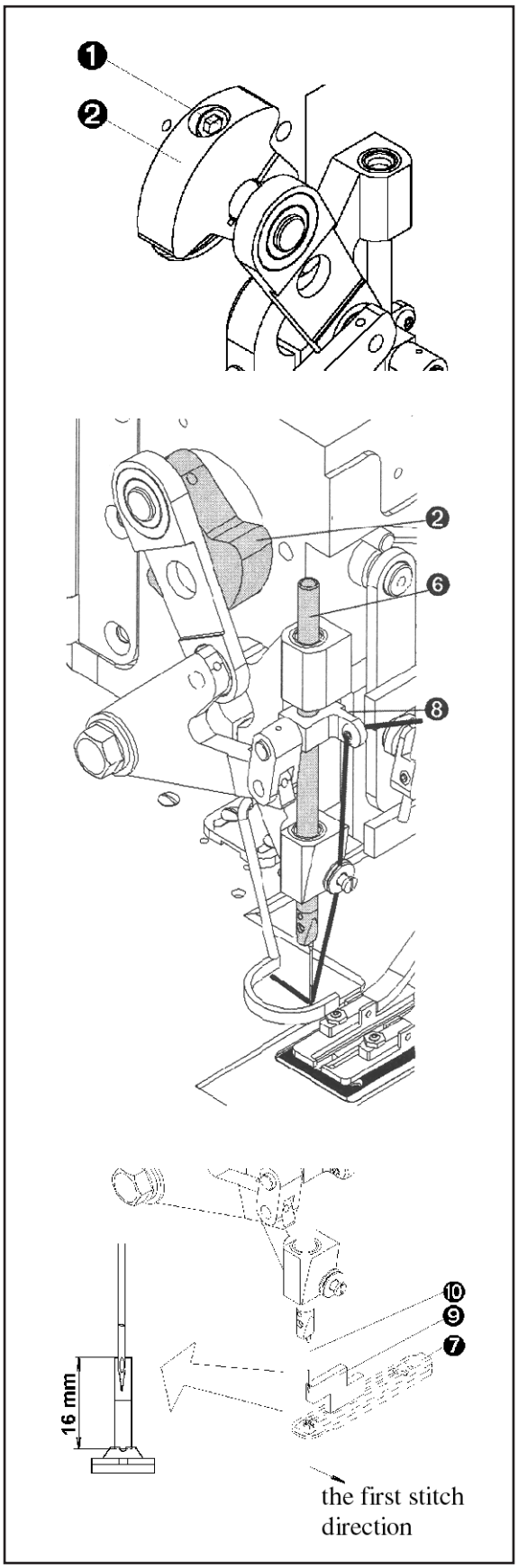
Turn the handwheel ❺ and loosen the screw ❶ in the needle bar crank ❷. Turn the handwheel until the needle bar reaches the upper position. Pulley screw ❸ on the main shaft should be in the same line with screw ❹. Tighten the screw ❶.

NOTE: The needle bar should be in the top dead center position when the screw ❸ is at 12 o'clock. To check, turn the handwheel clockwise and counter clockwise. The needle bar must move downward in either direction. The needle ❿ makes its first stroke into the right side of the throat plate.

2. The needle bar height adjustment

Adjust the needle bar ❻ height to 16 mm (5/8") from the surface of the throat plate ❼ to the upper edge of the needle eye. Use height gauge ❾.
Loosen the set screw ❽ and move the needle bar up or down as necessary.

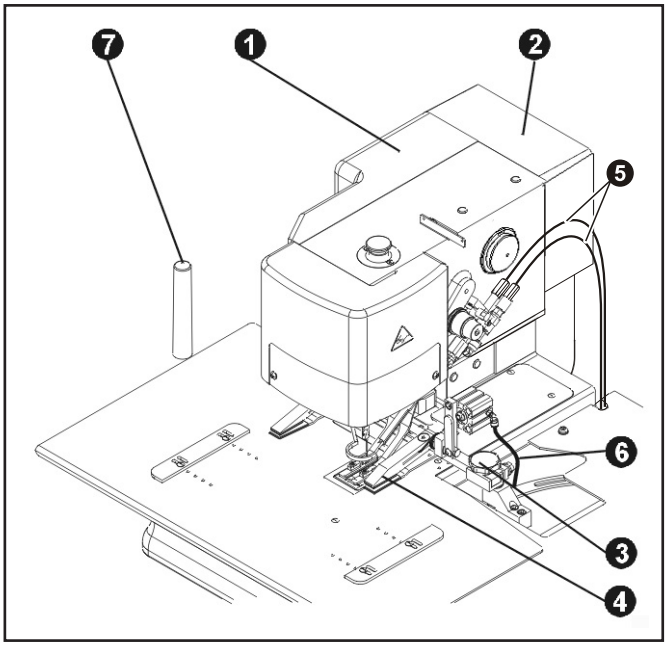




E - MACHINE ADJUSTMENTS

5. BITE

Before the bite adjustment, remove the pulley cover ❷ and the head cover ❶. Loosen the indexer clamp feet screw ❸ and remove the indexer clamp feet Í from the machine. Disconnect the air tubes ❺ from the thread puller cylinder and tubes ❻ from the clamp feet cylinder.



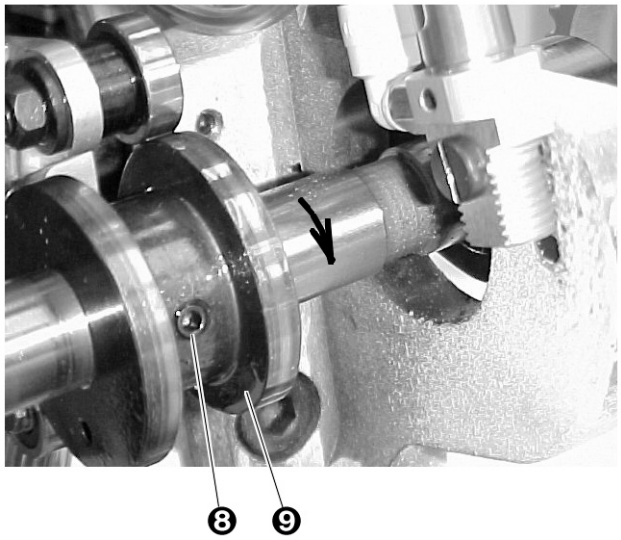
1. Bite cam

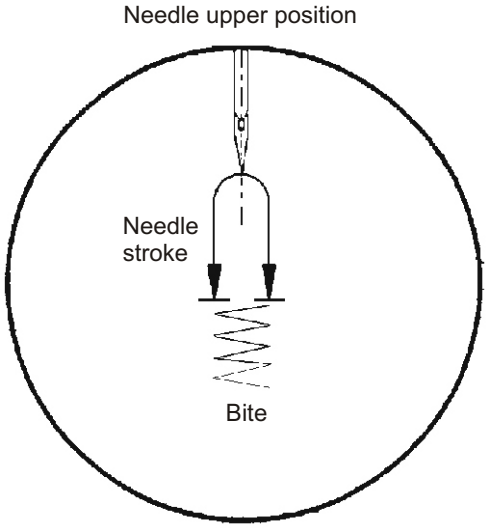
a) Check if the machine is in the home position.

b) Tilt the machine on the rest pin ❼. If the adjustment is correct, the second cam locking screw ❽ (counter clockwise of the bite cam ❾) must be roughly perpendicular to the bedplate casting.

c) Adjust the position of the bite cam so that all of the needle bite motion occurs equally with the needle out of the work piece on the up and down stroke.

Note: There must be no bite movement before the needle ❿ comes out of the work nor after it has descended into the work - see illustration. Tighten both locking screws ❽ securely.





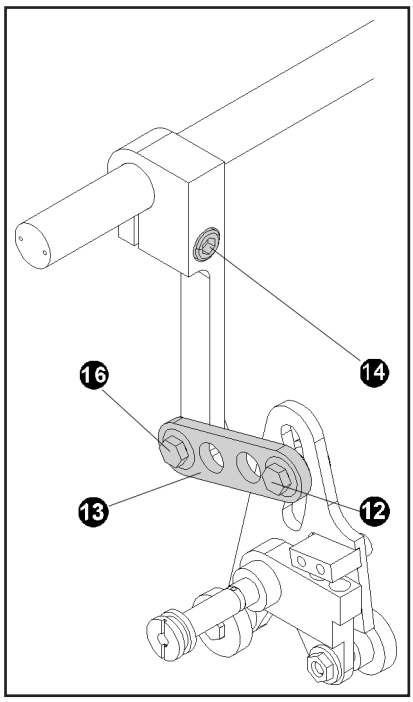
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E - MACHINE ADJUSTMENTS

2. Bite width adjustment

To adjust the bite width, first remove the head cover for access to adjustments. The S-4000 ISBH is fitted with a regular bite throat plate ⓫, that allows a bite range of 1.5 mm (1/16“) to 2.3 mm (3-32“).

a) loosen the adjusting screw ⓬
b) to increase the bite width, raise the bite lever ⓭
c) to decrease the bite width, lower the bite lever ⓭
d) tighten the adjusting screw ⓬

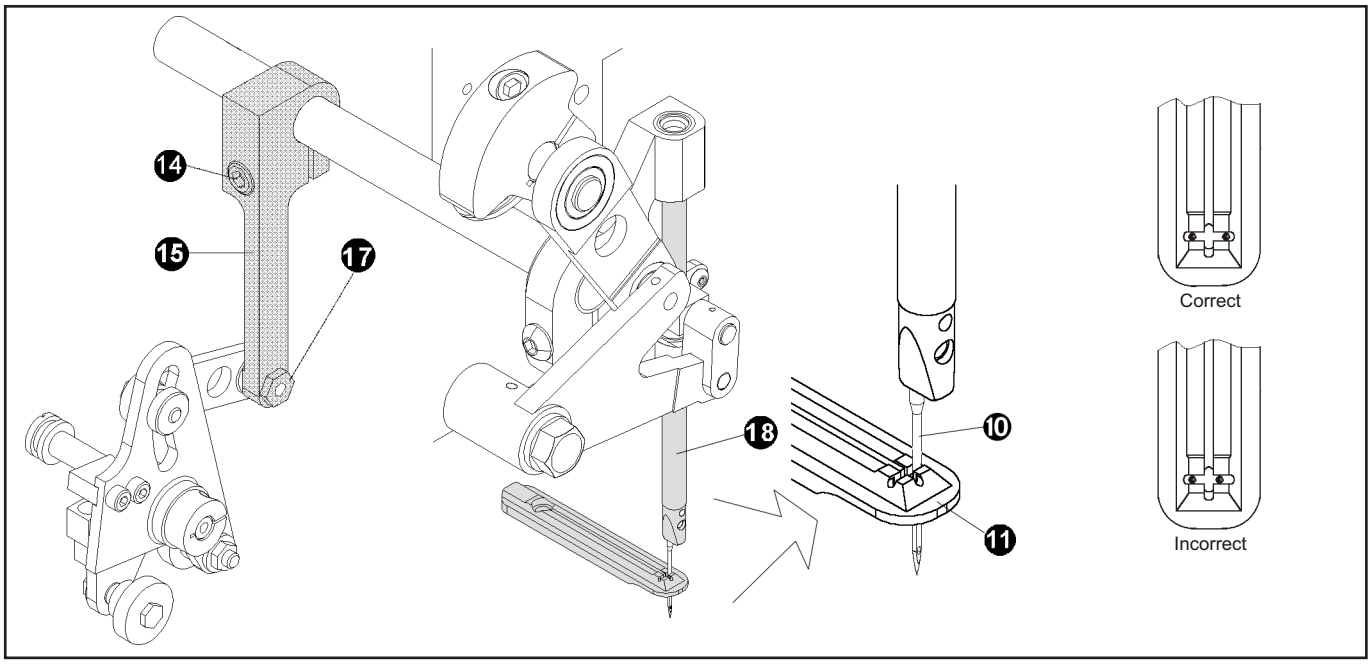


3. Centering the bite over the throat plate

a) with the machine in the home position - loosen the clamping screw ⓮ on the bite lever ⓯

b) for rough adjustment, using the handwheel, rotate the needle bar to its full down position and move the needle to the right side of the throat plate slot ⓫. Turn the hand wheel to the second needle ⓾ down stroke and compare the needle position in the left side of the throat plate. Continue adjusting until the needle is roughly of equal distance from the right and left sides.

c) tighten the clamping screw ⓮
d) For finite adjustment loosen the screw ⓰ and rotate the excentric nut ⓱. Tighten the locking screw ⓰.



6. FEEDING

1. Tilt the sewing head on the rest pin.

2. Bevel Gear Adjustment
Manually turn the hand wheel counter clockwise, until the drive spring in the main cam engages with a detent (first row of stitches). Remove the bevel gear cover and loosen the screws ❶, ❷ on the horizontal bevel gears and screw ❸ on the stop.

3. Loosen two adjusting screws ❹ in the right collar ❺. Adjust the dimension 11mm from the end of the feed shaft ❻ to the collar ❼ by pressing the feed shaft ❻ against the right collar❺. Tighten the adjusting screws ❹ in the right collar ❺. The tension of the left collar on the shaft is set.

4. Engage the left bevel gear ❽ with the vertical bevel gear ❾ and lock its position by set screws ❷. Move the stop against the gear and tighten set screw ❸.

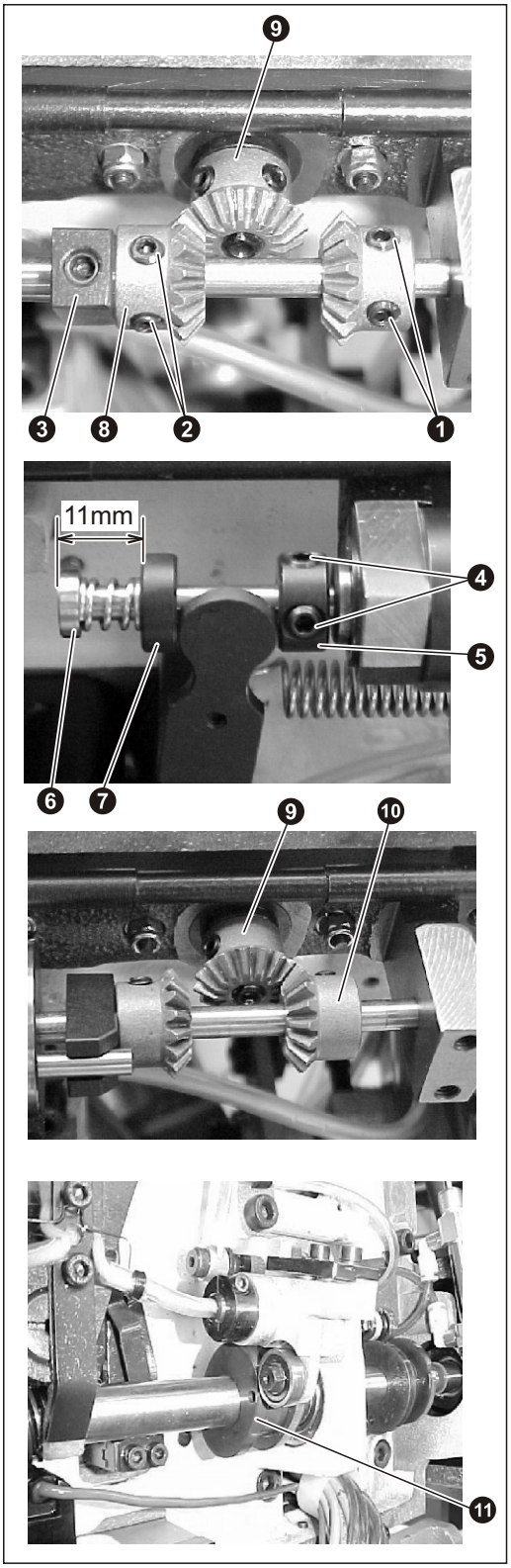
5. Manually turn the hand wheel counter clockwise until the feed shifter lever moves to its full left position then slide the right gear ❿ into engagement with the vertical gear ❾. Tighten set screws ❶ securely.

The bevel gear adjustment is done. By manually turning the handwheel finish the sewing cycle and bring the machine to the home position. Reinstall the bevel gear cover.
6. Clamp plate movement occurs only when the needlepoint has risen above the work piece and must be completed before the needle descends into the work.

7. For adjustment use a piece of paper to see the needle punctures.

If feeding occurs while the needle is in the work, engage the drive spring into a detent.

Loosen the screws on the feed cam and adjust its position as needed so that all feed motion occurs with the needle out of the work. Retighten the feed cam set screws.



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E - MACHINE ADJUSTMENTS

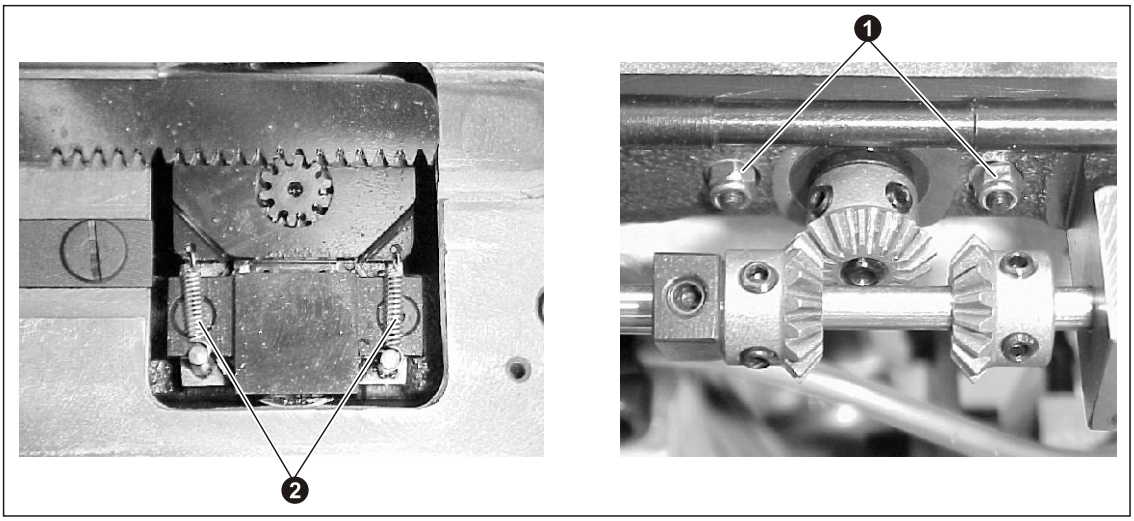
7. SLIP CLUTCH

The slip clutch pressure is factory set and under normal conditions will not need adjusting. The correct clutch torque setting is 0.43 Nm (60 to 65 inch ounces).

Hold the nut ❶ and tighten the adjusting screws ❷ with a torque screwdriver. Apply an equal amount of pressure to both sides of the clutch.

NOTE: If a torque screwdriver is not available, tighten the lock nuts so that the screws ❷ extend through the nuts ❶ 1.5 mm.

CAUTION: Too little torque will produce an improper material feed.
Too much torque may damage parts (bevel gears).

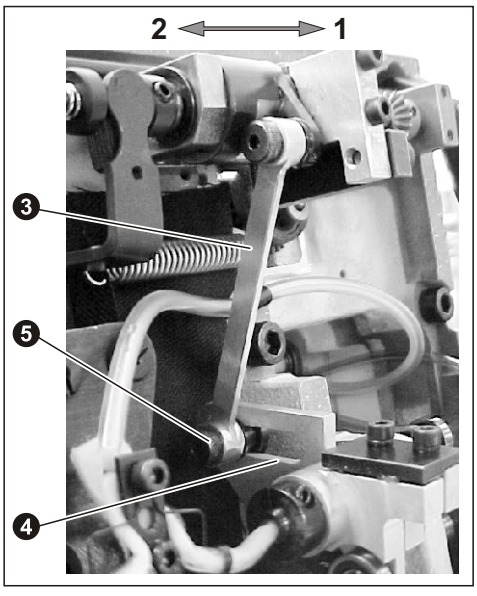


8. STITCH DENSITY

Adjust the feed connecting link position ❸ in the cam follower slot ❹ to obtain the correct stitch density.

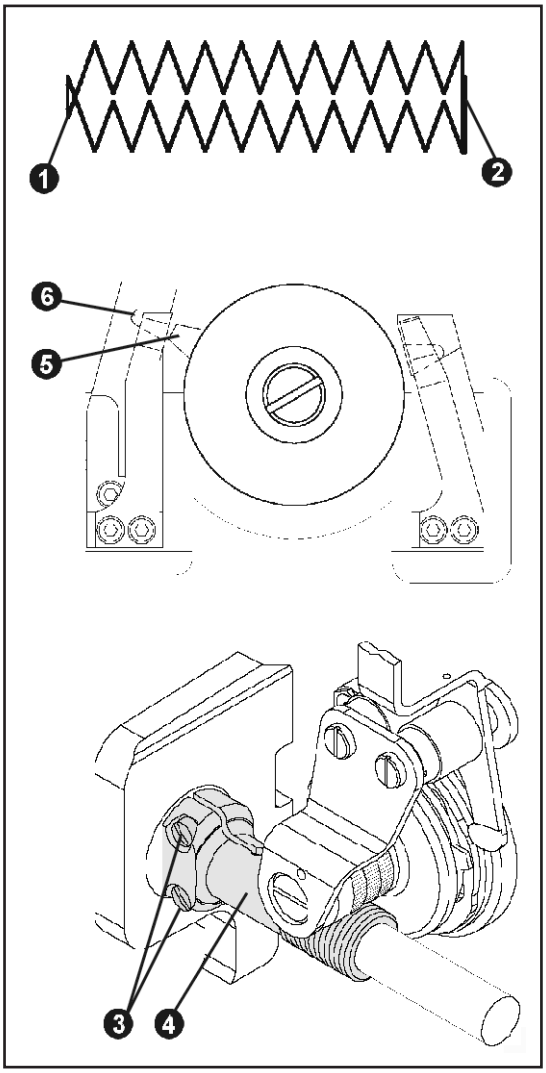
To increase the density 1:
a) Loosen the hex socket screw ❺ and lower the link ❸ away from the bedplate to increase density.
b) Tighten the hex socket screw ❺. Maximum density is 12 stitches per 10 mm (30 stitches per inch).

To decrease the density 2:
a) Loosen the hex socket screw ❺ and raise the link ❸ toward the bedplate to decrease density.
b) Tighten the hex socket screw ❺. Minimum density is 4 stitches per 10 mm (10 stitches per inch).



9. ADJUSTMENT OF BARRING STITCHES

To properly set the first bar ❶, the second bar ❷ must be properly adjusted.



1. Second bar adjustment

Insert a piece of paper under the clamp feet. Turn the handwheel through the sewing cycle until the control spring ❺ release the left shifter arm pocket ❻. Check to see that the clamp plate starts to move to the left just as the needle point rises from the work piece approximately 1 mm.

If the adjustment is incorrect:

a) If the clamp plate moves when the needle is in the work

a1) loosen the screws ❸ in the worm gear

a2) hold the worm gear ❹ by hand and turn the handwheel counter clockwise slightly

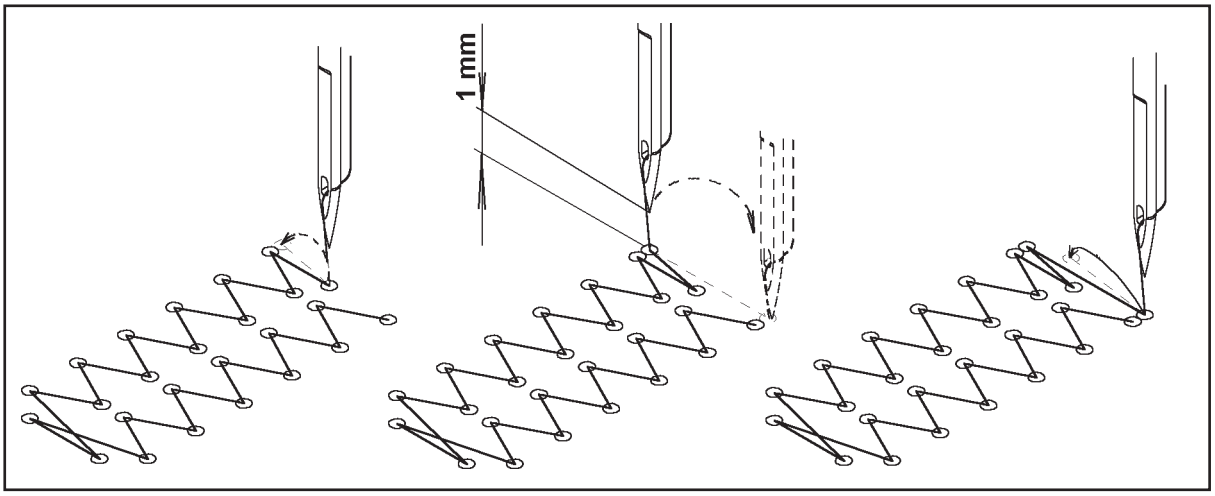
a3) tighten the screws ❸ and recheck the adjustment. Repeat as needed.

b) The clamp plate moves when the needle tip is higher than 1 mm above the work surface

b1) loosen the screws ❸ of the worm gear

b2) hold the worm gear ❹ by hand and turn the handwheel clockwise

b3) tighten the screws ❸ and recheck the adjustment. Repeat as needed.



E - MACHINE ADJUSTMENTS

2. First bar adjustments

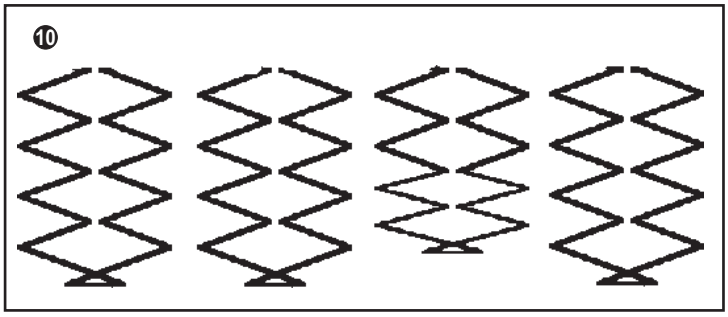
Turn the handwheel until the control spring engages into a detent. Check the distance 1-2 mm between the control spring and the shifter arm. If the distance is different, move the shifter arm after which is locked by two M4 screws❺

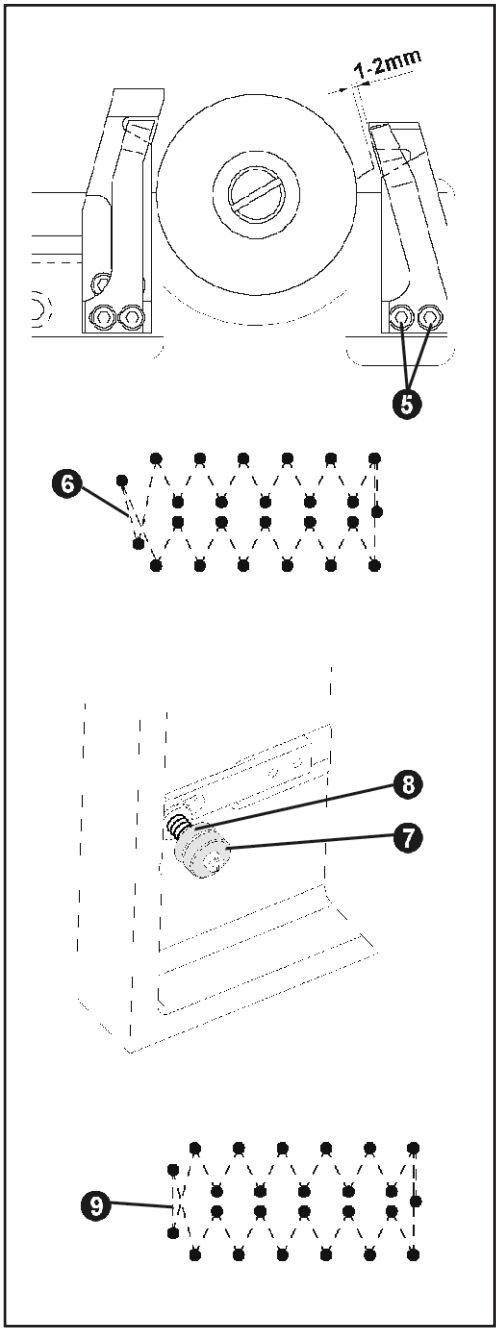
Check the quality of the sewn buttonhole on the paper. If the stitches are uneven ❻ follow below described adjustment:

Loosen the nut ❼ and turn the nut ❽ clockwise. This adjustment will provide the even stitches ❾ in the first bar.

If the length of the buttonholes ❿ is not the same, adjust the brake.

NOTE: If the spring tension on the brake is too strong, the stitch density in the bar may be increased.





E - MACHINE ADJUSTMENTS

3. The clearance adjustment on the cam during the first bar sewing

a) Turn the handwheel until the control engages into the detent of the left shifter arm

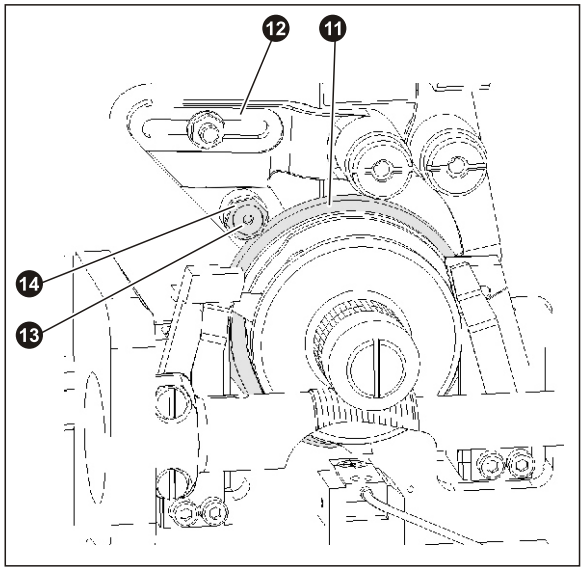
b) Continue turning the handwheel. The main cam assembly ⓫ starts turning and moving the rod ⓬.

c) Check the minimal clearance by hand on the rod ⓬ when the control spring is not engaged with shifter arm.

d) Check the rod tension when the control spring leaves the detento of the right shifter. The clearance must approximately be the same. If incorrect:

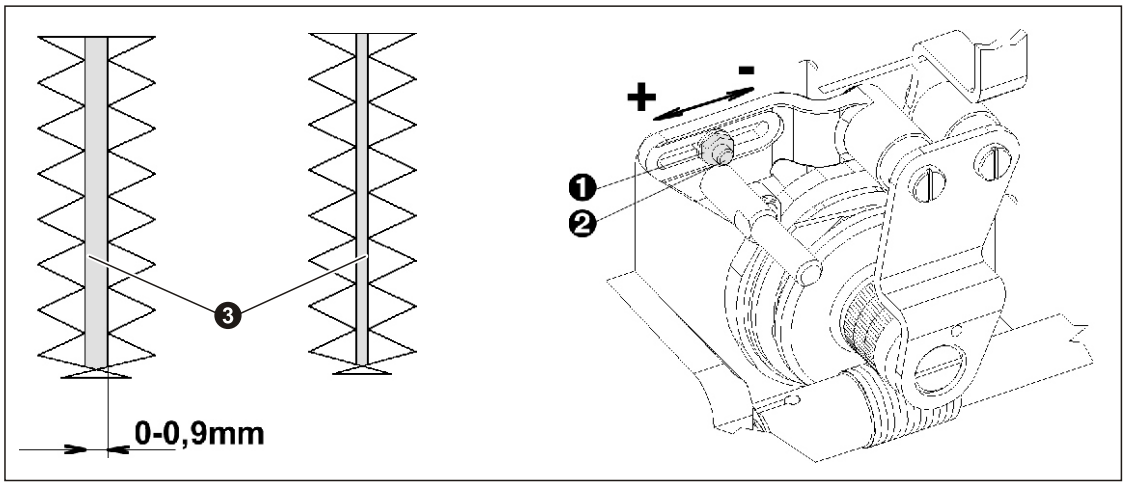
e) Slightly loosen M4 screw ⓭ and turn the eccentric ⓮ (clockwise - clearance decreases, anti-clockwise - clearance increases).

f) Tighten M4 screw after adjustment and check the clearance in both positions.



10. SPACE BETWEEN THE FIRST AND SECOND ROW OF STITCHES

1. Tilt the sewing head on the rest pin.
2. Loosen the nut ❶ and move the stud ❷ to the required position (to the right - space ❸ decreases, to the left - space increases). The space can be adjusted in range 0 - 0.9 mm.
3. Sew buttonhole on scrap fabric to check setting.

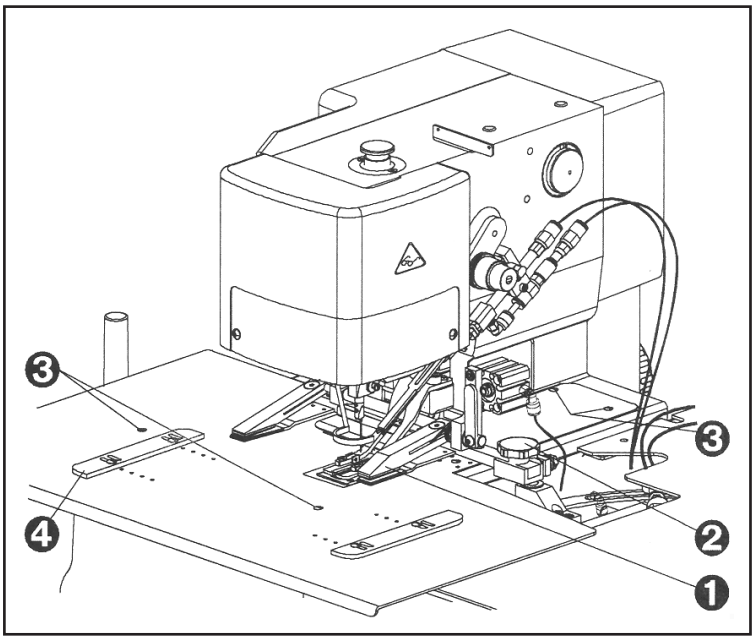


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E - MACHINE ADJUSTMENTS

11. BUTTONHOLE LENGTH CHANGE

To change the sewn buttonhole length, remove knob ❷ and the indexer clamp feet ❶ also 7 screws ❸ and the cover plate ❹.

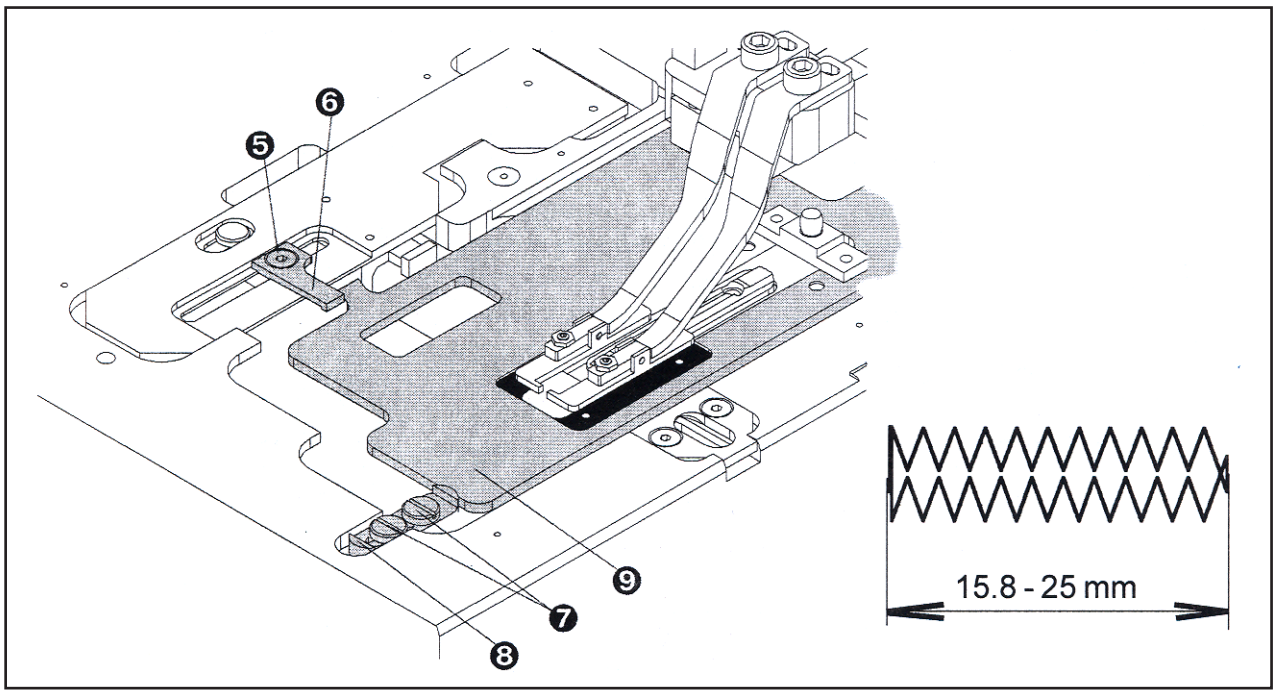


1. Loosen the screw ❺ and move the stop ❻ as needed. To the right - the buttonhole is shortened, to the left - the buttonhole is extended. The length can be set in range 15,8 - 25 mm (0.62 - 0.98“).

2. Loosen the 2 screws ❼ and slide the stop ❽ temporarily forward (away from the clamp plate). Reinstall the cover plate ❹. Sew two sample buttonholes on paper and measure their length.

3. Remove the cover plate ❹ again and move the front stop ❽ against the edge of the clamp plate ❾.

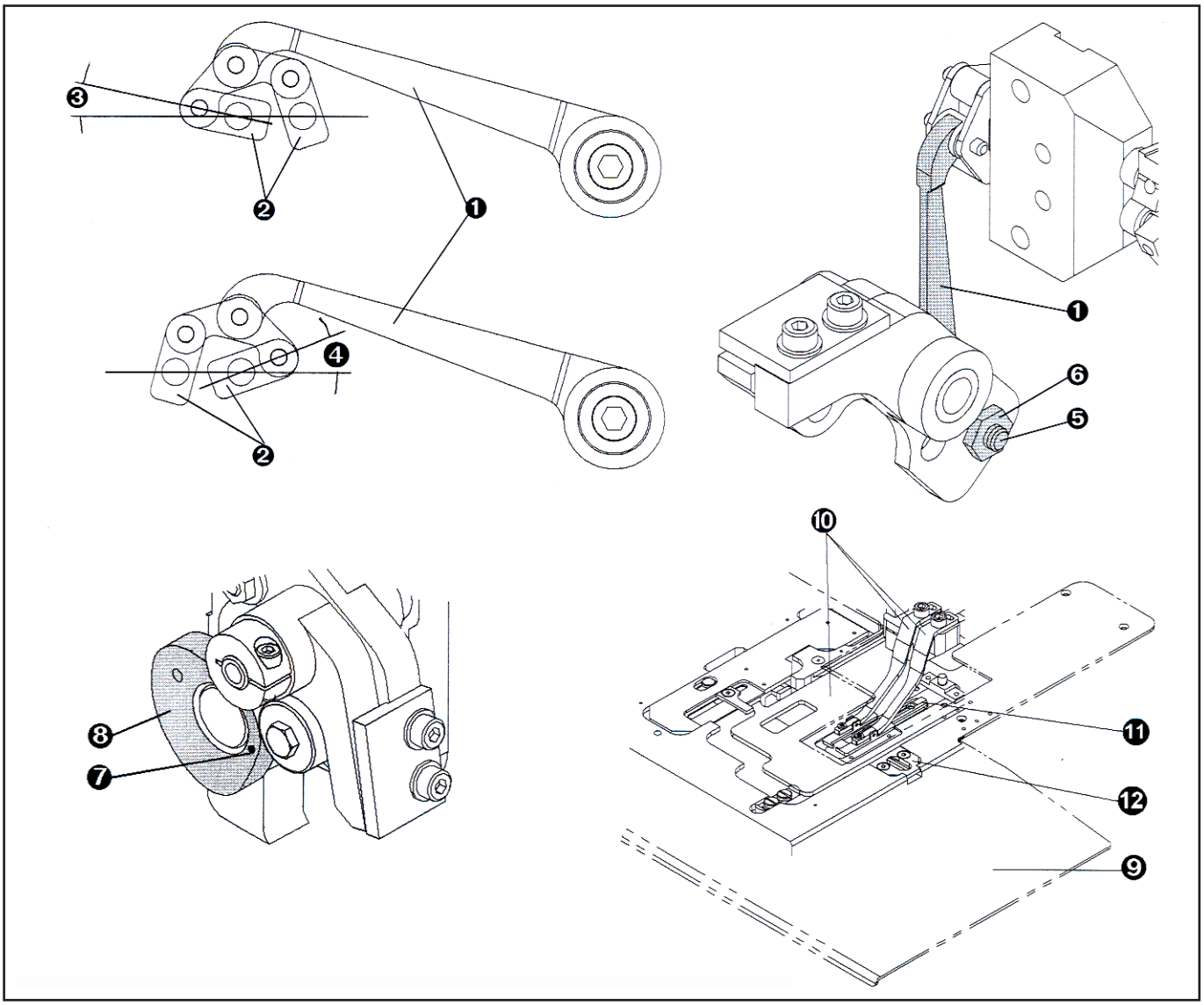
4. Install the cover plate ❹. The machine is ready for sewing with the changed buttonhole length.



12. LOOPER ADJUSTMENT

Before making this adjustment, follow the below described points:

- Turn the handwheel and observe the position of the connecting link ❶ at both ends of the looper link arm travel ❷. Angle A ❸ must equal angle B ❹.
- If incorrect - loosen the hex mounting screw ❺ and rotate the eccentric adjusting nut ❻ as needed. Tighten the hex mounting screw ❺.
- Turn the handwheel and bring the needle bar to the upper position.
- Check if the needle is straight.
- Tilt the machine head on the rest pin and check if the mark ❼ on the looper cam ❽ is on t
  The left side. If the mark is on the right side, remove it and install it correctly. Return the sewing head back.
- Remove the cover plate ❾, disconnect the air tubes from the clamp feet cylinder and remove the clamping assemby ❿ from the machine, remove the throat plate ⓫, trimming hook cover ⓬ and trimming hook. Dismantle the loopers with holders.

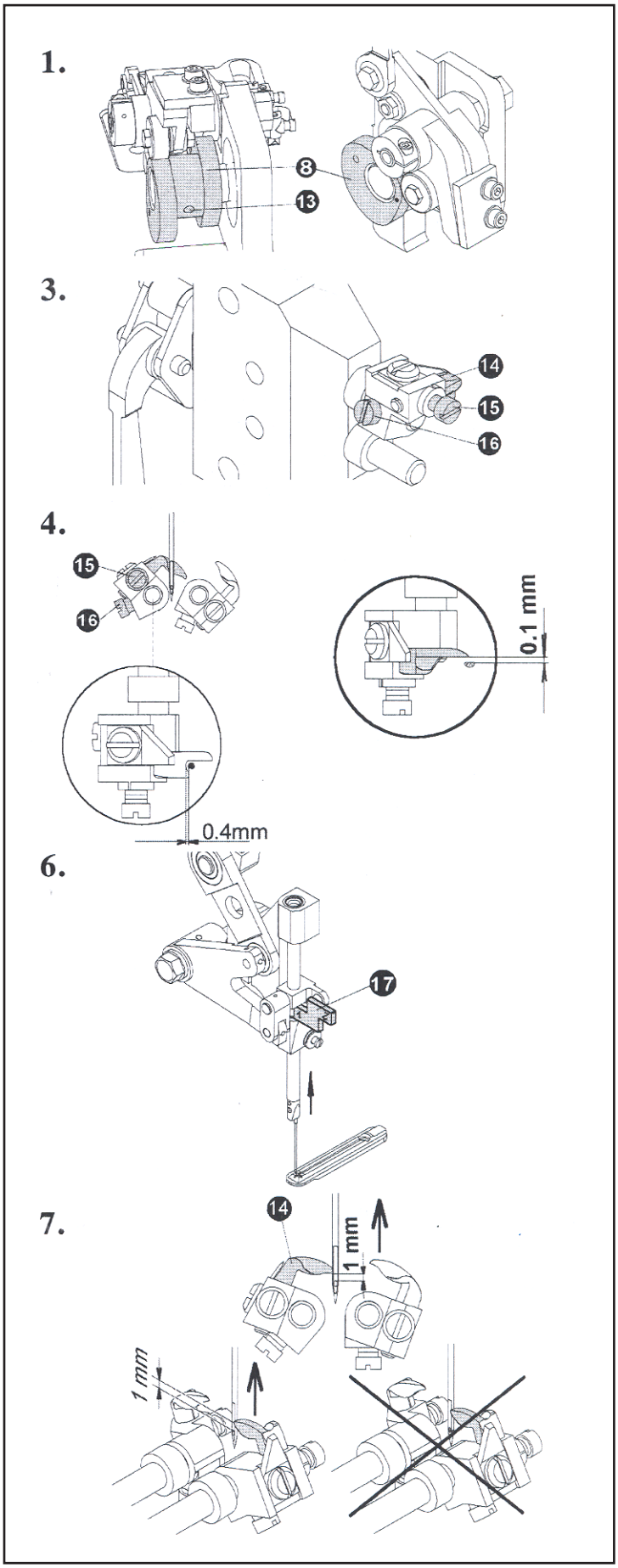


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E - MACHINE ADJUSTMENTS

The first looper adjustment

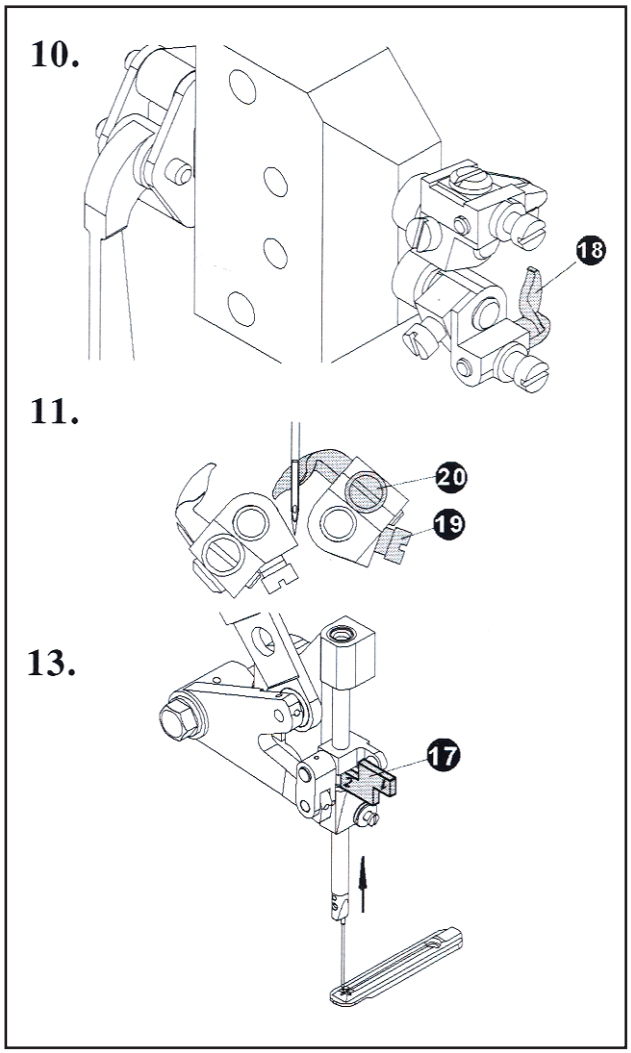
1. Bring the machine to the home position and loosen the screws ⓭ of the looper cam ⓼ and adjust the looper cam to the lowest position.
2. Loosen the looper set screw ⓯ and turn the looper to be perpendicular to the hole in the looper holder.
3. Install the holder with the first looper ⓮ on the shaft.
4. Loosen the looper holder screw ⓰ and move t h e holder so that the needle passes the looper in the center of the looper recess. There must be clearance 0,4 mm between the needle and the looper recess. Tighten the looper holder screw ⓰.
5. Loosen the looper screw ⓯ and turn the looper ⓮ to the needle to obtain the distance 0,1 mm between the needle and the looper tip.
6. Turn the hand wheel counter clockwise and insert the gauge ⓱ with 1 mark (wider side of the gauge) between the needle bar holder and the needle bar clamp when the needle returns to the home position from the lower position.
7. Check to determine if the tip of the looper is at the centerline of the needle 1 mm above the needles eye.
8. If incorrect - loosen the looper cam screw ⓭ by the wrench and hold it . Turn the hand wheel (counter clockwise - if the looper tip is higher than1 mm; clockwise - if less than 1 mm). Tighten both looper cam screws ⓭ securely.
9. If it is necessary to adjust the looper cam again, check the clearance 0,4 mm between the needle and the looper recess.

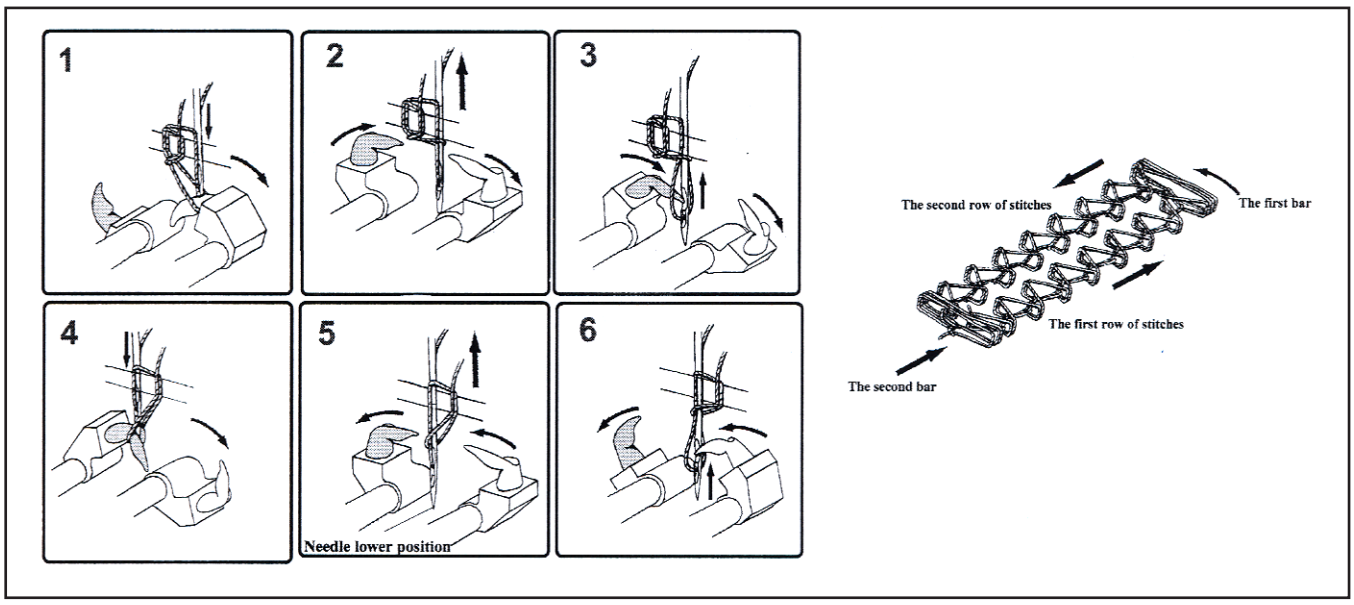


E - MACHINE ADJUSTMENTS

The second looper adjustment

10. Insert the second looper ⓲ on the looper shaft.
11. Loosen the looper holder screw ⓳ and move the holder so that the needle passes the center of the looper recess. There must be clearance 0,4 mm between the needle and the looper recess. Tighten the looper holder screw.
12. Loosen the looper screw ⓴ and turn the looper ⓲ to the needle to obtain the distance 0,1 mm between the needle and the looper tip.
13. Turn the handwheel counter clockwise, insert gage ⓱ with mark 2 (narrower side of the gage) between the needle bar holder and needle bar clamp.
14. Check if the looper tip crosses the axis of the needle 1 mm above the needle eye.
15. If it is necessary to adjust the looper cam again, check the first looper adjustment.





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E - MACHINE ADJUSTMENTS

13. THREAD DRAW-OFF

1. Adjustment of the Draw-Off Lever Position

The correct adjustment ensures a long enough thread tail for starting the sewing of the next buttonhole.Remove the covers because this mechanism adjustment is performed in the rear of the head. Air supply is necessary for this adjustment.

a) loosen the screw ❻

b) the piston ❼ of the cylinder ❽ is in the home position (retracted). Move the lever ❾ to the pin ❿ with minimal clearance 0.1 mm. Tighten the screw ❻

c) check the correct clearance adjustment by switching the valve ⓫ of the draw-off cylinder (YV1).

2. The thread end adjustment

If the first stitches are missing or the buttonhole is not sewn, follow the below mentioned steps:

a) loosen the screw ❶.

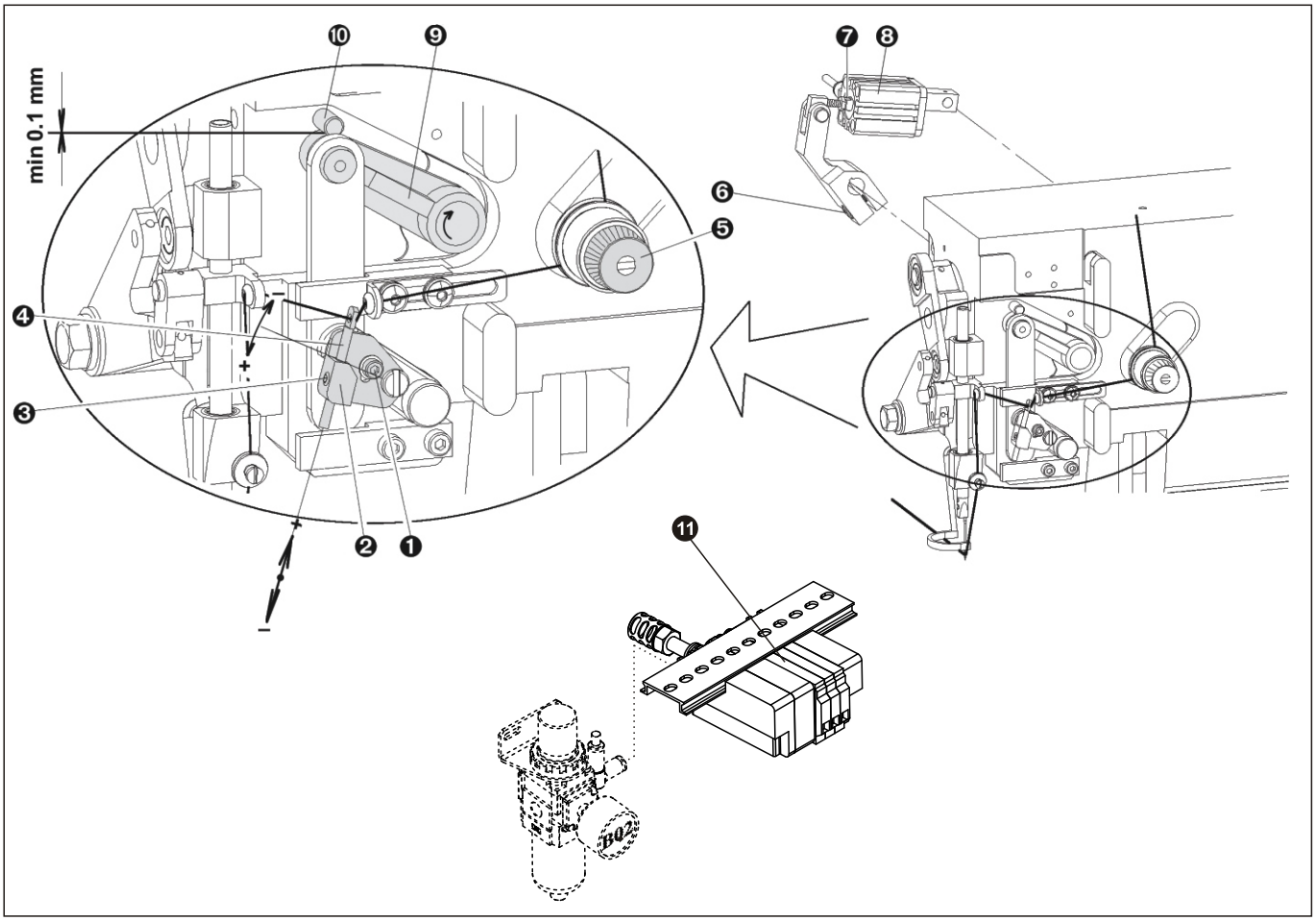
b) turn the draw-off lever ❷ counter clockwise to increase the thread tail length; turn the draw-off lever clockwise to decrease the thread tail length

3. Locking the stitches

If the skipped stitches problem appears during the sewing, follow the below mentioned steps:

a) loosen the screw ❸

b) move the thread take-up ❹ to increase the size of the needle loop



14. THREAD TENSION

The thread tension influences the appearance of the buttonhole. A thread tension change may be needed if the thread and fabric change. Check to be certain all parts, which contact the thread, are smooth and polished with no burrs or sharp edges.

- By turning the tension knob ❶ clockwise, the thread tension increases.
- By turning the tension knob ❶ anti-clockwise, the thread tension decreases.

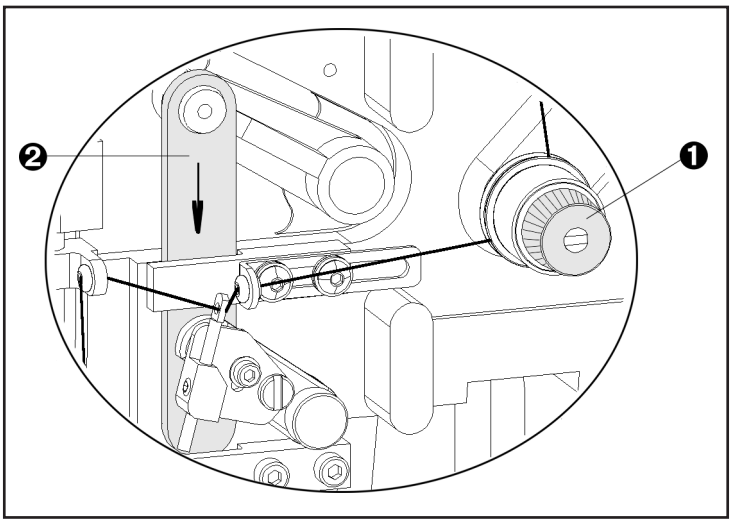
NOTE: Too big thread tension can cause the unsightly appearance of the buttonhole when sewing on a thin and elastic material.

1. Adjustment of the tension discs opening

The opening of the tension discs is performed when the second bar is sewn. When the tension discs are opened, it is possible:

a) to pull the thread from the spool when the draw-off lever ❷ receives the impulse for operation

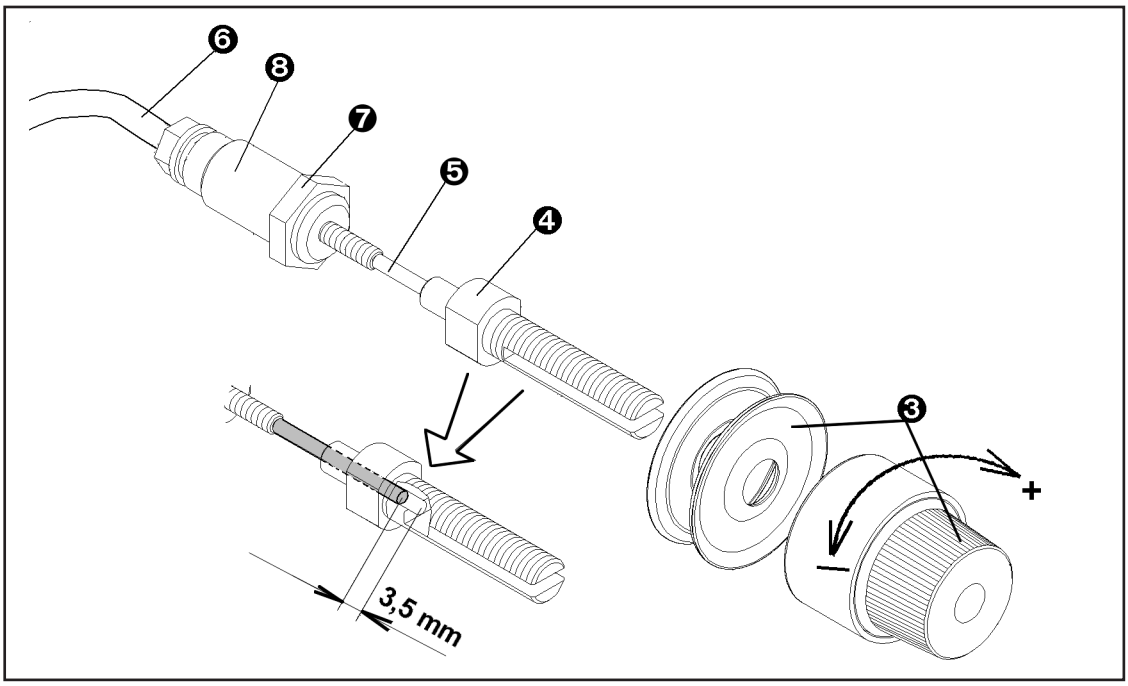
b) by decreasing or increasing of the air flow it is possible to regulate the tightening of the last stitch of the buttonhole



E - MACHINE ADJUSTMENTS

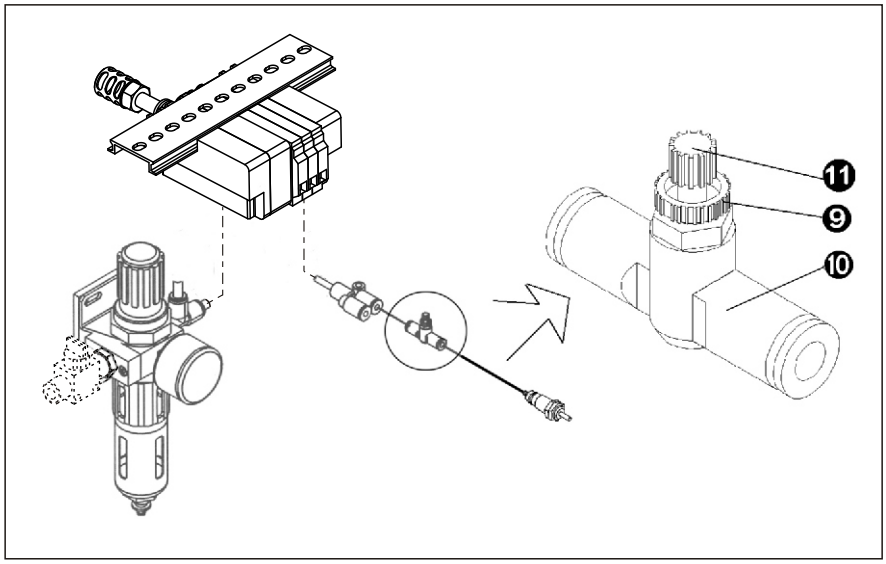
2. The correct position of the tension mechanism

a) remove the tension assembly ❸ from the shaft ❹
b) check if the distance between the stud slot edge and the pin ❺ is 3.5 mm If incorrect, it is necessary to adjust the position on the pin.
c) remove the pulley cover and the head cover to obtain a good access for this adjustment. Switch off the air supply.
d) disconnect the air tube ❻ from the cylinder.
e) loosen the nut ❼ and turn thecylinder ❽ as necessary. Turning clockwise the pin is extended. Tighten the nut ❼ when the correct measurement is obtained.
f) connect the air tube ❻ to the cylinder, open the air supply and install the covers.



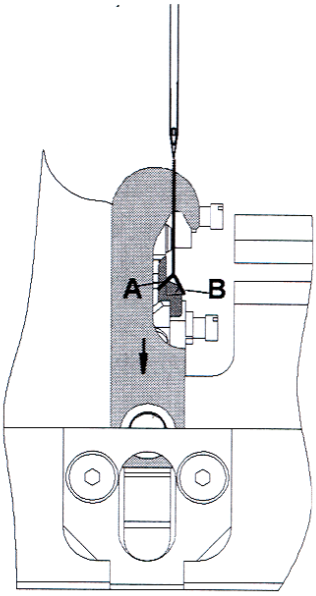
3. Regulation of the tension discs opening

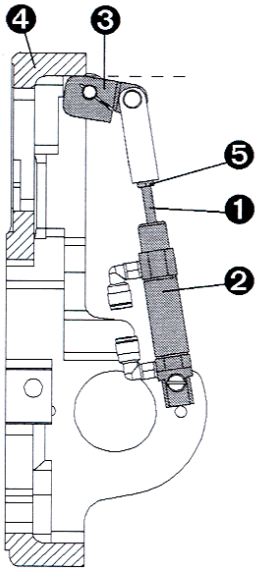
If the last stitch is not tightened, follow the below mentioned steps:
a) Loosen the locking nut ❾ on the speed controller ❿
b) To obtain better tightening of the last stitch, tighten screw ⓫ and lock the nut ❾ securely.



15. THREAD TRIMMING

Trimming mechanism ensures the correct thread trimming after sewing the last stitch. A the trimming hook moves in the direction of arrow, both thread loop legs A and B are pulled forward. When the thread hook approaches the end of the stroke, leg A contact the trimming knife, cutting the thread.





1. Trimming cylinder adjustment

a) tilt the machine head on the rest pin and close the air supply. Extend the piston ❶ of the cylinder ❷ to the maximum position.

b) check to be certain that the cylinder does not push the lever ❸ too high and into contact with the bedplate casting ❹. If no clearance exists, adjust as described in c, d, and e below.

c) loosen the screw ❻

d) to obtain the correct position of the lever ❸, loosen the nut ❺ and turn the cylinder piston ❶ in or out as needed

e) tighten the nut ❺ and the screw ❻. After this adjustment check if no axial clearance exists on the shaft ❼.

f) if the axial clearance exists on the shaft, loosen the screw ❻, move the shaft ❼ to the left so that the locking ring ❽ touches the recess in the plate ❸. Move the lever to the right and tighten the screw ❻.

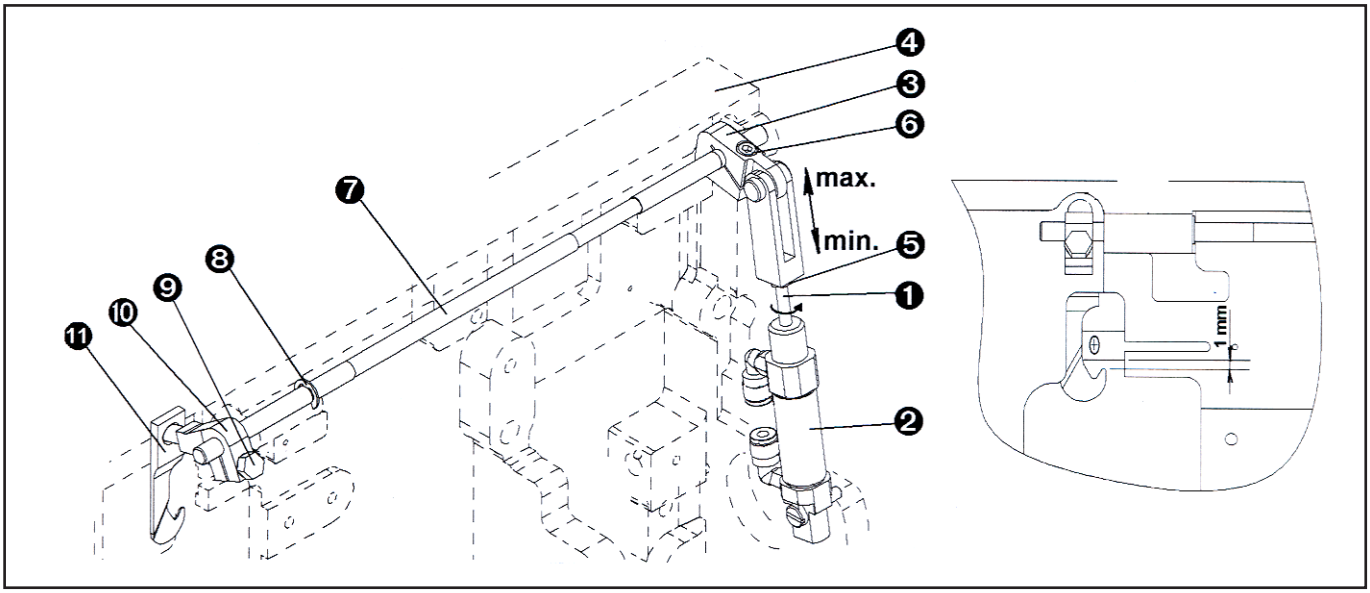
2. The trimming hook ⓫ adjustment

a) push the piston ❶ of the trimming cylinder ❷ to the maximal position and loosen the screw ❾ of the trimming actuator ❿.

b) turn the trimming actuator ❿ and set the clearance 1.0 mm between the throat plate and the point of the trimming hook.

c) tighten the screw ❾ of the trimming actuator ❿.

d) open the air supply and check by switching the valve of the trimming cylinder if the actuator ❿ does not hit the bedplate casting.



E - MACHINE ADJUSTMENTS

16. MACHINE HEAD CLAMPING FEED ADJUSTMENT

1. Adjustment for clamp height

Be sure that air supply is switch on and the clamping feed are opened. If clamping feed are not opened, push the clamp Up / Down button.

a) loosen the nut ❶

b) turning the screw ❷ clockwise lowers the clamping feed mechanism ❸ to clamp mat ❹.

c) tighten the nut ❶

NOTE: Correct height is when the underside of the clamping feed are slightly lower than the point of the needle in the home position.

2. Adjustment of the distance between the clamping feed

Be sure that the clamping feed are closed. If clamping feed are not closed, push the clamp Up / Down button.

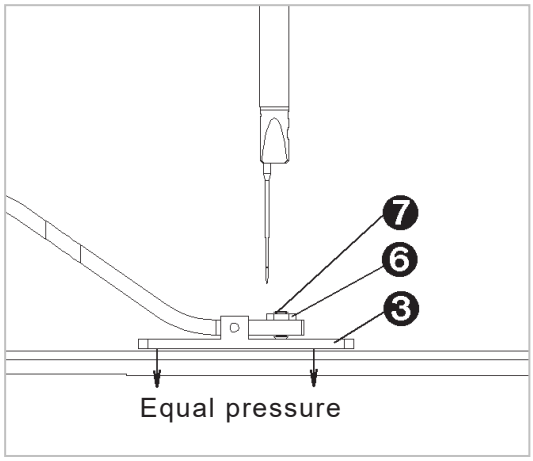
a) turn the handwheel to be sure that needle does not hit the clamping feed ❸. If it hits:

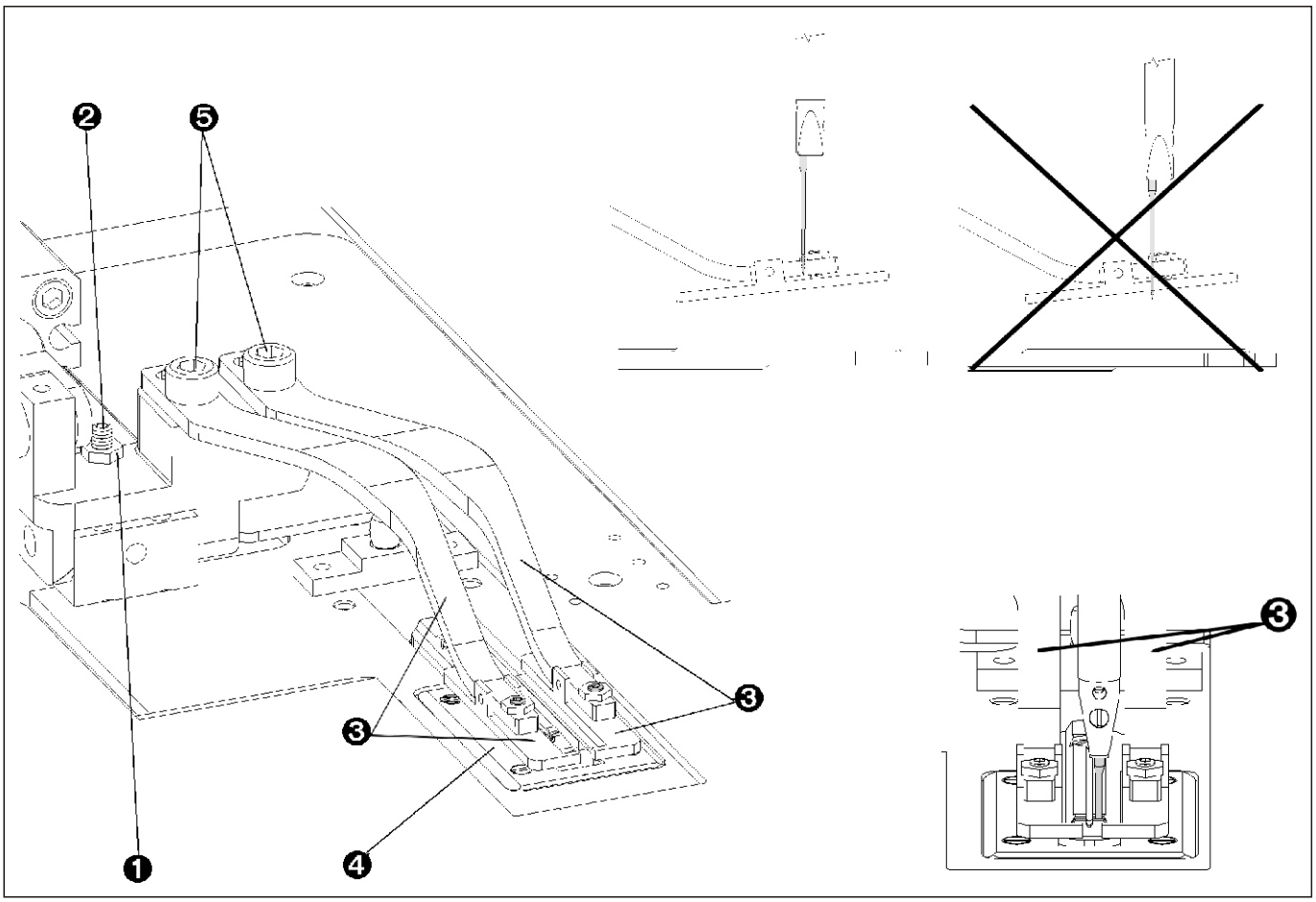
b) push the clamp up/down button to open the clamping feed

c) loosen the screw ❺ and get the clamping feed arm further from the needle and tighten the screw ❺

d) to check this adjustmet, turn the handwheel when the clamping feed are closed. The needle must not hit the clamping feed.

NOTE: Keep minimal distance between the needle bar and the clamping feed during this adjustment. Too big distance of the clamping feed can cause the missing stitches when sewing on thin and elastic fabrics.



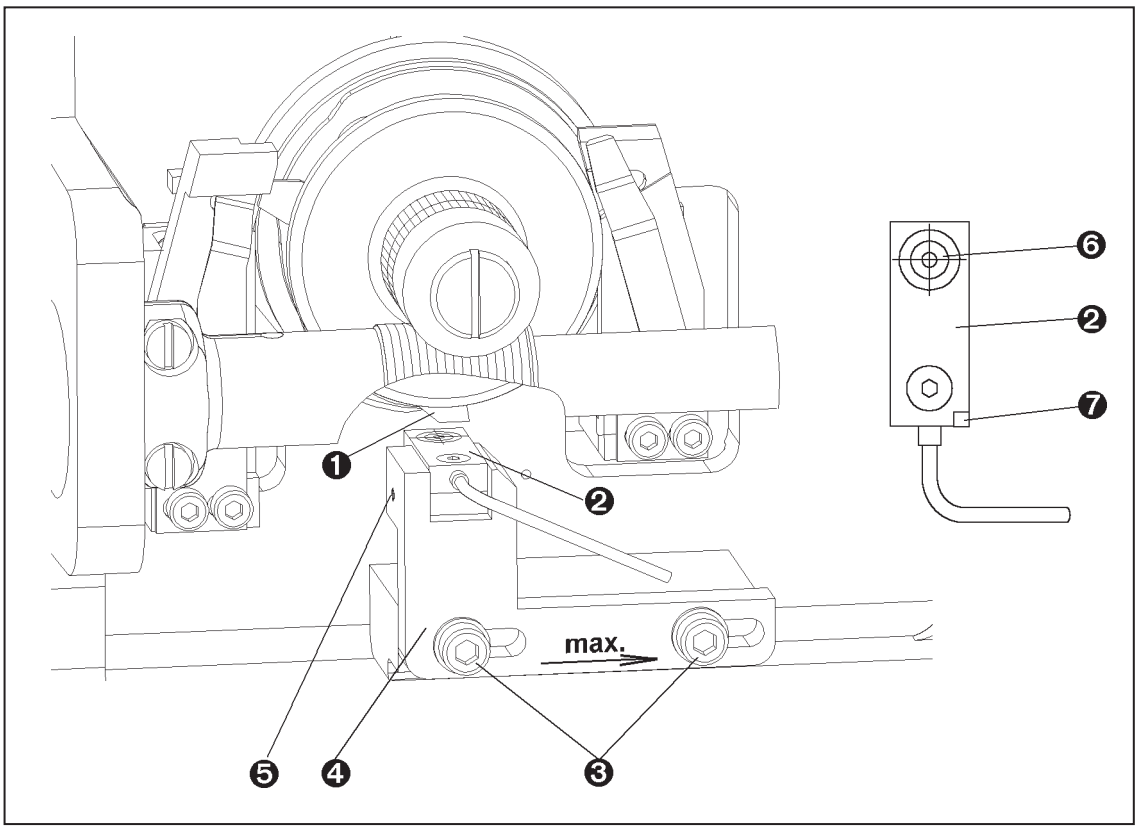


E - MACHINE ADJUSTMENTS

17. ADJUSTMENT OF THE STOPPING SENSOR POSITION

Follow the below described steps to set the position of the sensor.

1. Put machine in the service mode (see E-3).
2. Turn the handwheel counter clockwise until the machine is in the position for sewing the second bar. The stop disk finger ❶ must be perpendicular to the sensor ❷.
3. Loosen the screws ❸ and move the sensor bracket ❹ to the right. Tighten the screws ❸.
4. Loosen M3 screw ❺ and adjust the sensor position so that the stop disk finger ❶ is in the center of the sensor mark ❻. The red LED ❼ lights up on the sensor.
5. Tighten the M3 screw ❺.
6. Return the machine head back to the working positon.
7. Push the F1 NEXT key on the control panel and switch the machine to the working mode.
8. Connect the air tubes with the indexer clamp feet. Open the air supply.
9. Start the machine and check the correct stopping of the machine. The needle bar must stop in the home (upper) position.

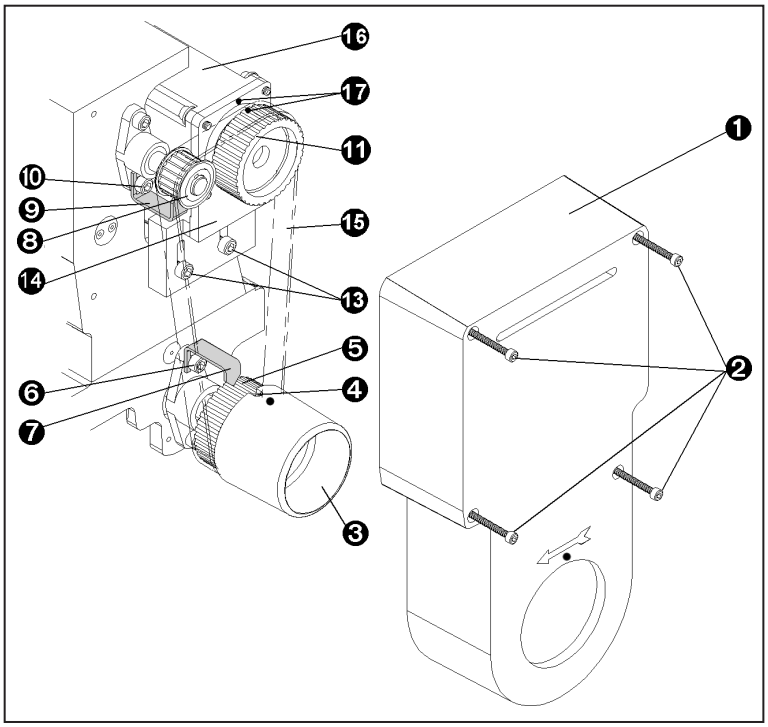


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E - MACHINE ADJUSTMENTS

18. CHANGING THE DRIVE BELT

1. Remove the pulley cover ❶ after loosing the M4 screws ❷.
2. By turning the handwheel ❸ adjust the position of the shaft so that the screw ❹ on the pulley ❺ is level with screw ❻ on the bearing carrier lower shaft.
3. Lock the position by the holder 24.0030.0.000 ❼, which is included in the accessories. Using the screw ❻ fix the holder to the bearing holder upper screw.
4. Turn the pulley ❽ of the needle bar shaft, until the needle bar reaches the upper position.
5. Lock the position by the holder 24.0024.0.000 ❾, which is included in the accessories. Using the screw ❿ fix the holder to the bearing carrier lower mounting screw.
6. Rotate the motor pulley ⓫ until the marks ⓱ on the motor pulley and the motor bracket are aligned.
7. Loosen the screws ⓭ on the motor bracket ⓮ and move the motor with the machine bracket down to fit the belt.
8. Fit the belt ⓯ on the shaft pulleys ❺, ❽ and motor pulley ⓫. To tighten the belt ⓯, move the motor bracket ⓮ with motor ⓰ up. Tighten the screws ⓭ to lock the motor bracket. Be sure the marks ⓱ are aligned.
9. Remove the pulley holders ❼, ❾.
10. Press the pedal to check the adjustment. The needle bar must be in the upper position.
11. Small changes of the needle bar adjustment are possible in the program parameters:



a) needle bar did not reach the upper position

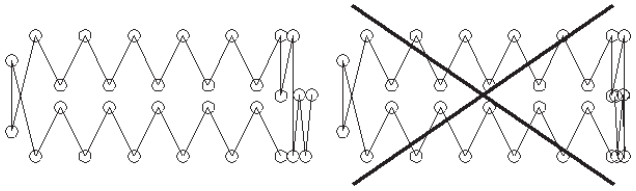
- push F1 NEXT ➡ F3 ⬅ ➡ 3x F1 NEXT ➡ Ndl up pos (0-600) 320 ➡ to obtain the correct position of the needle bar, increase the value
- press F5 CLR, to return to the main screen.

b) needle bar went beyond the upper position

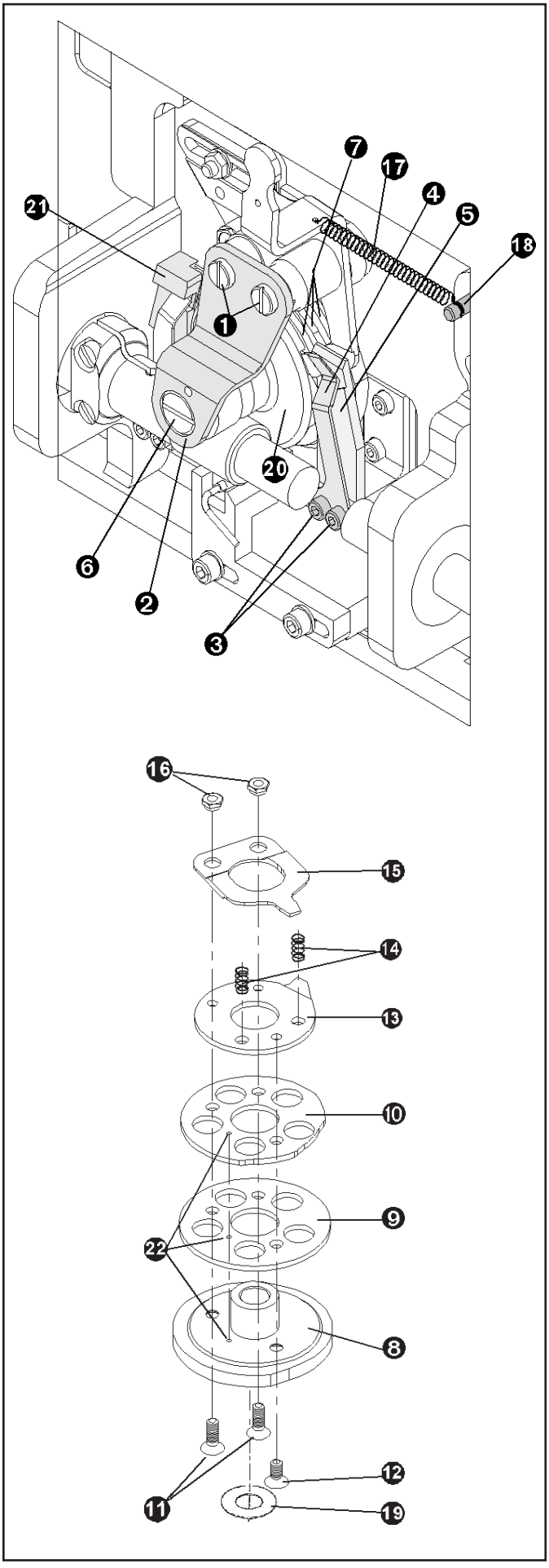
- push F1 NEXT ➡ F3 ⬅ ➡ 3x F1 NEXT ➡ Ndl up pos (0-600) 320 ➡ to obtain the correct position of the needle bar, decrease the value
- push F5 CLR to return to the main screen

19. THE MAIN CAM CHANGE

1. Loosen the screws ❶ and remove the holder ❷.
2. Unscrew the screws ❸ and remove the right control spring ❹ and the holder ❺.
3. Loosen the stud ❻ and remove the worm geah u b and the main cam assembly ❼. Dismantle the assembly.
4. Assemble the main cam assembly according to the following steps:
   a) Install the washer ❾ on the barring cam ❽. The mounting hole ❷❷ must be covered.
   b) Install the feed reversing cam ❿ by the same way.
   c) Place the stop disc ⓭ on the feed reversing cam ❿ and fix it using the screws ⓫ and ⓬.
   d) Insert the springs ⓮ into the holes in the stop disc and install the drive disc spring ⓯. Lock it using two screws⓰.
5. Remove the spring ⓱ from the pin ⓲.
6. Using a grease, place the thrust washer ⓳ on a bedplate.
7. Install the main cam assembly ❼ and the worm gear hub on the thrust washer. Lock it by stud ❻.
8. Install the spring ⓱ on the pin ⓲.
9. Install the holder ❺,control spring ❹ and tighten the screws ❸.
10. Install the holder ❷ and lock it by screws ❶.
11. Turn the hand wheel to check the clearance on the main cam - see section E9, point 3.
12. Switch the machine on and check if the machine stops in the home position - see section E2, E9, point 1
13. Check the shape of a bar - see E9, point 2.
14. Sew a few buttonholes . The shape of a bar must be as shown on picture below.



15. If incorrect, tilt the machine head and move the left shifter arm to the left to obtain correct shape of abar (the clearance between the control spring and the shifter arm spring ㉑ must approximately be 1.2 - 1.5 mm).

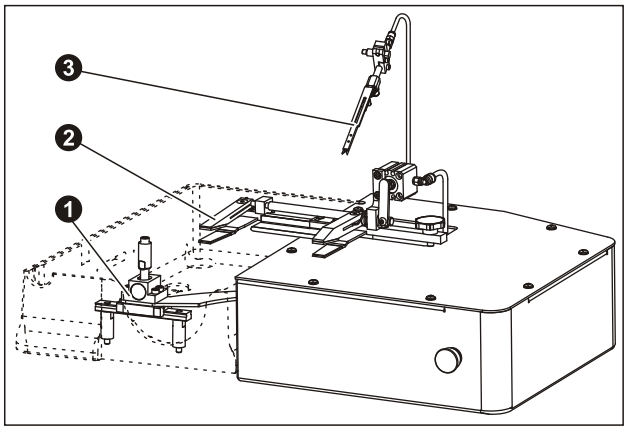


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F - INDEXER - STRAIGHT

1. INTRODUCTION

The indexer is used to clamp and feed sleeves wiggans while sewing Imitation Buttonholes. Programs can be set for any number of buttonholes up to 8 within a 63 maximum travel and the space between each is also adjustable. The outside indexer parts are the following mechanisms: Bar movement ❶, Clamping ❷ and Thread puller ❸.



The range of the Indexer is limited by the following parameters:

Maximum indexer shift: 63 mm
Number of buttonholes: 1 – 8

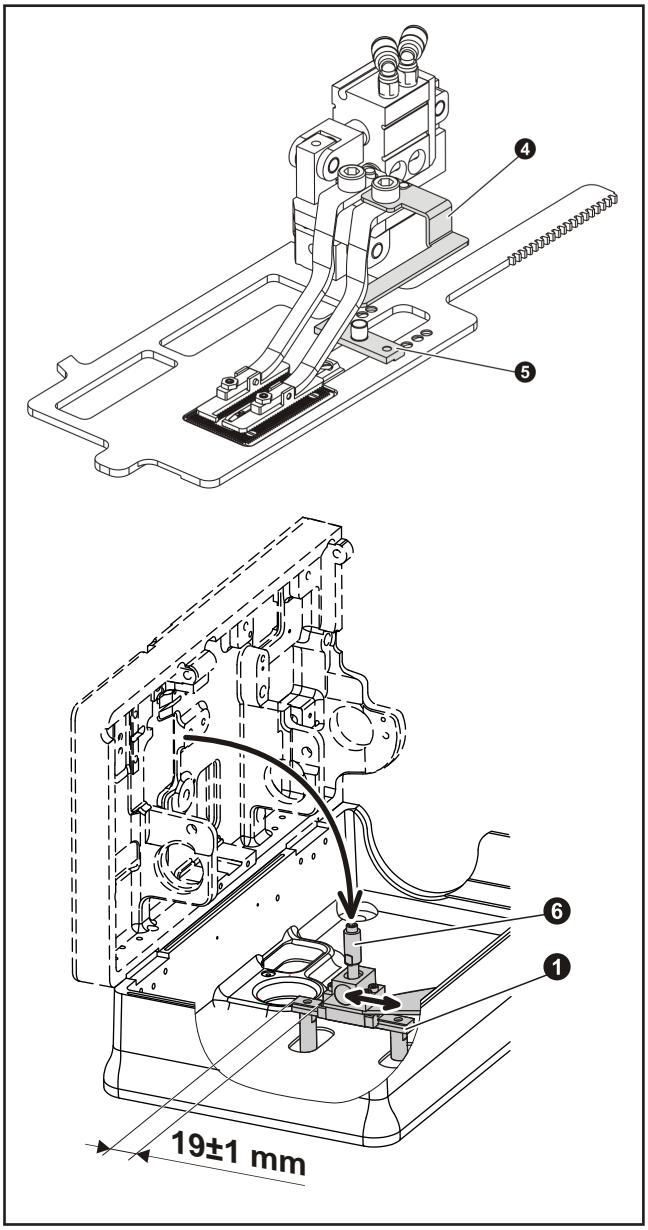
2. SEWING HEAD AND INDEXER CONNECTION

1. Indexer is fixed by the wood screws to the table 24.0107.1.000. The distance between the machine base and the indexer cover is 1mm. The indexer front cover is aligned with the machine base.

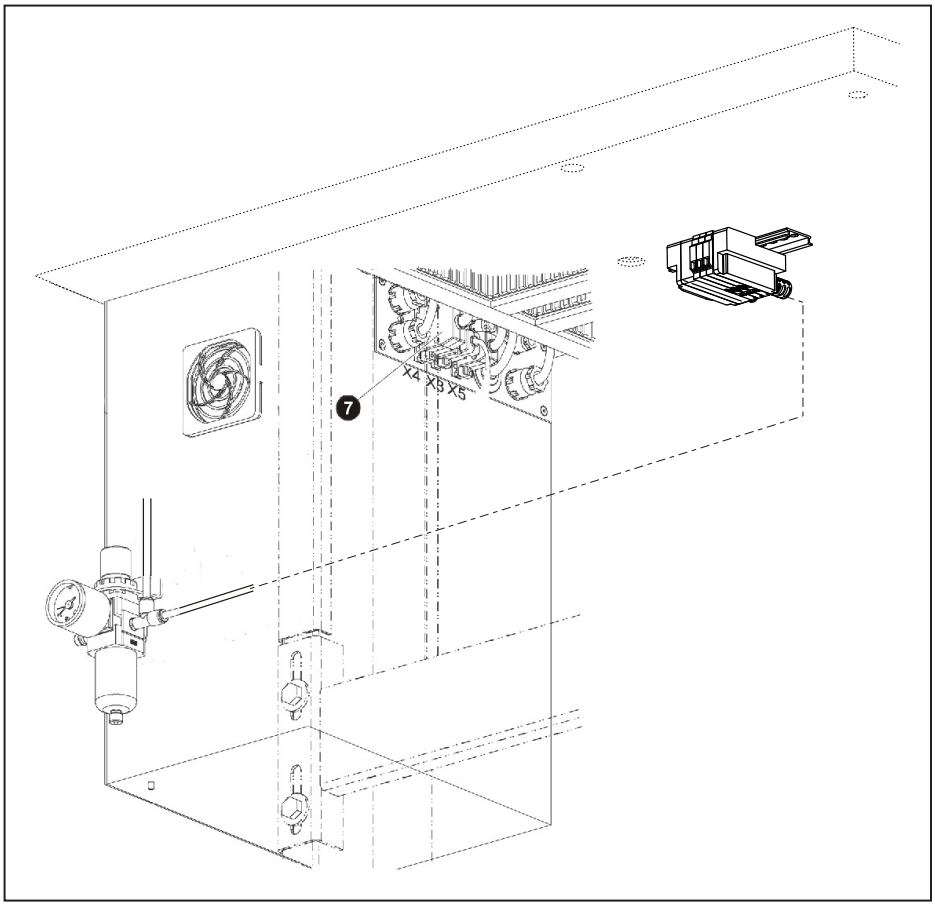
2. The indexer clamp feet are installed on the holder ❺ 22.3036.0.000 and are locked by the bracket ❹ 24.4018.0.000

3. Indexer is connected with the sewing cam mechanism by the pin ❻.

To ensure correct return of the sewing head to the working position, keep clearance 19 ± 1 mm as shown on the picture.



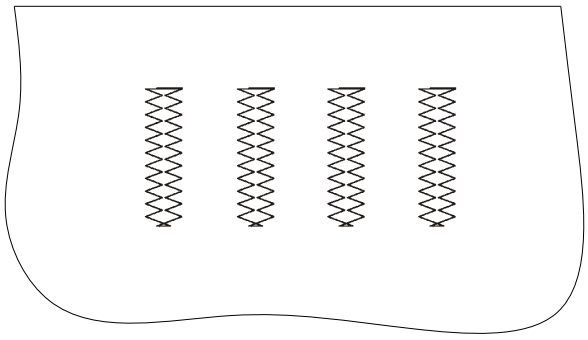
4. The electrical signal for indexer electromagnetical valves (10, 11) is ensured by the connecting cable with cannon conector ❼ (X4), which is connected to the rear of the control box.



3. INDEXER FUNCTIONS

The indexer provides for straight sewing of buttonholes.

Sewing with lateral movement is ensured by falling the sliding nut ❶ into the locking lever ❷.



F - INDEXER - STRAIGHT

4. ADJUSTMENT OF THE INDEXER CLAMPING FEED MOVEMENT

1. By pressing the key F3 on the display, check that the distance **X** between the indexer clamping feed and the sewing head clamping feed is the same on both left and right side.

2. If the distance is not the same, do the following:

a) switch the machine off

b) tilt the sewing head on the rest pin (see chapter E3) and remove the indexer cover ❶. Bring the sewing head back to its working position.

c) move the indexer clamping feed to utmost position

d) loosen the sensor nuts ❷ and position the sensor ❹ into utmost position to get the same distance of the feet **X** on both sides

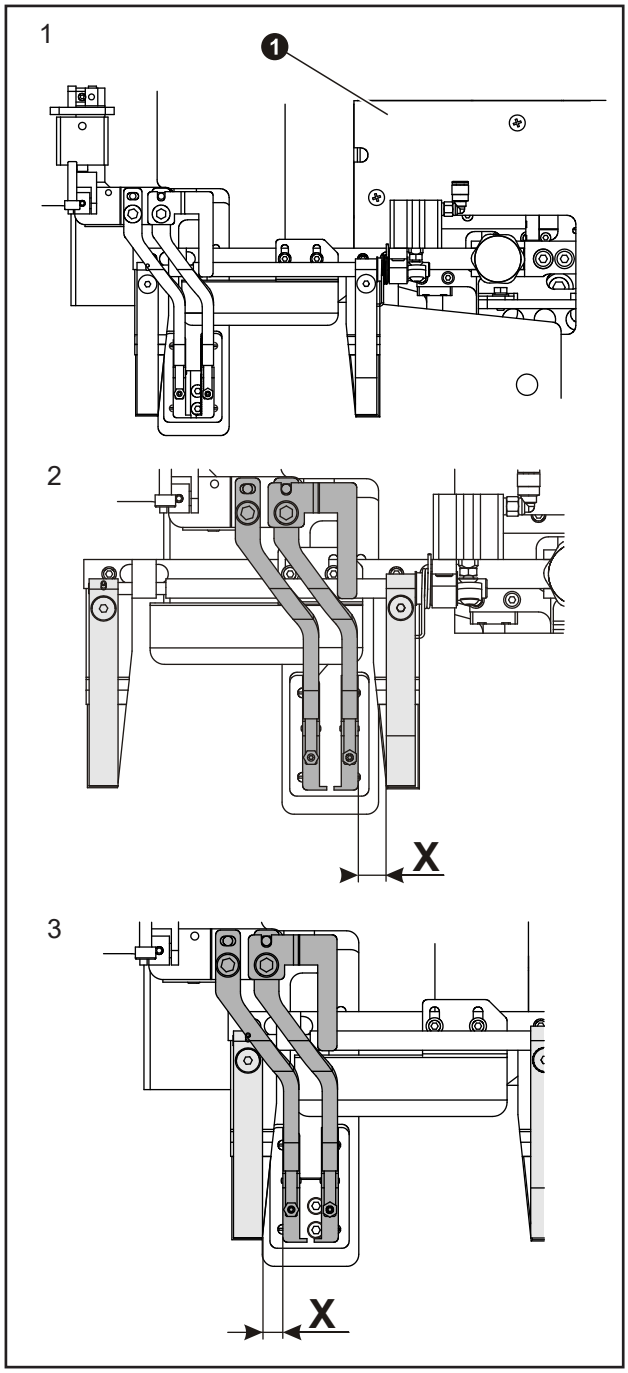
e) adjust the clamping feed ❸ by moving the sensor ❹ to the left or the right

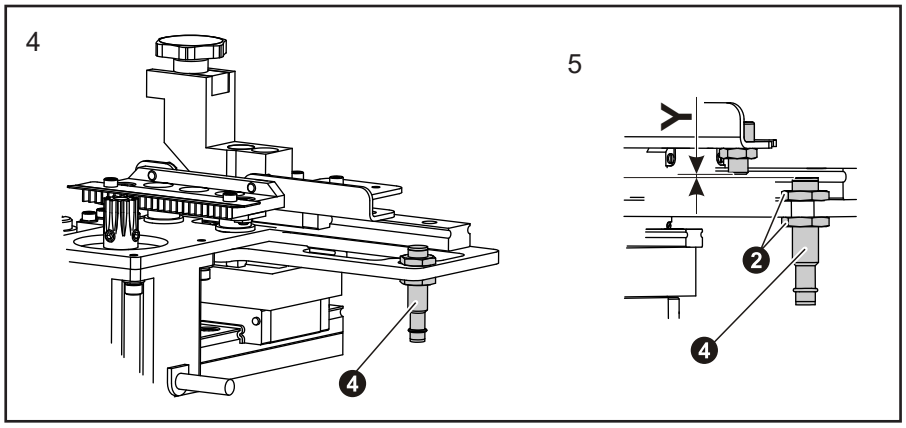
f) make sure that the **Y** sensor ❹ is also correct. Use the gauge **Y** = 0,3 mm to adjust the gap between the sensor and metal part

g) switch the machine on

h) by pressing the key F3, check that the distance **X** between the clamping feed is the same on both sides

3. To ensure smooth movement of the indexer clamping feed, its speed regulation is very important. The adjustment is done electronically - see chapter D-4.





5. THE INDEXER CLAMPING FEED PRESSURE ADJUSTMENT

1. First place the material under the left clamping feed.
2. Press the button  on display. Pull the clamped material and check if the material is held well.
3. Do the same with the right clamping feed.
4. If the pressure is not the same on both clamping feed, follow the below mentioned steps:

The left clamping feed holds the material more than the right one

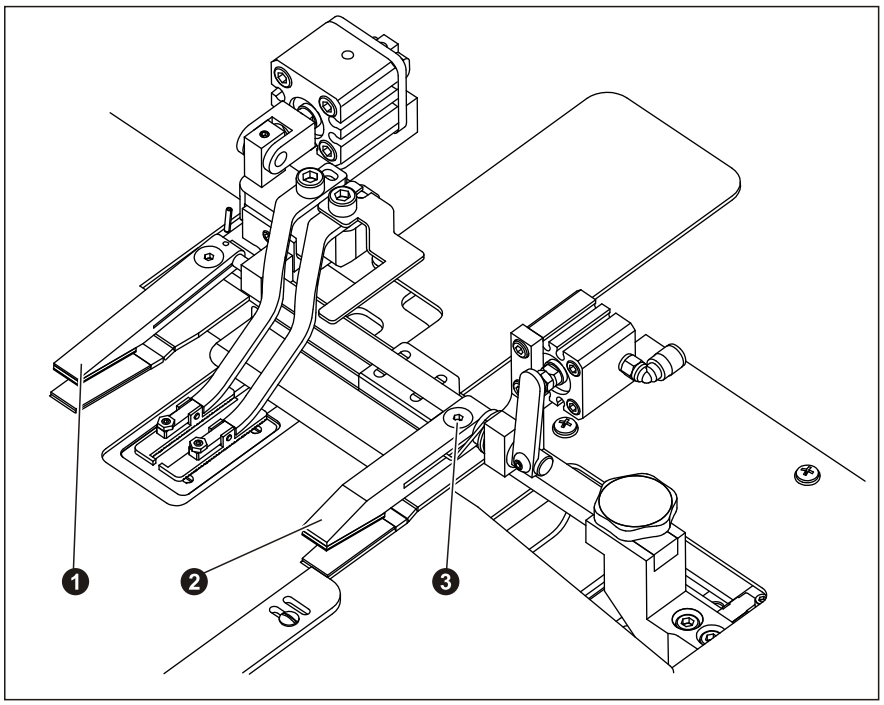
a)press the left clamping feed ❶ by hand down to the clamp mat.
b)move the right clamping feed ❷ closer to the clamp mat by loosing the screw ❸ on the right clamping feed
c)tighten the screw ❸ and release the left clamping feed by hand ❶

The left clamp foot holds the material less than the right one

a)press the left clamping feed by hand down to the clamp mat.
b)move the right clamping feed back from the clamp mat by loosing the screw on the right clamingp feed
c)tighten the screw and release the left clamping feed by hand

Check the correction of the adjustment according to the points 1-4.

NOTE: Since the clamp cylinder is closer to the right clamping feed, it is necessary to set the stronger pressure on the left clamping feed.



F - INDEXER - STRAIGHT

6. THREAD PICK-UP ADJUSTMENT

If the thread is not caught and held after trimming it is necessary to adjust the thread pick-up.

1. The machine must be in the home position.

2. Disconnect the air tubes of the thread puller.

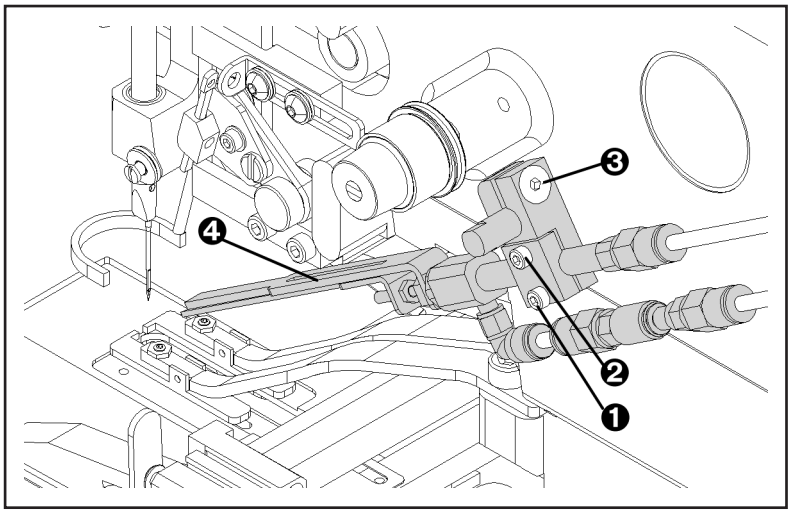
3. Loosen the screws ❶, ❷, ❸.

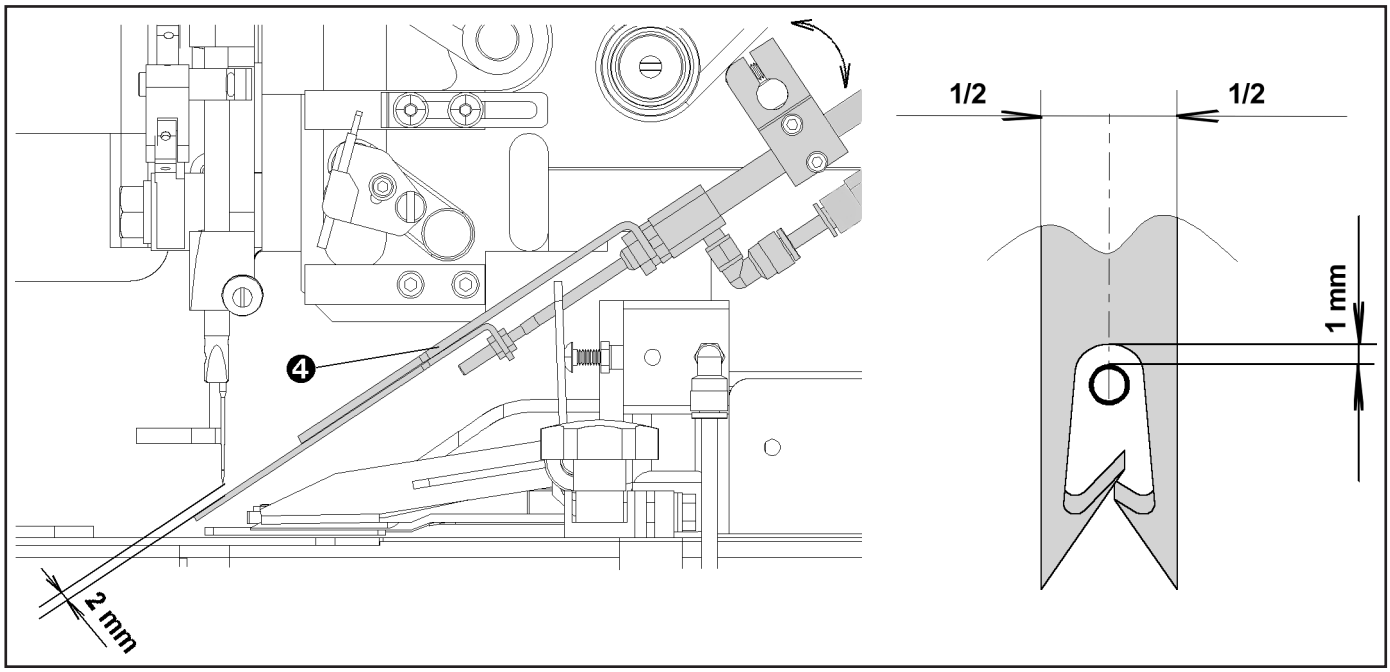
4. Manually extend the cylinder ❹.

5. Adjust the thread puller position to obtain the distance 2 mm between the needle tip and the thread puller and at the same time to have the needle in the centre of the thread puller slot. Tighten the screw ❸.

6. Move the thread puller assembly so that the distance between the needle and the end of the slot is approximately 1 mm. Tighten the screws ❶, ❷.

7. Connect the thread puller air tubes and check the adjustment.

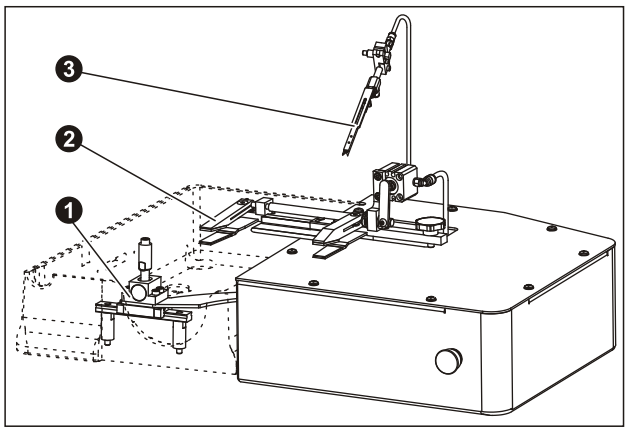




F - INDEXER - ANGLE 20°

1. INTRODUCTION

Indexer – Angle 20° is an additional device that allows automatic sewing of decorative holes with programming a number of holes and their distance. This type also allows angle positioning of decorative holes. As external parts of the indexer, there are mechanisms of bar-tack move ❶, clamping ❷ and pulling up threads ❸. Accurate positioning of the indexer is ensured by the position sensor and the step motor.



Indexer Range:
Number of holes: 1-8
Angle of orientation: 0°, 6° - 20°

2. INTERCONNECTION OF THE SEWING HEAD AND THE INDEXER

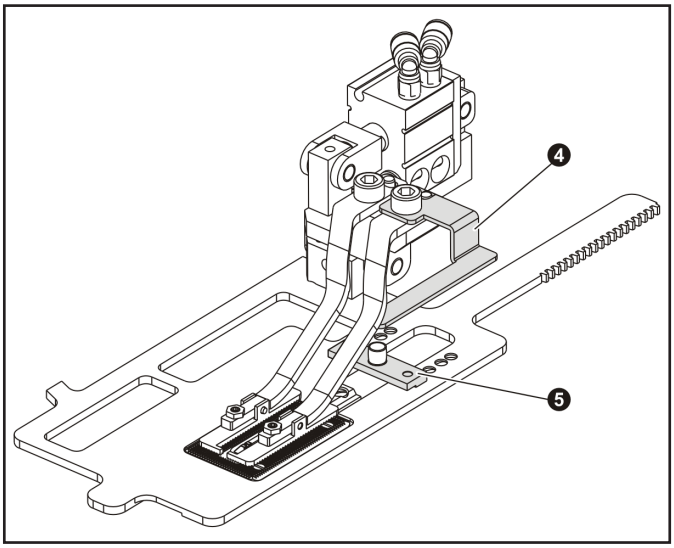
1. The indexer is fixed to the table (24.0107.1.000) by wood screws so that the distance between the sewing machine base and the indexer cover is 1 mm. The front of the indexer is in one level with the sewing machine base.

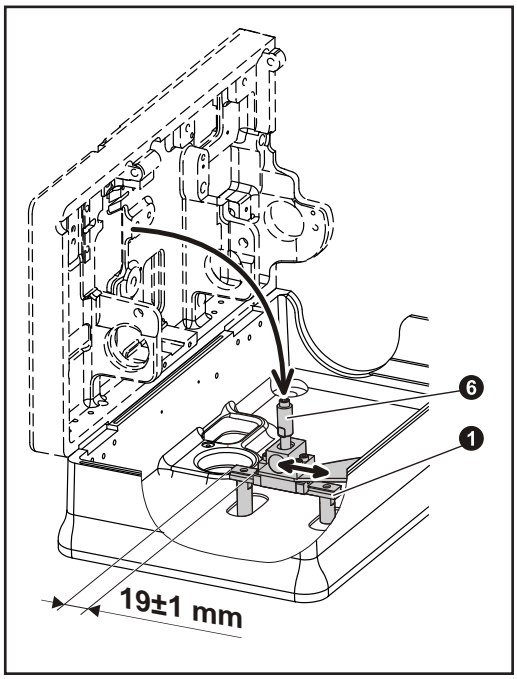
2. The indexer clamps are fixed to the holder ❺ 24.4103.0.000 and are secured by the holder ❹ 24.4018.1.000.

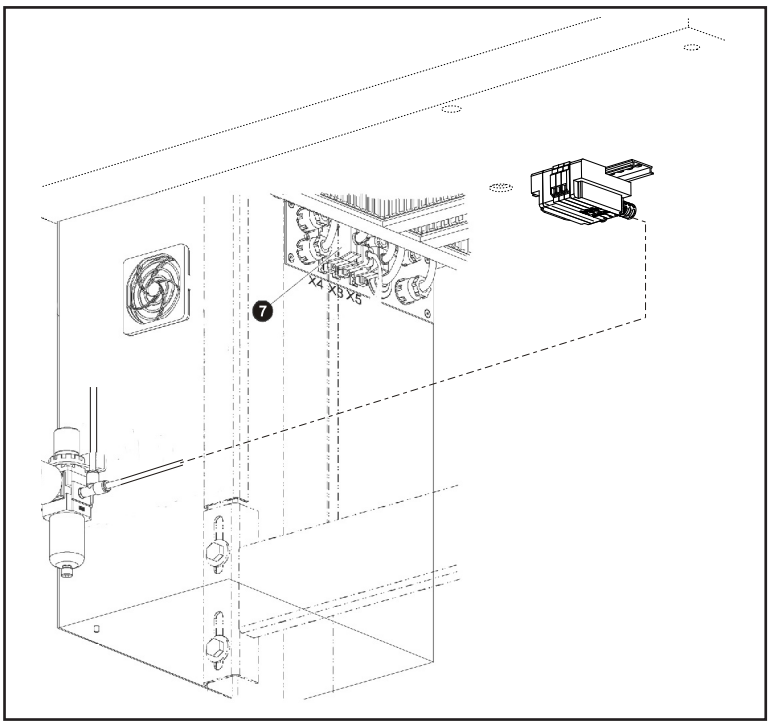
3. The indexer is connected to the mechanism of the sewing cam by a pin ❻.

4. For easy tilting of the head into the basic position, the distance between the base and the rail should be 19 +/- 1 mm.

5. The connection of electric signal for the indexer electro-magnetic vents (10, 11, 12) is provided by a connecting cable ❼ X4 06.2400.0.904, that is connected to the back side of the rack.





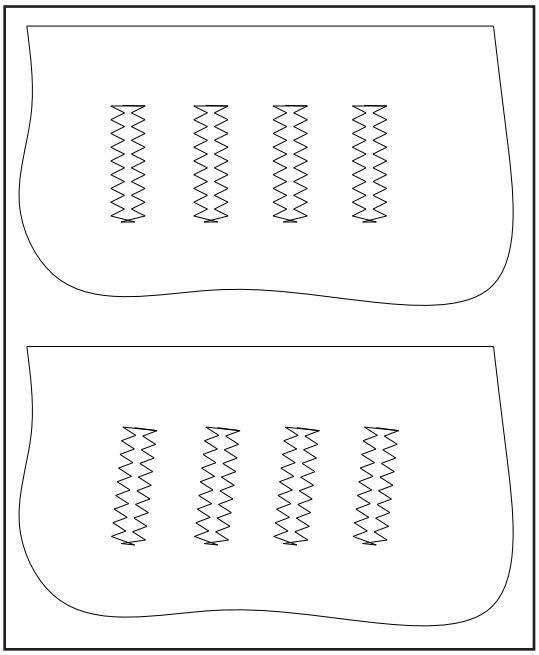


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F - INDEXER - ANGLE 20°

3. INDEXER FUNCTIONS

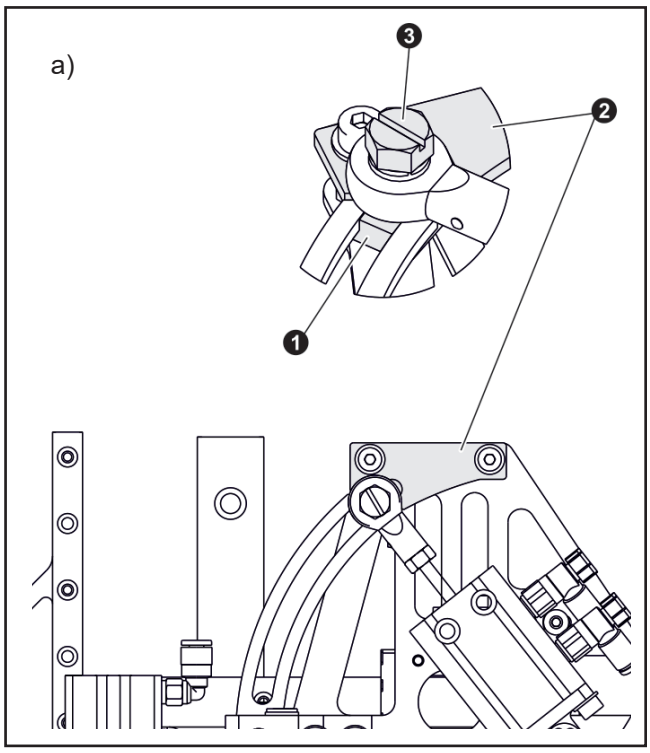
The indexer enables sewing of holes both with cross move of the clamping feet and angle move.

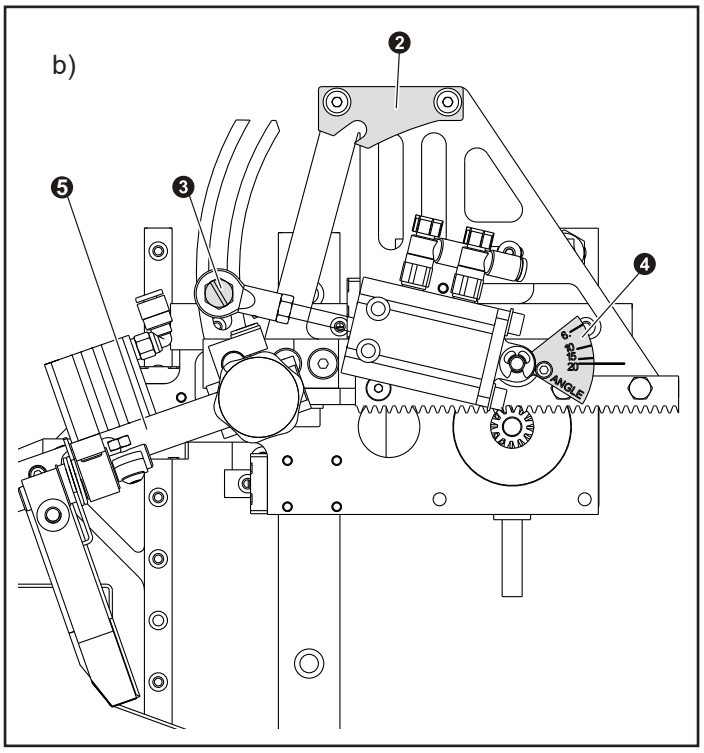


a) Sewing with move straight is ensured by the sliding nut ❶ that clicks into the slot of the locking clamp ❷.

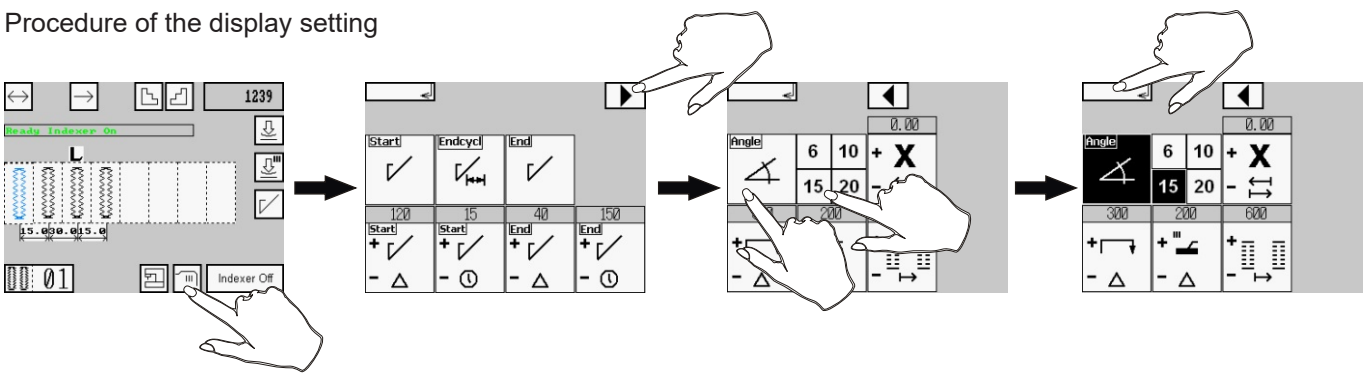
b) When sewing with angle turning, loosen the screw ❸ and move the nut ❶ to the left. Set the requested angle, using the ruler ❹. The clamping feet are then released ❺. Maximum turning to the side is 20°. The parameter “Angle” in the “Indexer” menu must be activated. Set the required angle on the display using the angle value shown on the ruler ❹ .
Possibilities: 6°, 10°, 15° and 20°. If the required angle value is outside the range of these parameters, use the closest value given:

Example:
The angle set on the ruler is 13°. The given settings on the display are 10° or 15°. Thus the closer value is 15° and this is the value that you set on the display.

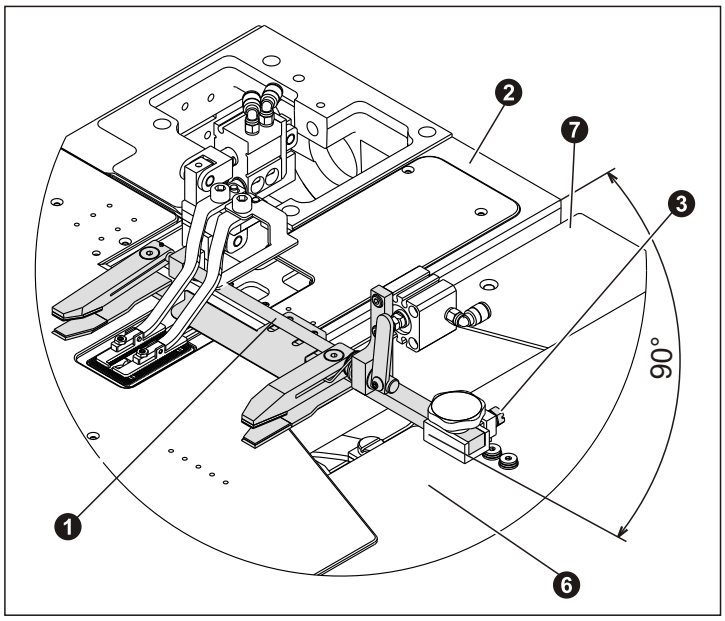




Procedure of the display setting



4. ADJUSTMENT OF THE CLAMPING FEET SHOULDER SIDE MOVE

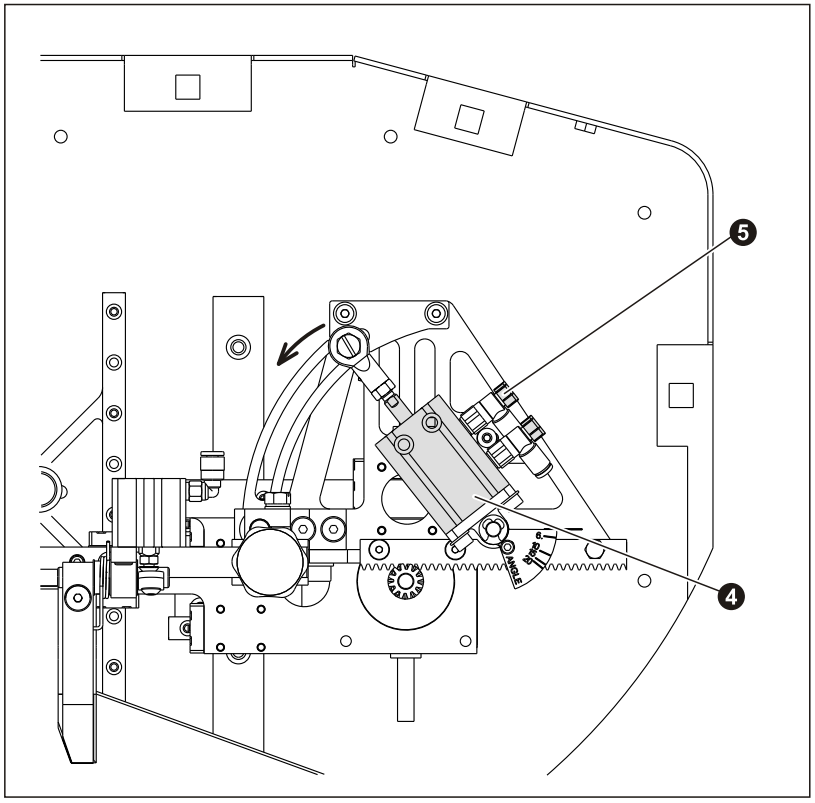


a) Setting of the basic position
Do the setting while the air supply is disconnected and the clamping feet are in a position for cross move of the material – see section F3, point a.

Check if the shoulder ❶ of the clamping feet is in a 90° position to the casting of the base plate ❷. If this is not the case, then loosen screw ❸ and turn the shoulder ❶ of the clamping feet into the required position. Tighten the screw ❸.

b) Adjustment of fluent move of the clamping feet
Rebuild the indexer for sewing with angle move of the material – see section F3, point b. Keep removed the cover sheet ❻ and the top cover ❼ of the indexer.
Connect the air supply and switch the machine on by turning the switch into the position **I** on the box.
Activate the indexer switch on the display of the main screen into the position Indexer On.

Check the fluency of the indexer clamps turning by pressing the buttons ← →.
The clamp turning is controlled by a pneumatic cylinder ❹. To maintain correct function of the clamps turning, it is important to regulate the air flow that comes into the valve. If the air flow is too big, the movements of the clamp fixing mechanism are torn (fitful).



To achieve a reduction of the impacts in the cylinder, proceed as follows:

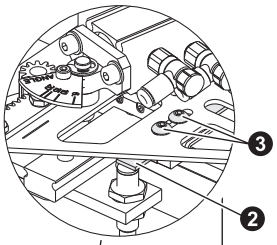
- Slide the adjustment screw ❺ of the flow-control vent.
- turn it clockwise as needed - the speed of the cylinder rod slows down – a smoother motion is reached.
- Check the fluency of the clamping feet turning by pressing buttons ← →.

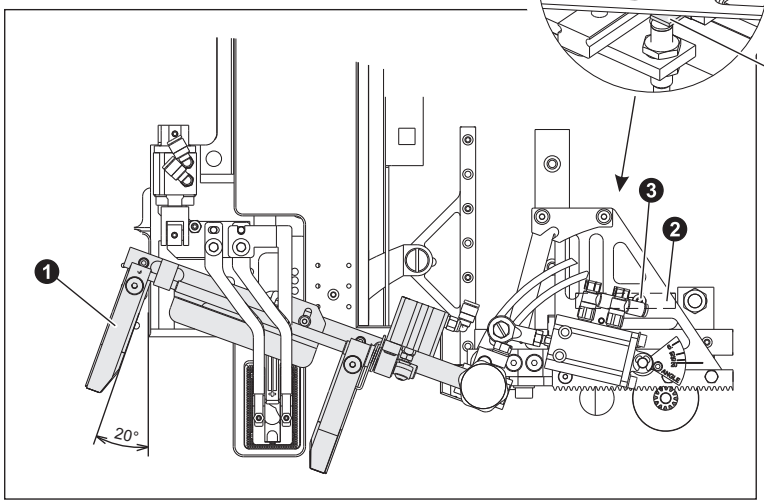
To reach an optimal function, repeat the procedure several times, and then cover up the indexer.

F - INDEXER - ANGLE 20°

5. ADJUSTMENT OF THE MOVE OF THE CLAMPING FEET SHOULDER

The clamping feet of the indexer must be shifted into the position for angle move of the material. The angle must be 20°. If this is not the situation, take off the cover and disconnect the air supply. Press the “Emergency Stop” button. Activate the indexer for 20°angle.





Proceed as follows:

Display

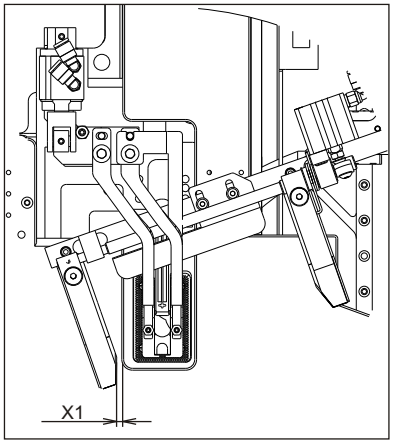
a) Main screen → press 

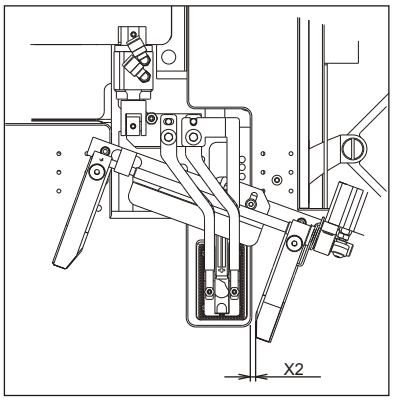
b) Next screen → press 

c) Next screen → press  then



The correction of the home position of the indexer clamps has to be set to “0” value.



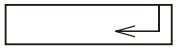


Display

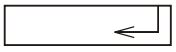
a) Main screen → press 

b) Next screen → press 

c) Next screen → press  → Enter password: 5632 → ENT →  → set 0.

→  Return to the main screen.

Set the shoulder ❶ of the clamping feet to 20° angle – see section F3, point b.

Connect the air supply and release the “Emergency Stop” button, press  on the display. The machine is thus set into the basic position.

Press buttons  and check the distance X1, X2. Shall apply X1 = X2. If this is not the case, change the position of the shutter ❷. Loosen screws ❸ and move shutter ❷ as needed.

$X_1 > X_2$  → direction of shutter move

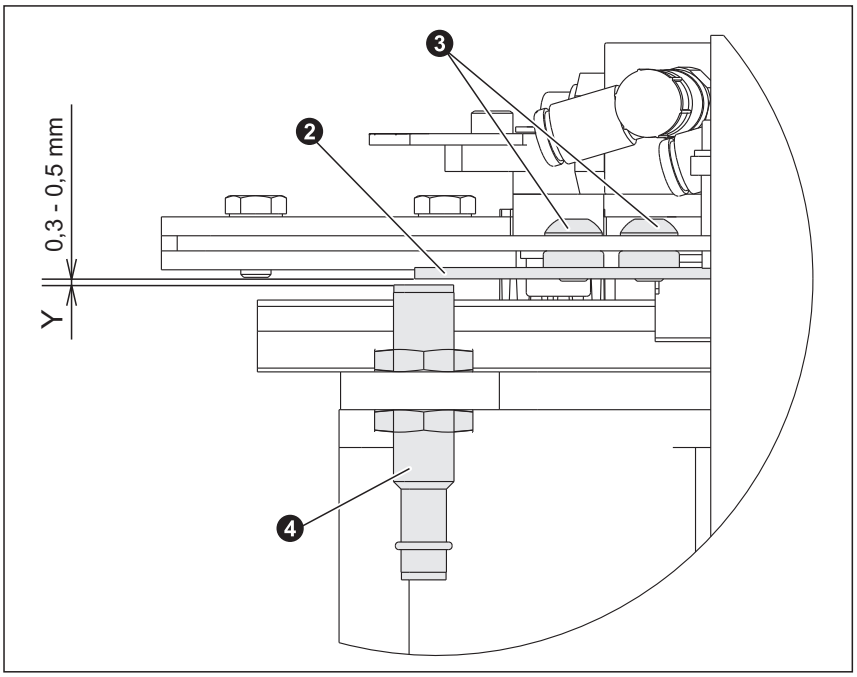
$X_1 < X_2$  ← direction of shutter move

F - INDEXER - ANGLE 20°

Tighten screws ❸.

Press the button Indexer Off and Indexer On. on the display of the main screen. Thus the indexer is set into the basic position. Check the distance X1, X2 by pressing buttons ← → If needed, repeat the whole procedure several times.

Pay attention to the correct height setting of the Y sensor ❹. Set the gap Y using the gauge Y = 0.3 mm.



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F - INDEXER - ANGLE 20°

6. SETTING OF THE INDEXER CLAMPING FEET DOWN FORCE

1. First put the material under the left fixing clamp.
2. Press the clamps button  on the display. Pull the fixed material and find out if the material is well-held.
3. Do the same with the right fixing clamp.
4. If you find out that the down pressure is not the same for both clamps, proceed as follows:

Left fixing clamp holds the material more than the right one

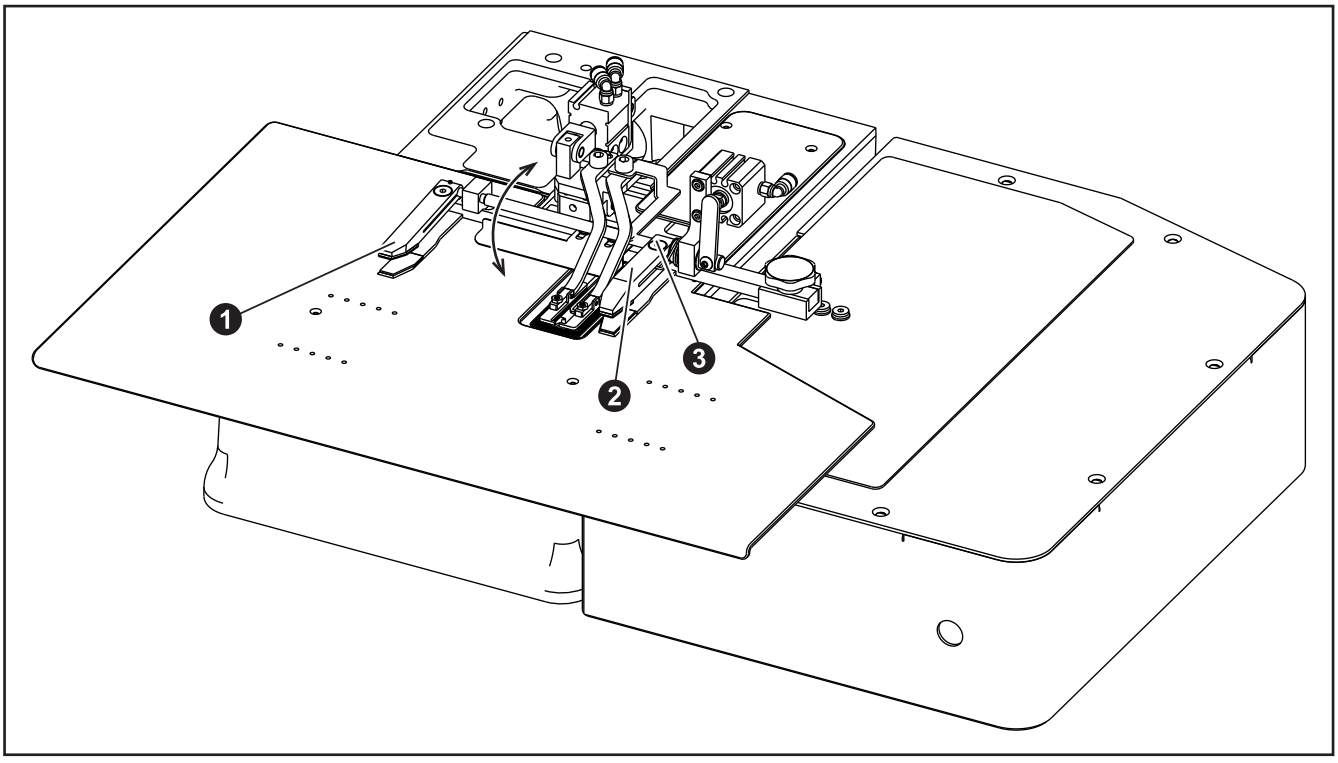
a) Manually press the left fixing clamp ❶ as far as the clamping mat.
b) By loosening the screw ❸ on the right fixing clamp bring the right fixing clamp ❷ to the fixing mat.
c) Tighten the screw ❸ and manually release the left fixing clamp ❶.

Left fixing clamp holds the material less than the right one

a) Manually press the left fixing clamp as far as the clamping pad.
b) By loosening the screw on the right fixing clamp turning away the right fixing clamp from the fixing pad.
c) Tighten the screw and manually release the left fixing clamp

Check the correct adjustment as shown in paragraphs 1 – 4.

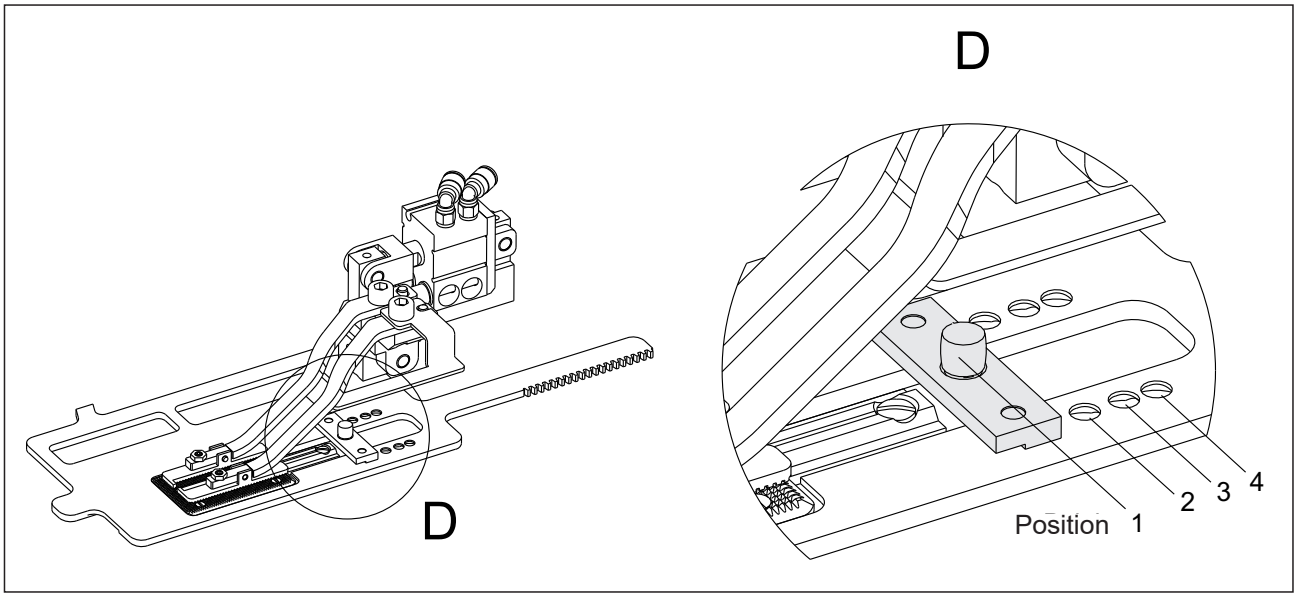
NOTE: As the fixing cylinder is closer to the right fixing clamp, it is necessary to set the down pressure on the left fixing clamp with a preload.



F - INDEXER - ANGLE 20°

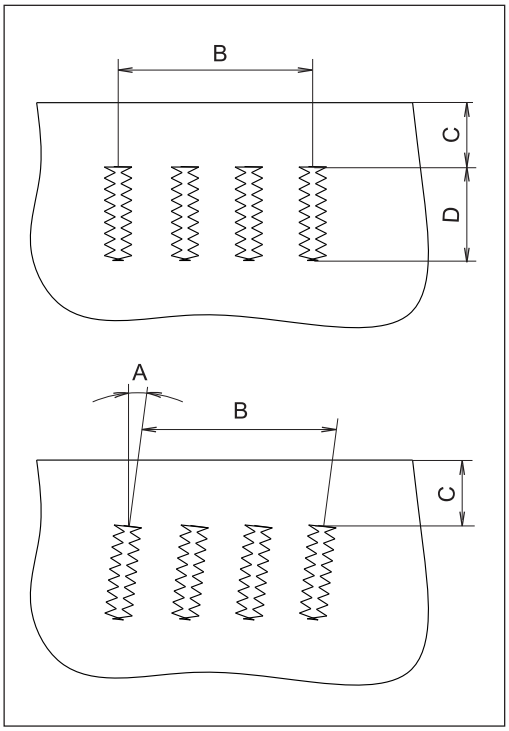
7. SETTING THE DISTANCE BETWEEN THE HOLE AND THE EDGE OF THE MATERIAL

This machine allows for mechanical adjustment of the indexer clamps - this is the distance between the decorative hole and the edge of material.
This distance is mainly limited by the angle of the indexer clamping feet turning.
There are 4 basic positions. The machine in the basic version is in position 1.



The chart shows a distance from the edge of the hole in dependence on the clamp turning angle.
The given values are relevant to 20 mm buttonholes.

Position	Indexer Angle (A)	Max. Lenght (B)	Lenght (C)	Max. Lenght of Buttonhole (D)
1	0°	73 mm	48 mm	23 mm
	6°	65 mm	48 mm	
	10°	63 mm	48 mm	
	15°	54 mm	48 mm	
	20°	51 mm	48 mm	
2	0°	73 mm	59 mm	25 mm
	6°	65 mm	59 mm	
	10°	63 mm	59 mm	
3	0°	73 mm	65 mm	25 mm
	6°	65 mm	65 mm	
4	0°	73 mm	70 mm	25 mm



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F - INDEXER - ANGLE 20°

8. CHANGE OF THE POSITION OF INDEXER CLAMPS

Turning element ❶ of the indexer clamps is positioned on the mechanism ❷ of the clamping feet of the sewing head. To change its position it is necessary to demount the clamps.
Press the button “Emergency Stop” and disconnect the air supply.
Loosen the screw ❸ and take off the indexer fixing ❹ clamps.
Loosen screws ❺ and take out the stainless steel cover plate ❻ of the sewing head.

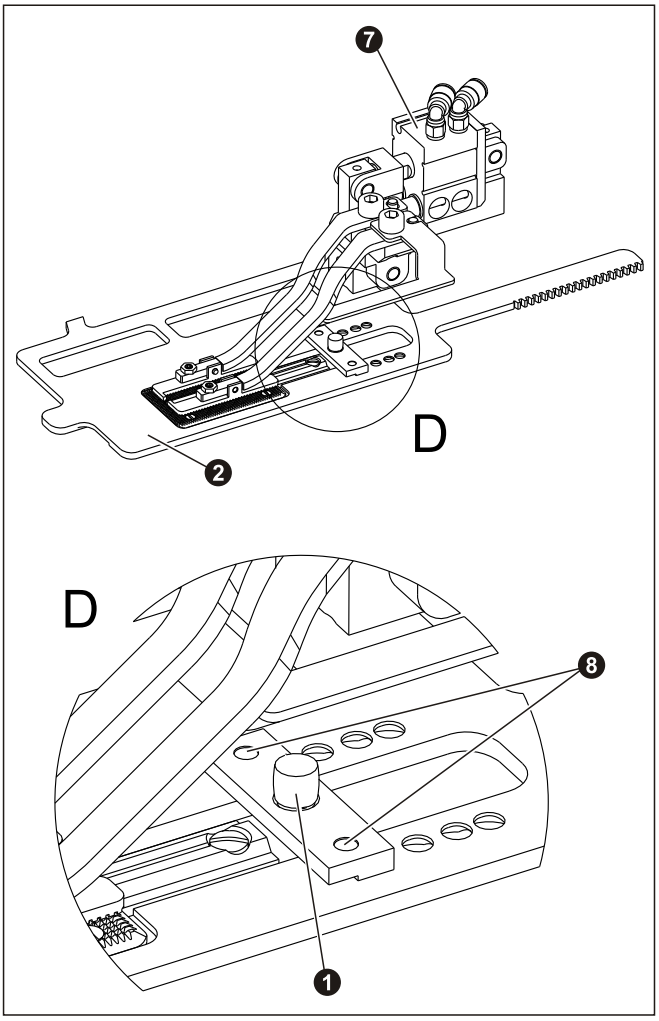
Take out the mechanism ❷ of the clamping feet of the sewing head. Disconnect the lines to the cylinder ❼. Loosen screws ❽ and turn the turning element ❶ into the required position. Secure its position by screws ❽.

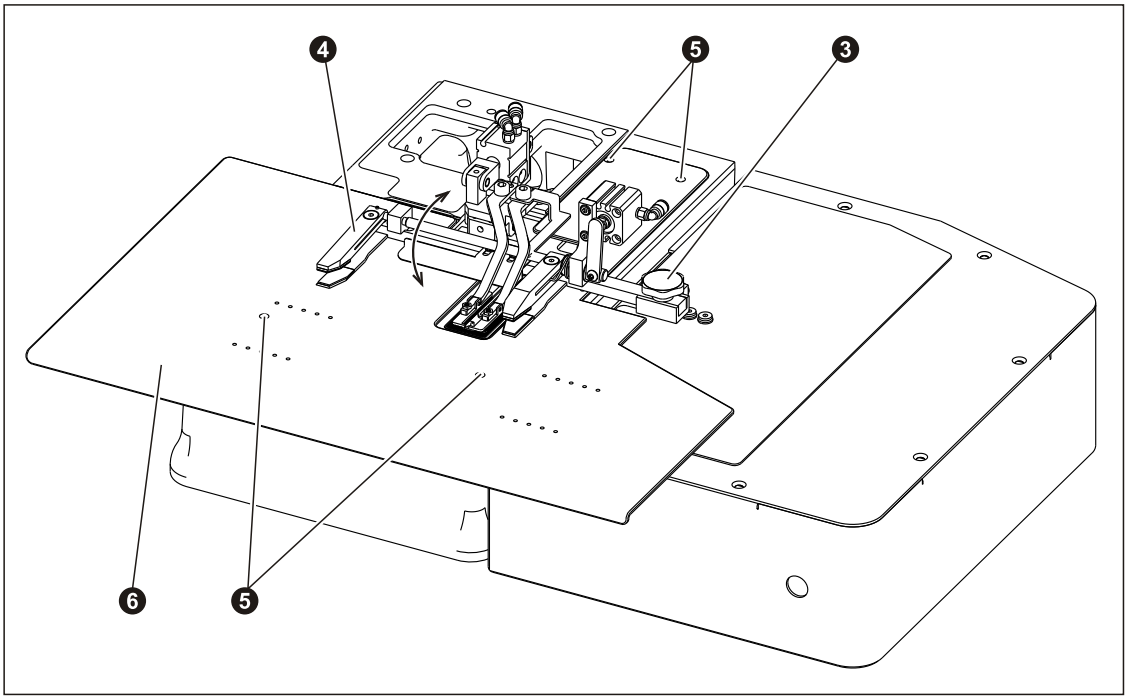
Connect the air supply lines into the cylinder ❼ and put the mechanism ❷ of the clamping feet back to the sewing head.

Return the stainless steel cover ❻ and secure it by screws ❺.

Mount the indexer clamping feet ❹ and secure them by the screw ❸.

Connect the air supply and release the button “Emergency Stop”. Press the button Indexer Off and Indexer On on the main screen and then the machine is set up for its use.





NOTE:
For position 3, 4 it is possible to use prolonged clamping feet that provides better material fixing:
Clamping Mat Left 24.4006.1.000, Clamping Mat Right 24.4007.1.000, Clamp Foot Left 24.4015.1.000.

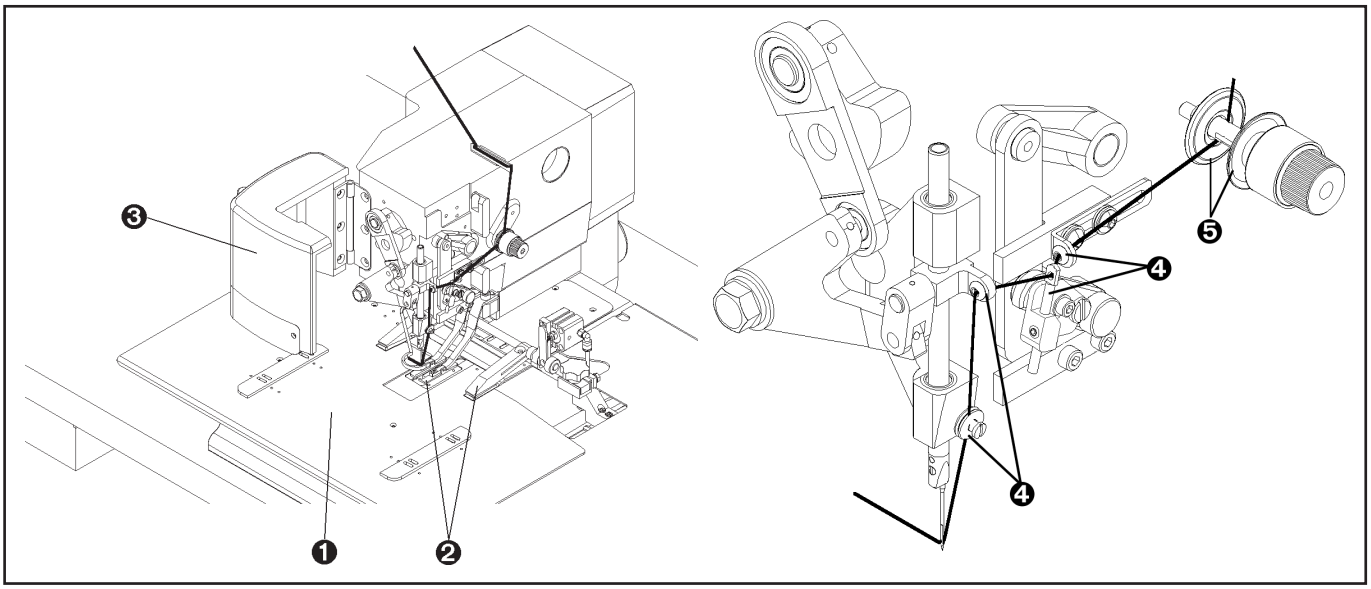
G - MACHINE MAINTENANCE

Warning:
- Check for damage to electrical cables
- Check safety covers for damage and replace if needed immediately
- Keep your hands out of the sewing area
- Do not modify the machine in any way, which could eliminate safety parts
- Do not attach external lights or other devices to the machine´s electrical system

Caution:
- Do not neglect periodic maintenance.
- If you have fault in electrical power supply, switch off the operating switch (circuit breaker).
- Do not damage, correct and remove safety labels.
- Do not work with the machine when you are under the influence of the drugs or alcohol.
- User has to ensure the lighting of the working area minimal 750 Luxes.

1. MACHINE CLEANING AND MAINTENANCE

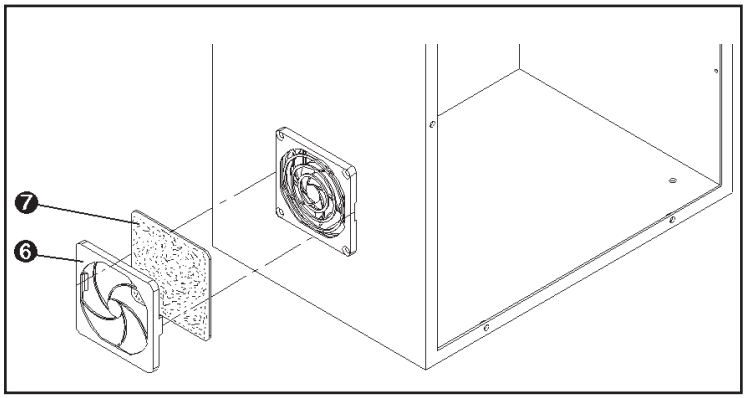
1. Switch the power off and disconnect airsupply.
2. For cleaning and oiling, remove the cover ❶ and take out the clamp feet mechainsm ❷. Clean the clamping area from the fabric and thread lints.
3. Open the needle bar cover ❸ and clean the thread lints from the guides ❹ and thread tension ❺.
4. Clean the thread lints and fabric from the sewing area - throat plate, loopers.
5. Lubricate the machine according to the section G 4.



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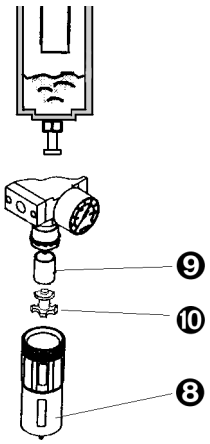
G - MACHINE MAINTENANCE

6. Remove the filter cover ❻ with cleaning pad ❼. Remove the dust from the cleaning pad or in case of considerable dirt, wash it using a mild detergent.
Perform the same cleaning on the rear fan .



7. The filter and regulator maintenance
Bowl assembly - polycarbonate bowls may be damaged and possibly fail if exposed to synthetic oils, thinner solvents, trichlorethylene, kerosene and other aromatic hydrocarbons. Clean only with a neutral detergent.
Auto drain - Drain line length should be shorter than 5 m. Be sure not to have any upward turns in the drain line which would prevent drainage.

If the unit has no function it is necessary to:
a) check if the supplied pressure is higher than the set pressure of the regulator
b) check if the valve assembly is clean
c) check the membrane or spring because of damage
d) check if the air flow direction is correct



Change of the filter element
Conditions
- low flow rate
- high pressure drop
- when the pressure drops to 0.7 bar
- filter element change after one year (in case it has not been changed)

a) unscrew the polycarbonate bowl ❽
b) take the filter element out ❾ with baffle ❿
c) change old filter element with new one
d) fit the baffle ❿ into new filter element ❾ and place them both back
e) place the polycarbonate bowl back

8. Check the mechanisms especially in the sewing area by sight.

9. When the maintenance and checking are finished, insert the clamp feet mechanism to the machine.

2. PERIODIC MAINTENANCE

once a day (8 hours of operation)
- cleaning of the sewing mechanism area and inner frame of the
- machine
- lubrication of mechanisms - see section G4.

once a week (40 hours of operation)
- visual check - external and internal mechanisms
- fill oil into reservoir with oil level indicator, or sooner if required

once a month (160 hours of operation) - check of the clearance in sewing mechanism drive
- check of the screw connections tightening (obtain values below)
- check of condensate in regulator
- check of dirty of cleaning pads in control box

Recommended values for screws tightening (Nm):

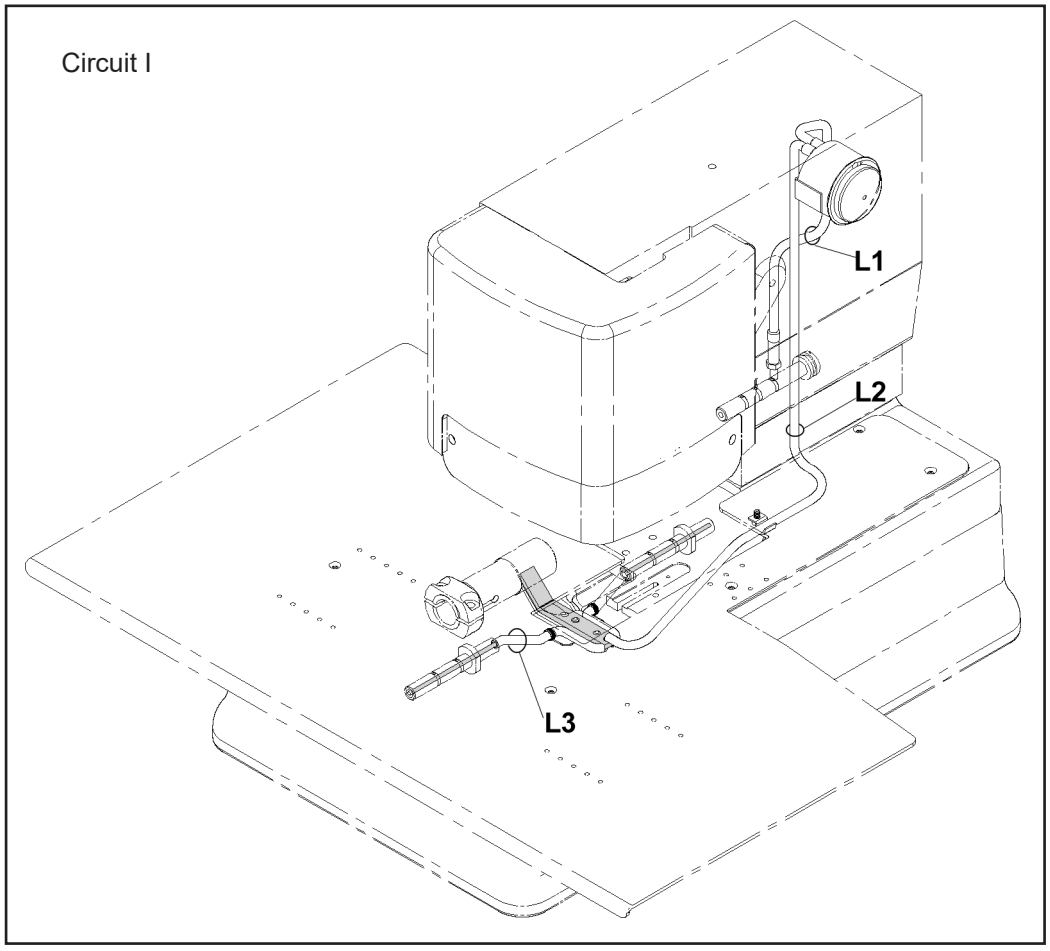
			
M3	0,5	0,6	0,8
M4	1,2	1,5	2,0
M5	2,5	3,0	4,0
M6	4,0	5,0	7,0
M8		8,0	16,0
M10		10,0	30,0

G - MACHINE MAINTENANCE

3. LUBRICATION DIAGRAM

The machine is mostly equiped with needle and ball bearings, which in combination with single lubrication circuit decrease the requirements for maintenance.

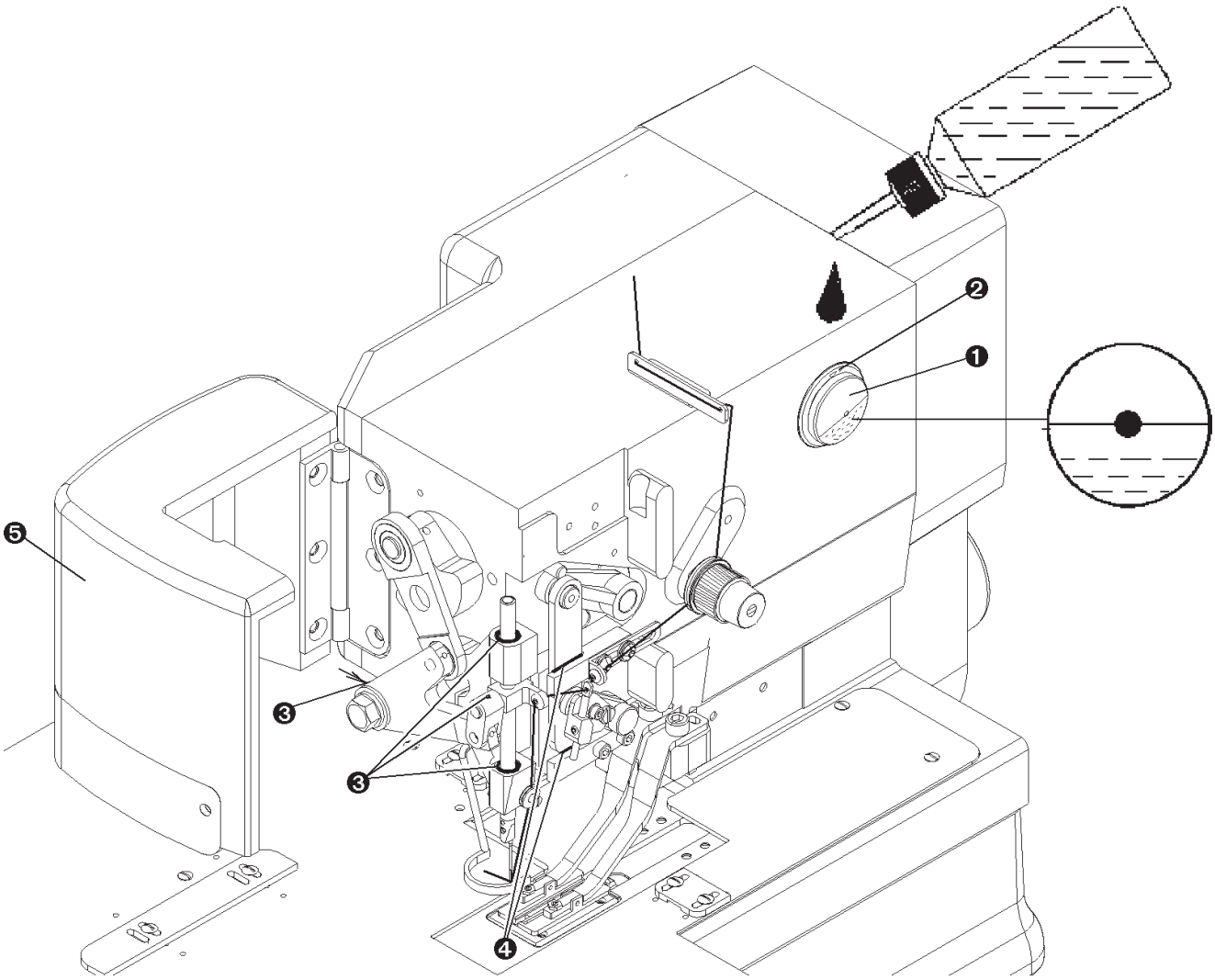
Circuit I - with the oil supply in oil indicator for lubrication of the bite, feeding and looper levers and worm gears. In case of replacement of any part of distribution, it is possible to order the tube kits and wicks. To connect the tubes - see picture.



G - MACHINE MAINTENANCE

4. MACHINE LUBRICATION

1. It is necessary to lubricate the places shown below before the machine is switched on for the first time or after a long idle period. Use oil ESSO TERESSO 32 or similar quality.
2. The amount of oil in the reservoir ❶ is indicated by the red mark. Too much oil may cause its overflowing from the base area.
3. The reservoir is fitted through the hole ❷ in front of the gage.
4. The points for lubrication of the needle bar mechanism ❸ and draw-off mechanism ❹ are shown in the illustration below (after opening the needle bar cover ❺). Lubricate the main cam worm gear through the hole ❻. Lubricate all of these points every 8 hours.



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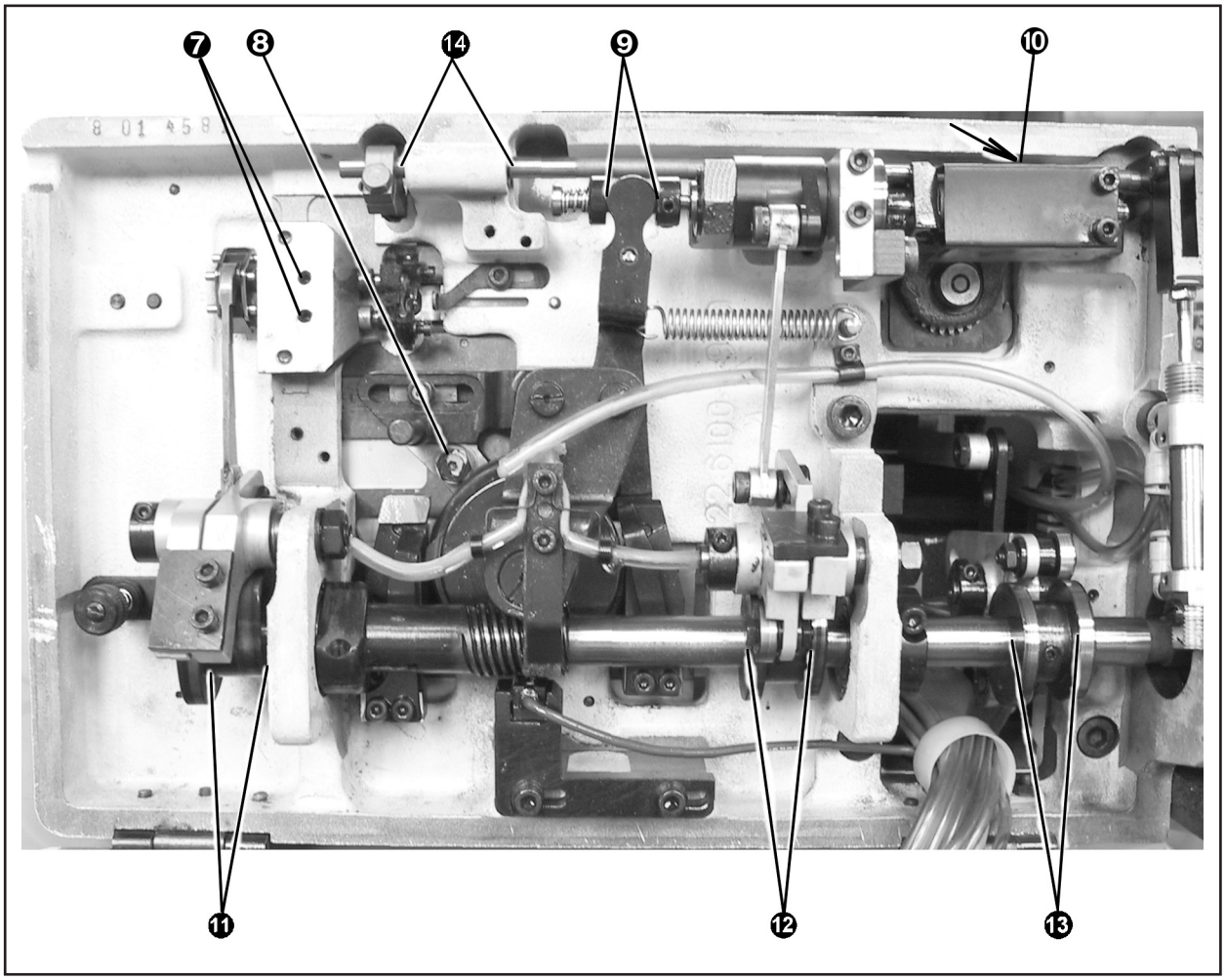
G - MACHINE MAINTENANCE

5. Tilt the machine head on the rest pin and lubricate the places shown in the picture.

❼ looper shafts
❽ roller
❾ shifter
❿ bevel gears
⓫ looper cam surfaces
⓬ feed cam surfaces
⓭ bite cam surfaces
⓮ trimmer shaft

Tilt the sewing head back into the sewing position.

6. After lubrication it is important to sew minimum 10 buttonholes on scrap fabric to dispel any excess oil. Wipe all visible excess oil from the mechanism in the work area.



G - MACHINE MAINTENANCE

5. MACHINE DISPOSAL

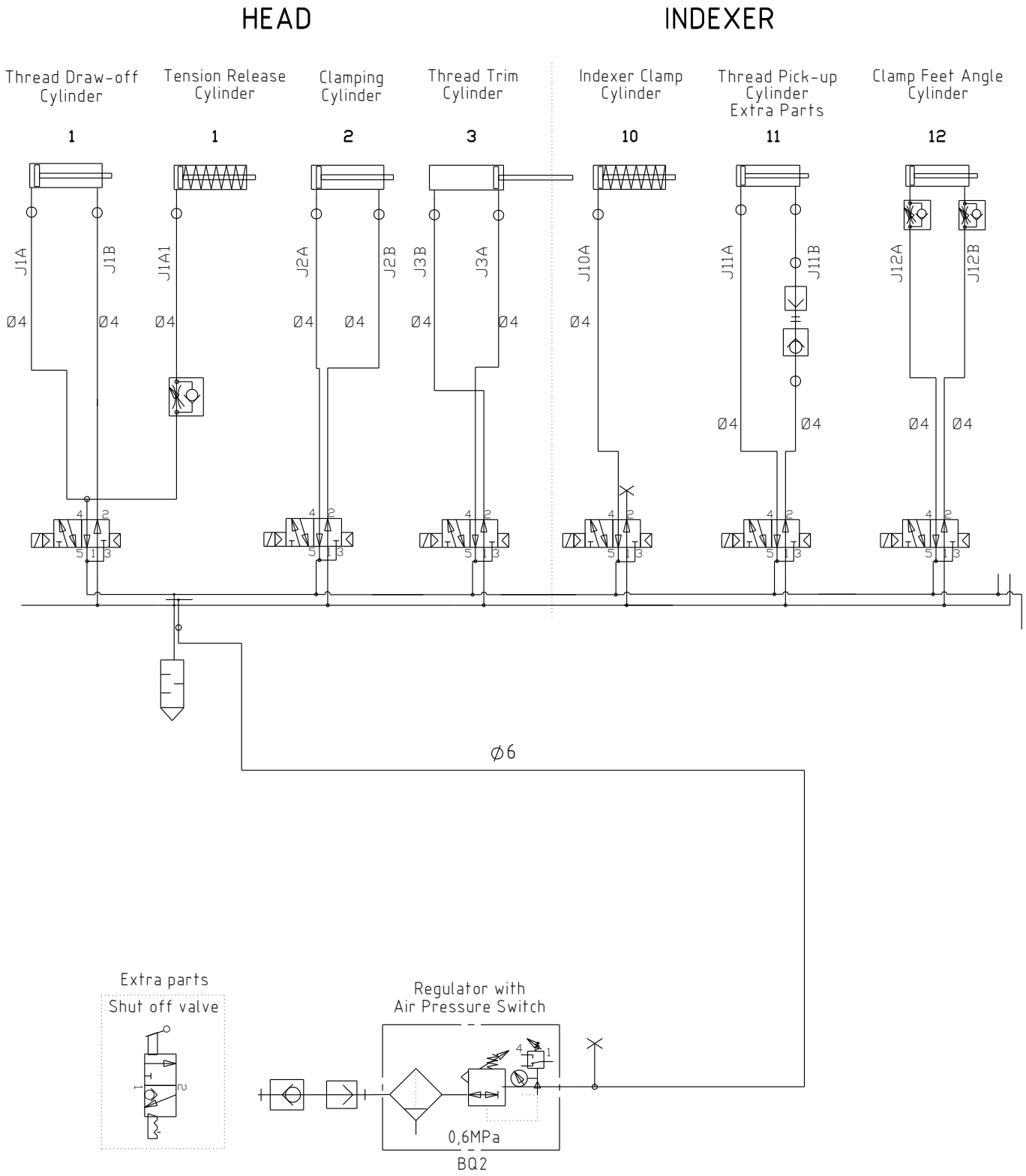
1. To ensure machine ecological disposal, it is necessary to remove nonmetallic parts from the machine. To take these parts out, it is necessary to perform the partial dismantling of the machine, remove covers, dismantle the machine arm and remove the frame.
2. Aluminium and diralumin parts must be treated separately, also nonferrous metal parts and plastic parts.
3. Parts mentioned in point 2 can be found in the spare parts manual with these marks:

- ● aluminium parts
- ●● non-ferrous metal parts
- ●●● plastic and non-metalic parts

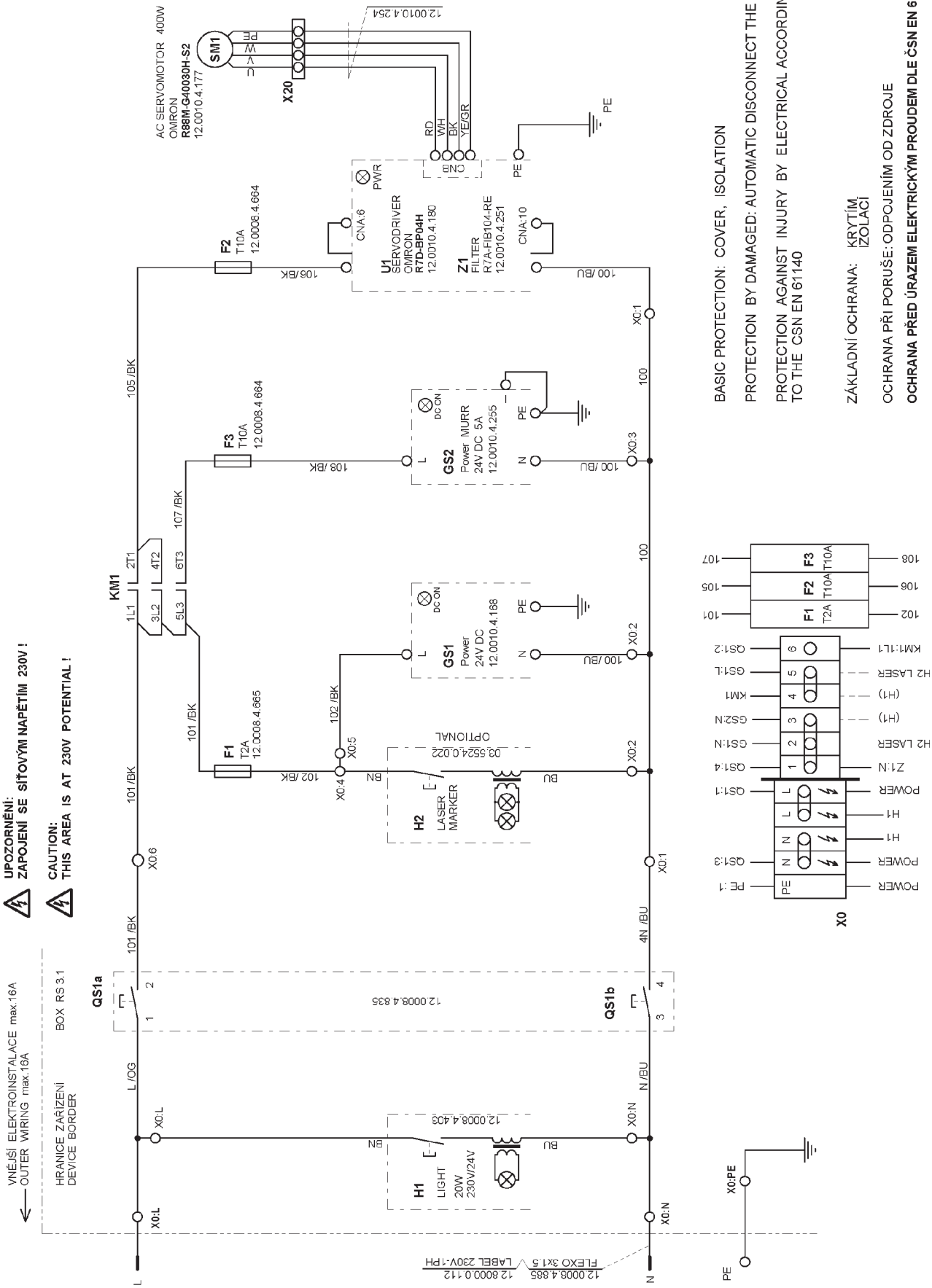
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H - PNEUMATIC DIAGRAM

S-4000 ISBH+I SM

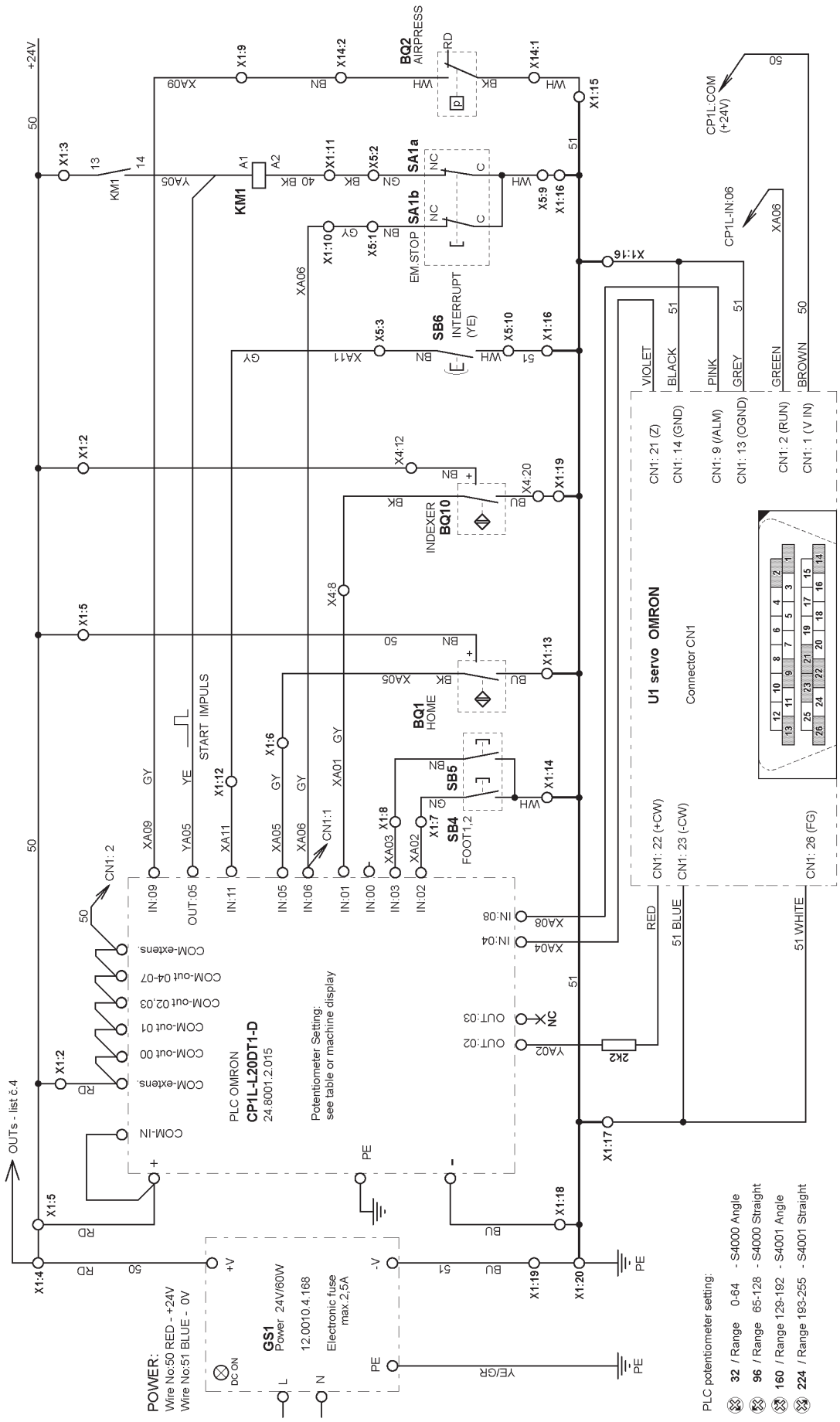


I - ELECTRICAL DIAGRAM

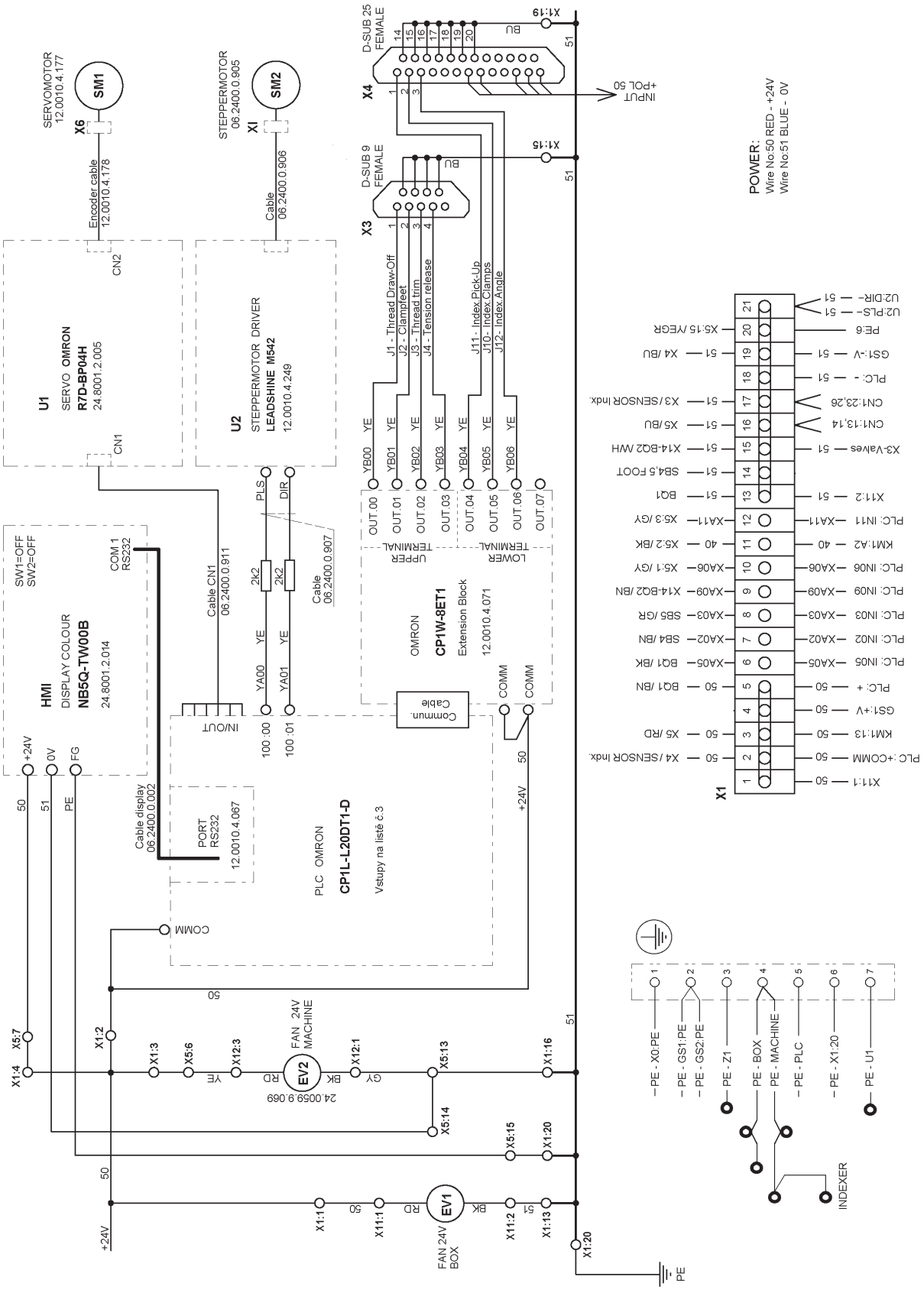


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I - ELECTRICAL DIAGRAM

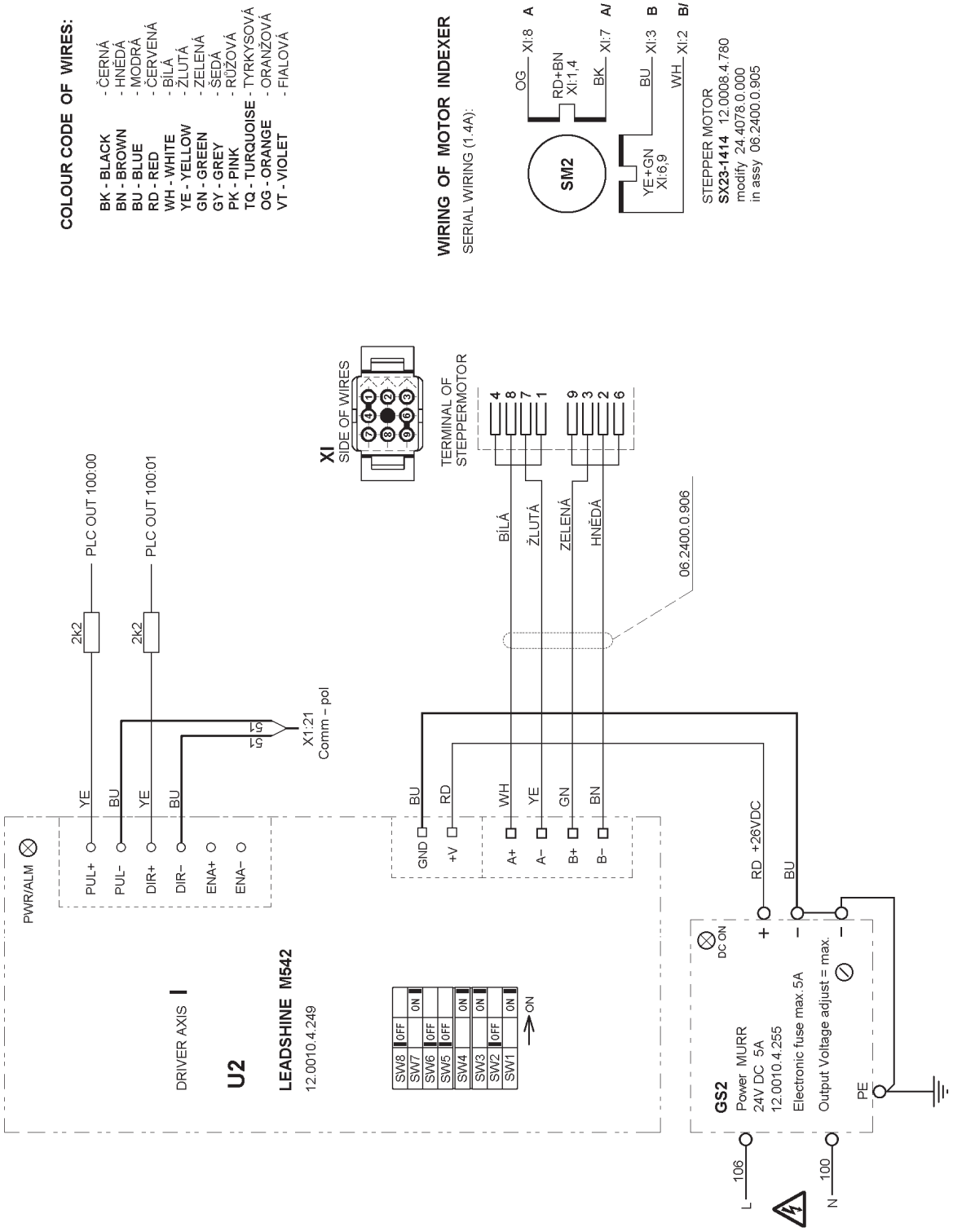


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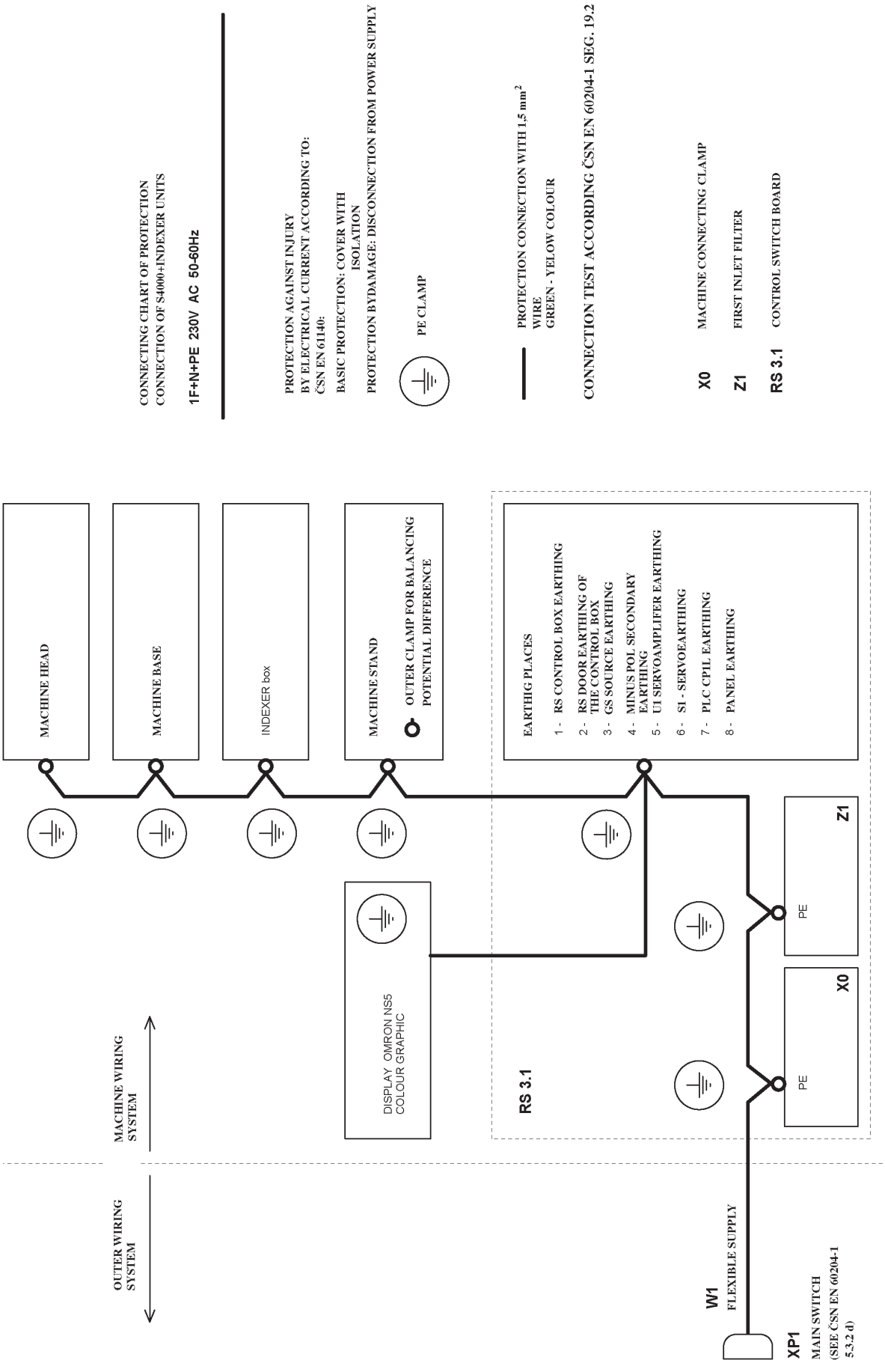


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TROUBLESHOOTING

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TROUBLESHOOTING

1. MECHANICAL FAULTS

FAULT	POSSIBLE CAUSE	PROBABLE SOLUTION
Thread breakage	Needle, looper, throat plate damaged	Change damaged parts
	Incorrect needle and sewing mechanism adjustment	Check the adjustment of the mechanisms
	Thread tension is too tight	Adjust correct tension
	Incorrect threading	See section C3 for checking.
	Thread guides polished incorrectly	Polish
	Poor thread quality	Replace thread
	Thread is too heavy for selected needle and throat plate	Use recommended thread sizes - see section A4
Machine fails to sew	Needle, looper, throat plate damaged	Change damaged parts
	Incorrectly adjusted needle bar height	See section E4 for checking
	Incorrectly adjusted clearance between needle and throat plate	See section E5 for checking
	Incorrect loopers timing	See section E12 for checking
Machine sews in one spot	Incorrectly adjusted front stop	Adjust the stop - see section E11
Stitch skip at the beginning of sewing	Needle, looper, throat plate damaged	Change damaged parts
	Needle thread end is too short	See section E13, point 2
	Incorrectly adjusted needle bar height	See section E4
	Incorrectly adjusted clearance between needle and throat plate	See section E5
	Incorrect loopers timing	See section E12
	Incorrectly adjusted clamp feet pressure	See section E 16
Stitch skip during sewing	Needle, looper, throat plate damaged	Change damaged parts
	Incorrectly adjusted needle bar height	See section E4
	Incorrectly adjusted clearance between needle and throat plate	See section E5
	Incorrect loopers timing	See section E12
	Incorrect thread tension adjustment	Adjust the tension correctly see section E14
	Incorrect threading	See section C3
	Thread loops are too small	See section E13 point 3
	Incorrectly adjusted clamp feet pressure	See section E16 point 3
	The clamp feet are adjusted too far from the sewing	See section E16 point 2

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TROUBLESHOOTING

FAULT	POSSIBLE CAUSE	PROBABLE SOLUTION
Thread not trimmed at the end of the cycle	Trimming knife damaged	Replace knife
	Wrong adjustment of pulling hook	See section E 15 (2)
	Throttle valve regulating tension disc is too loose.	See section E14 point (3)
	Incorrect loopers timing	See section E12
	Incorrect setting of trimming delay	Change Trim delay parameter D4 (F2)
	Trimming length incorrectly set	Change Trim time parameter D4 (F2)
Sewing motor turns, machine does not sew	Belt broken or loose	See section E18 for changing
Machine sews continually, does not stop	Stopping sensor adjusted incorrectly	See section E17 for correct position adjustment
Zero pressure on regulator	Shut off valve closed	Open shut off valve
Low air pressure	Filter element dirty	Change the filter element
	Air fitting or tubing obstruction	Check supply lines

2. INDEXER FAULTS

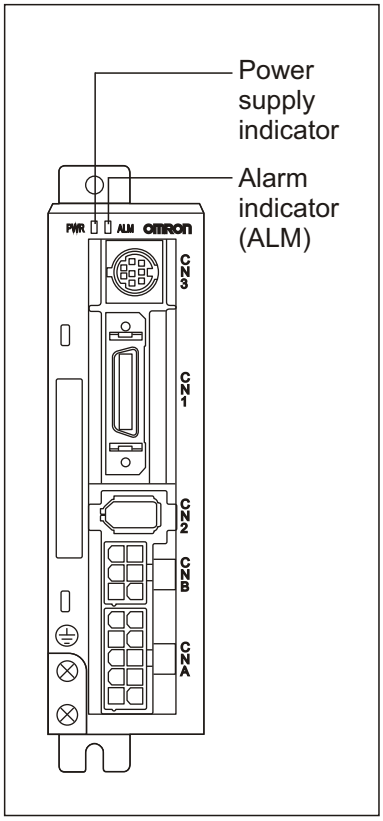
FAULT	POSSIBLE CAUSE	PROBABLE SOLUTION
Thread pick up does not catch the thread (breaks needle)	Thread puller position adjusted incorrectly	See section F7 for adjustment
	Thread Pick-up delay set incorrectly	Change Thread Pick-up delay parameter in indexer menu
	Incorrect setting of Thread Pick-up timing	Change Thread Pick-up time parameter in indexer menu
	Thread Pick-up parameter is not activated	Activate the Thread Pick up parameter in indexer menu
	Valve 11 does not switch on	Check or replace
Sewn buttnoholes vary in spacing	One of the pneumatic valves 13 — 18 does not switch on	Check or replace the valves
	Loose screw M5 - see Parts - page 3-66, det. 22	See section F5 for adjustment
	Indexer clamp feet do not have the same pressure	See section F6
The machine sews in one spot, no movement of material	Indexer clamp feet are not closed	Valve 10 does not switch on, check or replace
	Low air pressure	Check main supply and manual shut-off valve
	Indexer clamp feet delay incorrectly set	Change Move delay parameter in indexer menu
	Activation of indexer clamp feet timing incorrectly set	Change Clamps delay parameter in indexer menu
Indexer clamps do not swivel	Indexer clamp feet are not adjusted for angle movement	Loosen the screw and move it from the locking lever
	Angle parameter not activated	Activate the Angle parameter in Indexer menu
	Valve 12 does not switch on	Check or replace
	Air comming into the cylinder is too tighten	Loosen the vylve on the swivelling cylinder

3. ERROR MESSAGES OF THE CONTROL PANEL DISPLAY

FAULT	POSSIBLE CAUSE	PROBABLE SOLUTION
Low air pressure	Hand valve of the regulator switched off (if assembled)	Open the hand valve
	The air pressure in the air supply piping below 5 MPa	Increase the air pressure
Emergency stop	Emergency Stop button is switched on	Release the Emergency Stop button
Operation mode	The machine is in the operation mode, motor is disconnected	Press  on the control panel
The distance between buttonholes larger than 63 mm	The maximal length of the indexer clamp feet movement is exceeded	See Service - Section D8 (page 1-24)
VAL > MIN VAL > MAX	Parameter range exceeded	Choose lower or higher value

4. ERROR MESSAGES OF THE SERVO

The following messages can be seen on the servo, which is placed inside the control box. In order to eliminate these messages, switch off the machine for 1 minute. Then switch the machine on again. The error message should not appear on the display. If the message appears - call AMF Reece service.



PWR - Power supply indication:

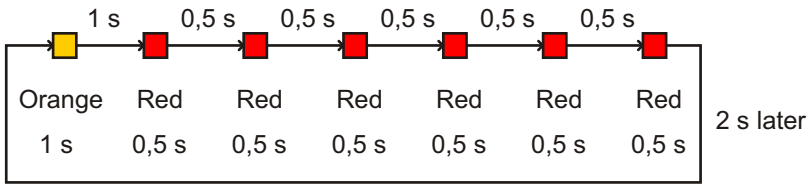
INDICATOR	STATUS
Lit green	Voltage is good
Lit orange - Flashes at a 1 sec. intervals	Varning - i.e.: - Exceeded power - Exceeded feed back - Default of inner fan
Lit red	Alarm - default

ALM - Default indication (Alarm indicator):
in case default appears, the indicator is switched on.

Alarm indicator on the Servo Drive

The alarm LED indicator on the front of the Servo Drive lights up if an error is detected. The indicator shows the alarm code by the number of orange and red flashes.

Example:
When an overload alarm (alarm code 16) has occurred and the Unit has stopped the indicator will flash in orange and 6 times in red.
Orange 10s digit, Red: 1s digit



TROUBLESHOOTING

Alarm code	Error detection function	Detection details and cause of error	Alarm reset possible
11	Power supply undervoltage	The DC voltage of the main circuit fell beloww the specificed value while the RUN Command Input was ON	Yes
12	Overvoltage	The DC voltage of the main circuit is abnormally high	Yes
14	Overcurrent	Overcurrent flowed to the IGBT. Servomotor power line ground fault or short circuit	No
15	Built-in resistor overheat	The resistor in the Servo Drive is abnormally overheating	No
16	Overload	Operation was performed with torque significantly exceeding the rated level for several seconds to several tens of seconds.	Yes
18	Regeneration overload	The regeneration energy exceeded the prosessing capacity of the regeneration resistor.	No
21	Encoder disconnection detected	The encoder wiring is disconnected.	No
23	Encoder data error	Data from the encoder is abnormal.	No
24	Deviation counter overflow	The number of accumulated pulses in the deviation counter exceeded the seting in the Deviation Counter Overflow Level (Pn63)	Yes
26	Overspeed	The servomotor exceeded the maximum number of rotations. If the torque function was used, the Servomotor´s rotation speed exceeded the settings in the Overspeed Detection Level Setting (Pn70 and Pn73)	Yes
27	Electronic gear setting error	The section in Electronic Gear Ratio Numerator 1 (Pn46) or Electronic Gear Ratio Numerator 2 (Pn47) is appropriate.	Yes
29	Deviation counter overflow	The number of accumulated pulses for the deviation counter exceeded 134,217,728.	Yes
34	Overrun limit error	The servomotor exceeded the allowable operating range set in the Overrun Limit Setting (Pn26).	Yes
36	Parameter error	Data in the parameter saving area was corrupted when data was read from the FEPROM at power ON.	No
37	Parameter corruption	The checksum didn´t match when data was read from the FEPROM at power ON.	No
38	Drive prohibit input error	The forward drive prohibit and reverse drive prohibit inputs are both turned OFF.	Yes
48	Encoder phase Z error	A phase-Z pulse was not detected regularly	No
49	Encoder CS signal error	A logic error of the CS signal was detected	No
95	Encoder CS signal error	The combination of the Servomotor and Servo Drive is not appropriate. The encoder was not connected when the power supply was turned ON.	No
96	LSI setting error	Excessive noise caused the LSI setting not to be completed properly.	No
Others	Other errors	The servo Drive´s self-diagnosis function detected an error in the Servo Drive.	No

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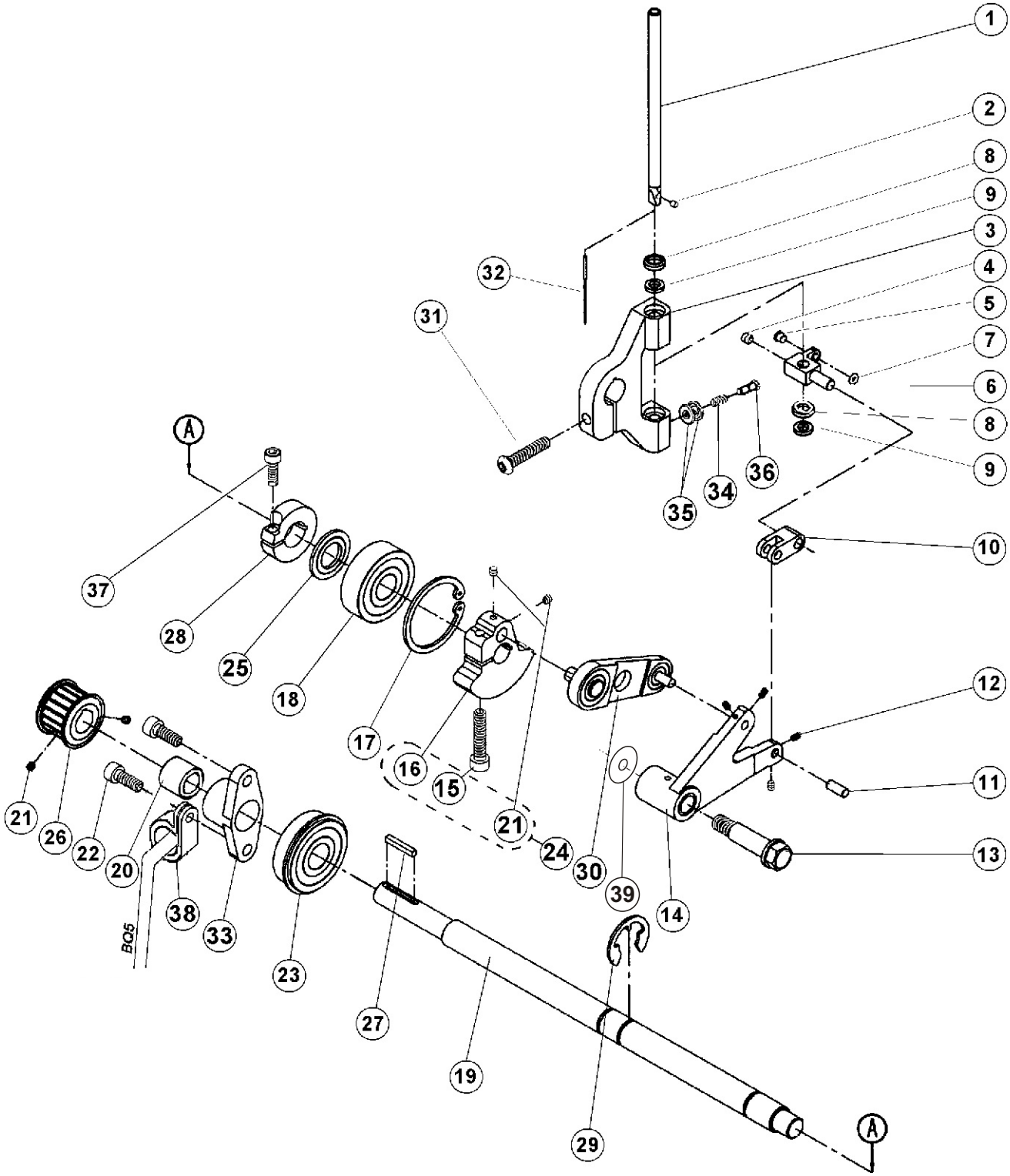
5. ELECTRICAL FAULTS

FAULT	POSSIBLE CAUSE	PROBABLE SOLUTION
When switch  in position I, neither the work light, display or the cooling fan operate	No power supply	Check main power supply or voltage in the socket
	Fuse F1 failure	Replace fuse PN 12.0008.4.665
	Power switch QS1 damaged	Replace the switch 12.0008.4.835
	Power GS1 failure	Replace the power 12.0010.4.168
When switch  in position I, display does not operate	Cable from the display disconnected	Check the display connection
	Display or its control damaged	Replace display PN 24.8001.2.014
When sewing operation started, motor does not operate. Contactor KM1 switched on.	Fuse F2 damaged	Replace fuse 12.0008.4.664
	Contactor KM1 damaged	Replace contactor 12.0008.4.833
	Filter Z1 damaged	Replace filter 12.0010.4.251
	Servodriver U1 error	Call AMF Reece service or replace servodriver U1 24.8001.2.005
	Error in sewing motor circuit	Switch the machine off for 1 minute, or restart it, alternatively call AMF Reece service
When sewing operation started, motor fails to operate. Contactor KM1 switched off.	Make sure the machine is ready for operation	Press key in the display  (see section D1, point 6)
	Contactor KM1 damaged	Replace contactor 12.0008.4.833
	Check the Emergency Stop button	Replace button 12.0010.4.191
	Control unit PLC error	Replace the control unit PLC 24.8001.2.011
The needle does not stop in the upper position	Position of the sensor BQ1 incorrectly adjusted	Adjust according to section E17
	Sensor BQ1 failure	Replace the sensor 06.2400.0.009
	Check the servo amplifier and servo	To set the servo amplifier - call AMF Reece service, alternatively replace motor (page 2-9) and servo amplifier (page 2-9)
When sewing operation started, air valves do no operate. The air pressure correct.	Fork is not fitted properly into connector X3, X4	Check the connector X3, X4 connection
	Block CPAW failure	Replace the block 12.0010.4.071.
Broken drive indexer	Lack of power supply to drive.	Check contactor KM1 switching. Replace contactor 12.0008.4.833
No flash light on GS 2 power supply	Fuse F3 burnt.	Replace fuse 12.0008.4.664.
	Power GS2 failure.	Replace power supply 12.0010.4.255.
	Driver U2 failure.	Replace driver 12.0010.4.249
No flash light on U2 driver	Power GS2 failure.	Replace power 12.0010.4.255
	Driver U2 failure.	Replace driver 12.0010.4.249
When switched on, indexer motor not in its position	Indexer motor SM2 failure.	Replace motor 06.2400.0.905
		Replace driver 12.0010.4.249
Indexer motor rotates and hits a stopper	Indexer sensor BQ10 failure	Check adjustment or replace sensor 12.0010.4.093

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NEEDLE BAR

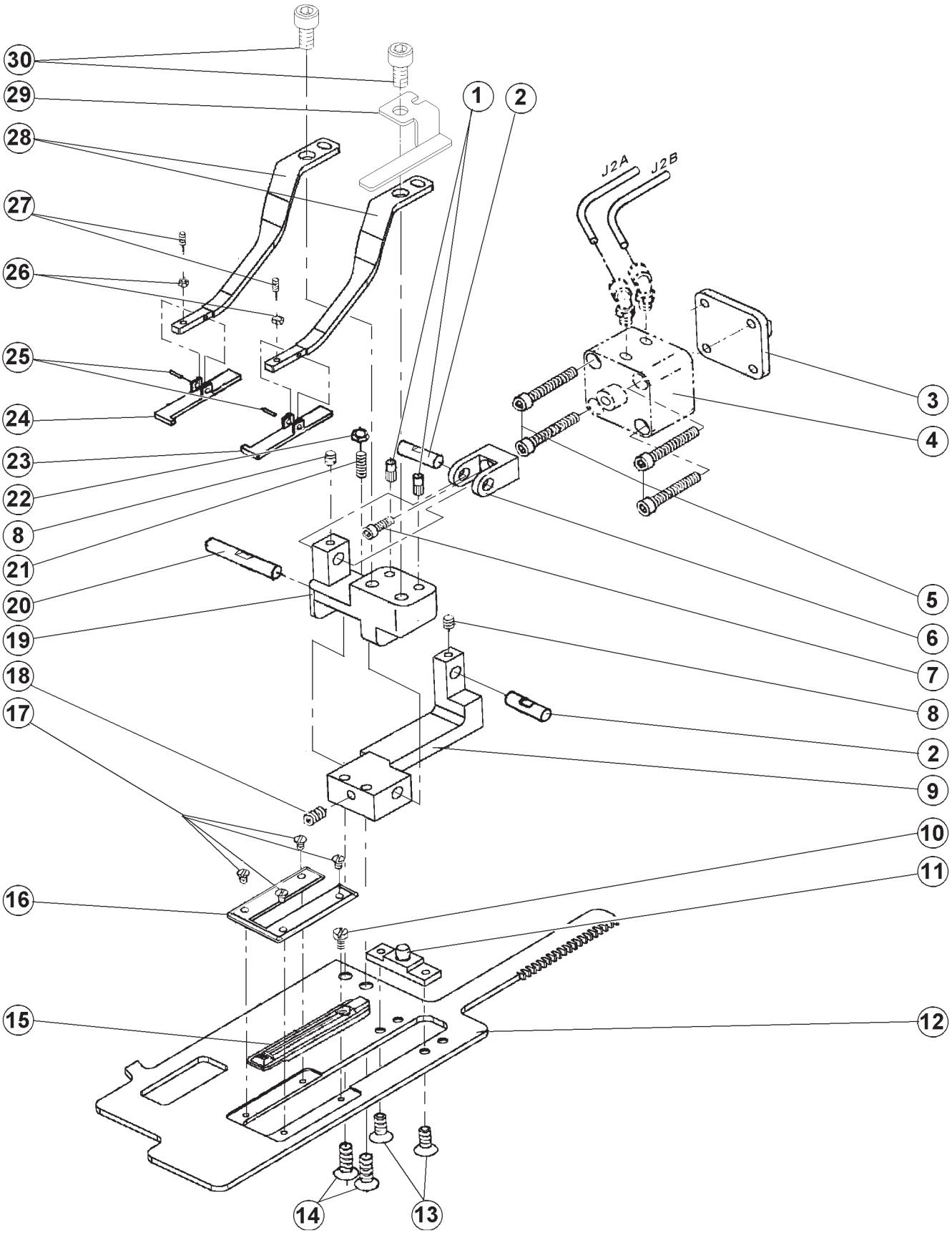


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NEEDLE BAR

DET	PART NUMBER	DESCRIPTION		QTY.
01	22.0195.0.000	Needle Bar		1
02	01.2193.0.000	Screw 4-60		1
03	24.0510.0.000	Needle Bar Holder	•	1
04	08.6400.5.005	Set Screw M5 x 5		1
05	01.7447.1.000	Porcelain Guide	•••	1
06	22.0520.0.000	Needle Bar Clamp		1
07	01.6551.0.000	Retaining Ring	•••	1
08	22.0230.0.000	Cupped Washer		2
09	22.0239.0.000	Felt Washer	•••	2
10	22.0530.0.000	Needle Bar Connecting Link		1
11	22.0542.0.000	Needle Bar Connecting Link Pin		1
12	08.6400.3.005	Set Screw M3 x 5		4
13	22.0541.0.000	Needle Bar Shoulder Screw		1
14	22.0540.0.000	Needle Bar Connecting Link Pin	• ••	1
15	08.6000.6.030	Screw M6 x 30		(1)
16	22.0525.0.000	Needle Bar Crank		(1)
17	01.7809.0.000	Retaining Ring		1
18	01.7804.0.000	Top Shaft Bearing		1
19	24.0500.0.000	Needle Bar Drive Shaft		1
20	12.2050.0.003	Bearing		1
21	08.6400.4.004	Set Screw M4 x 4		2 (2)
22	08.6000.6.016	Screw M6 x 16		2
23	01.7805.0.000	Shaft Bearing		1
24	22.0525.0.050	Needle Bar Crank Asm.		1
25	22.0545.0.000	Washer		1
26	24.0048.0.000	Needle Bar Drive Pulley		1
27	22.0175.0.000	Drive Shaft Key		1
28	24.0002.0.000	Clamp Collar		1
29	12.1045.2.001	Retaining Ring		1
30	22.0535.0.100	Needle Bar Crank Link Asm.	•	1
31	08.6000.6.025	Screw M6 x 25		1
32	02.0750.2.110	Needle		1
33	24.0001.0.000	Bearing Carrier Upper Shaft		1
34	17.0026.2.077	Spring		1
35	17.0082.8.017	Tension Disk		2
36	24.0100.0.000	Screw M3.5 x 0.35-11		1
37	08.6000.5.016	Screw M5 x 16		1
38	12.0008.4.279	Plastic Cable Fitting	•••	1
39	24.0546.0.000	Washer		1

CLAMPING

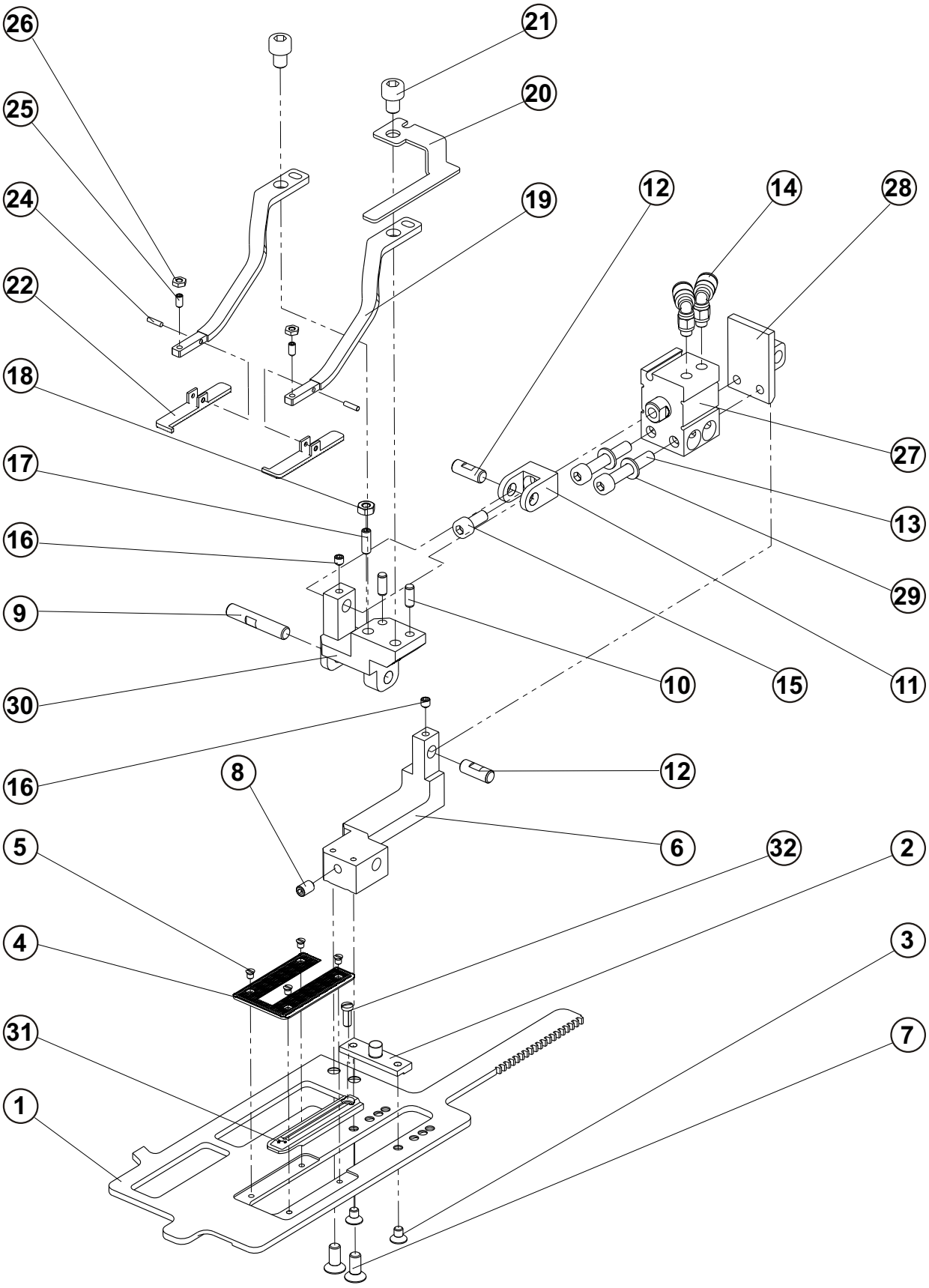


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DET	PART NUMBER	DESCRIPTION	QTY.
01	07.6045.0.046	Pin	2
02	22.0173.0.000	Clamp Toggle Pivot Pin	2
03	24.0036.1.000	Cylinder Mounting Bracket	1
04	See Page 3-45	Cylinder •	—
05	08.6000.5.022	Screw M5 x 22	4
06	24.0035.1.000	Cylinder Clevis	1
07	08.6000.5.012	Screw M5 x 12	1
08	08.6400.4.004	Set Screw M4 x 4	2
09	24.0158.1.000	Tail Bracket Clamp	1
10	01.2084.0.000	Fill. Screw 6-52	1
11	22.3036.0.000	Indexer Bracket *	1*
12	24.3028.1.000	Clamp Plate	1
13	08.6100.4.006	Screw M4x6 *	2*
14	08.6100.5.012	Screw M5 x 12	2
15	22.3034.0.000	Throat Plate	1
16	22.0164.0.000	Clamp Mat	1
17	01.2376.0.000	Screw 4-60	4
18	08.6400.5.008	Set Screw M5 x 10	1
19	24.3026.0.000	Tail Pivot Clamp	1
20	22.0159.0.000	Tail Pivot Clamp Pin	1
21	08.6400.4.012	Set Screw M4 x 12	1
22	08.6700.4.000	Nut M4	1
23	22.0224.0.000	R.H. Clamp Foot	1
24	22.0223.0.000	L.H. Clamp Foot	1
25	17.0031.0.460	Roll Pin	2
26	08.6710.3.000	Nut M3	2
27	08.6400.3.006	Set Screw M3 x 6	2
28	22.3029.0.000	Clamp Arm	2
29	24.4018.0.000	Stop *	1*
30	08.6000.6.008	Screw M6 x 8	2

CLAMPING - ANGLE

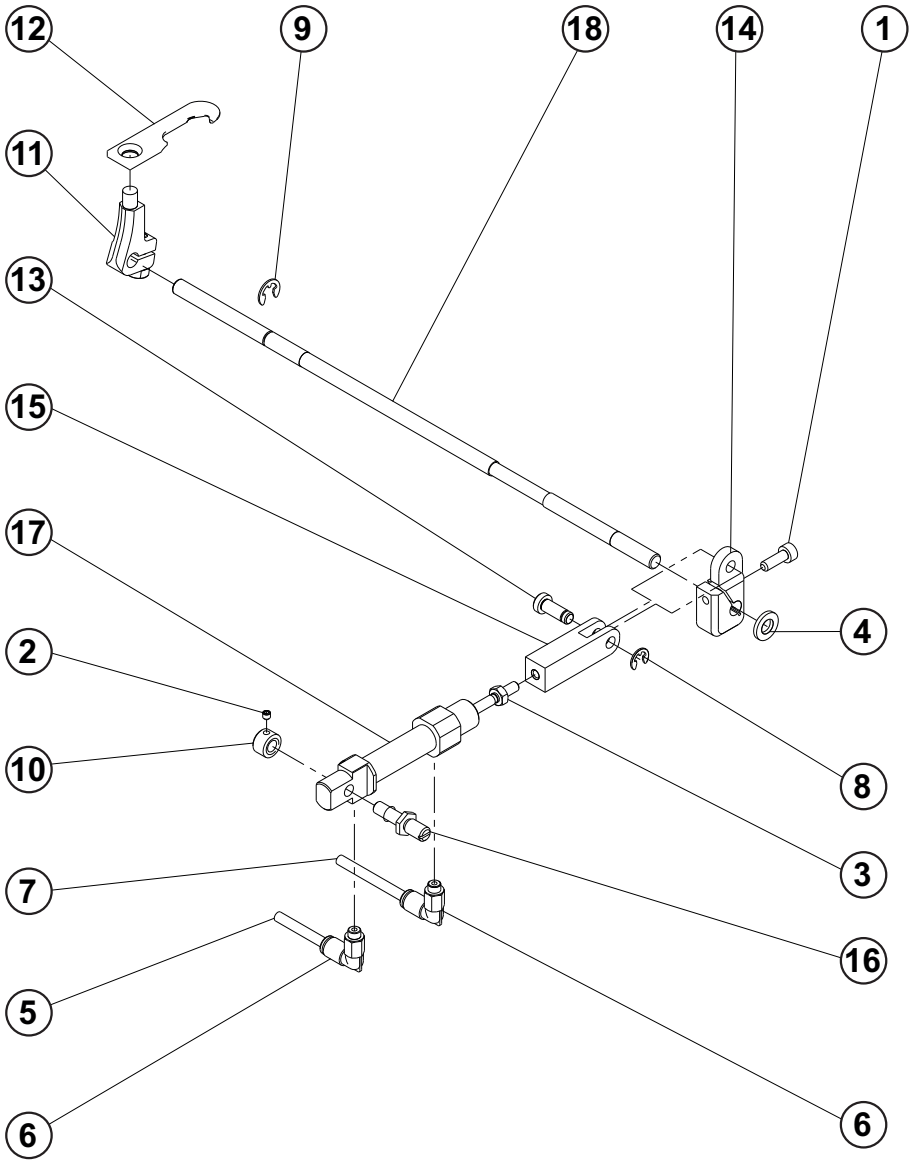


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CLAMPING - ANGLE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.3028.1.000	Clamping Plate ISBH + I		1
02	24.4103.0.000	Indexer Bracket		1
03	08.6100.4.006	Screw M4 x 6		2
04	22.0164.0.000	Clamping Mat BH, ISBH		1
05	01.2376.0.000	Screw-flat Head		4
06	24.0158.2.000	Tail Bracket Clamp		1
07	08.6100.5.012	Screw M5 x12		2
08	08.6400.5.008	Screw M5 x 8		1
09	24.0143.0.000	Pin		1
10	07.6045.0.046	Pin 4 x 10		2
11	24.0035.2.000	Cylinder Clevis	•	1
12	22.0173.0.000	Pin		2
13	08.6000.5.030	Screw M5 x 30		2
14	12.0010.3.028	Connector		2
15	08.6000.5.012	Screw M5 x 12		1
16	08.6400.4.004	Screw M4 x 4		2
17	08.6400.4.012	Screw M4 x 12		1
18	08.6700.4.000	Nut M4		1
19	22.3029.0.000	Clamp Arm		2
20	24.4018.1.000	Indexer Clamping Holder		1
21	08.6000.6.008	Screw M6 x 8		2
22	22.0223.0.000	Left Foot		1
23	22.0224.0.000	Right Foot		1
24	17.0031.0.460	Pinn 2 x 8		2
25	08.6400.3.006	Screw M3 x 6		2
26	08.6710.3.000	Nut M3		2
27	12.0010.3.062	Cylinder	•	1
28	24.0036.2.000	Cylinder Holder	•	1
29	08.6850.5.000	Washer 5,3		2
30	24.3026.1.000	Clamp Arm Holder		1
31	22.3034.0.000	Throat Plate		1
32	01.2084.0.000	Screw		1

THREAD TRIMMER

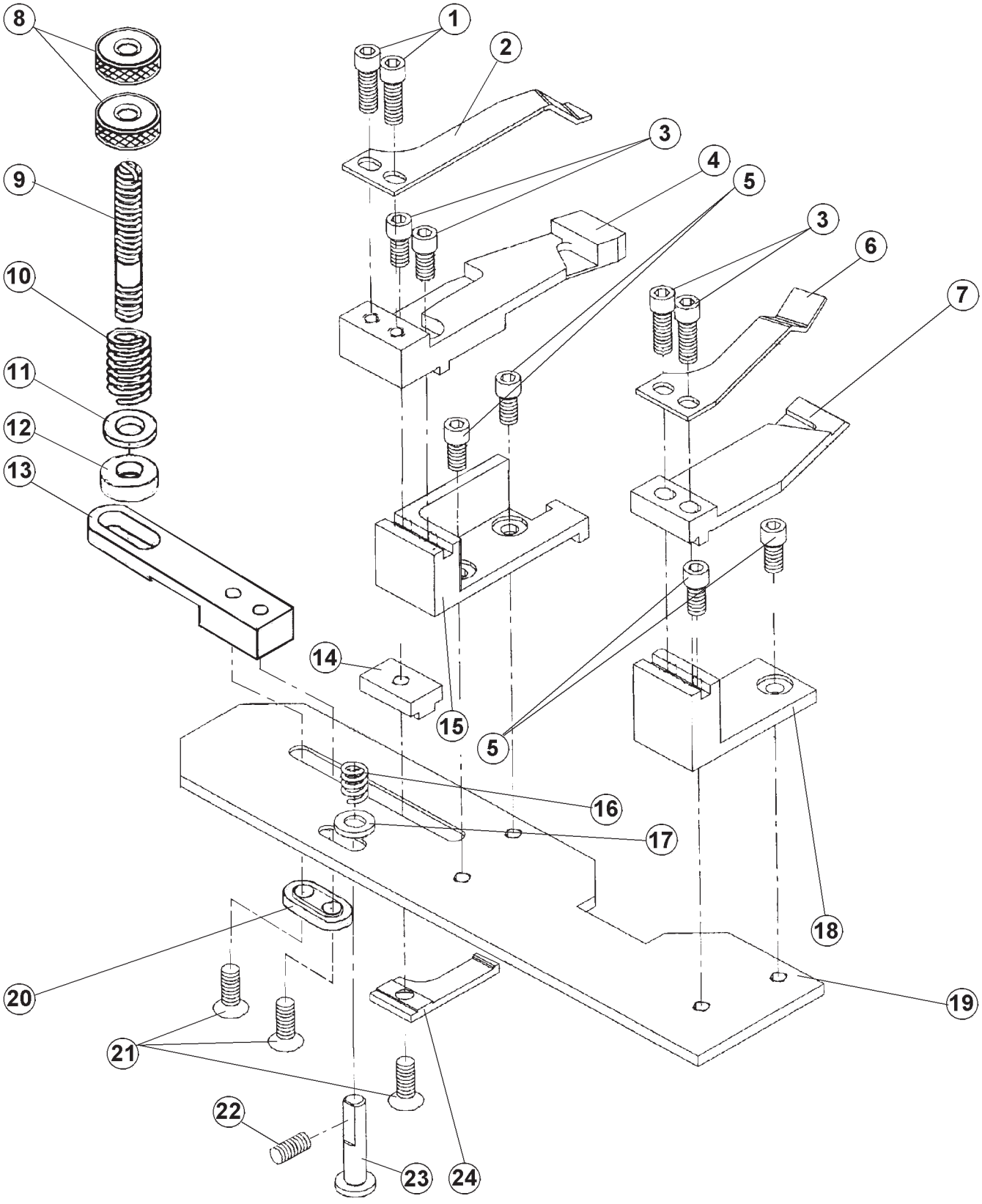


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THREAD TRIMMER

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6000.4.012	SCREW M4-12	1
02	08.6400.3.003	SCREW M3-3	1
03	08.6702.4.000	NUT M4	1
04	08.6850.6.000	WASHER 6,4	1
05	12.0008.3.416	AIR TUBE- J3B	1
06	12.0010.3.028	CONNECTOR	2
07	12.0010.3.080	AIR TUBE- J3A	1
08	12.1045.0.004	RETAINING RING 4	1
09	12.1045.0.005	E-CLIP 5	1
10	12.1050.0.011	CLAMP COLLAR 5	1
11	20.0092.0.004	TRIMMER ACTUATOR	1
12	20.0093.2.004	HOOK, TRIMMER	1
13	24.0003.0.000	TRIMMER PIVOT	1
14	24.0004.0.000	TRIMMER CLAMP LEVER	1
15	24.0005.0.000	CYLINDER CLEVIS	1
16	24.0006.2.000	TRIMMER STUD	1
17	24.0050.0.000	CYLINDER	1
18	24.0080.0.000	TRIMMER SHAFT ASSEMBLY	1

SHIFTER MECHANISM

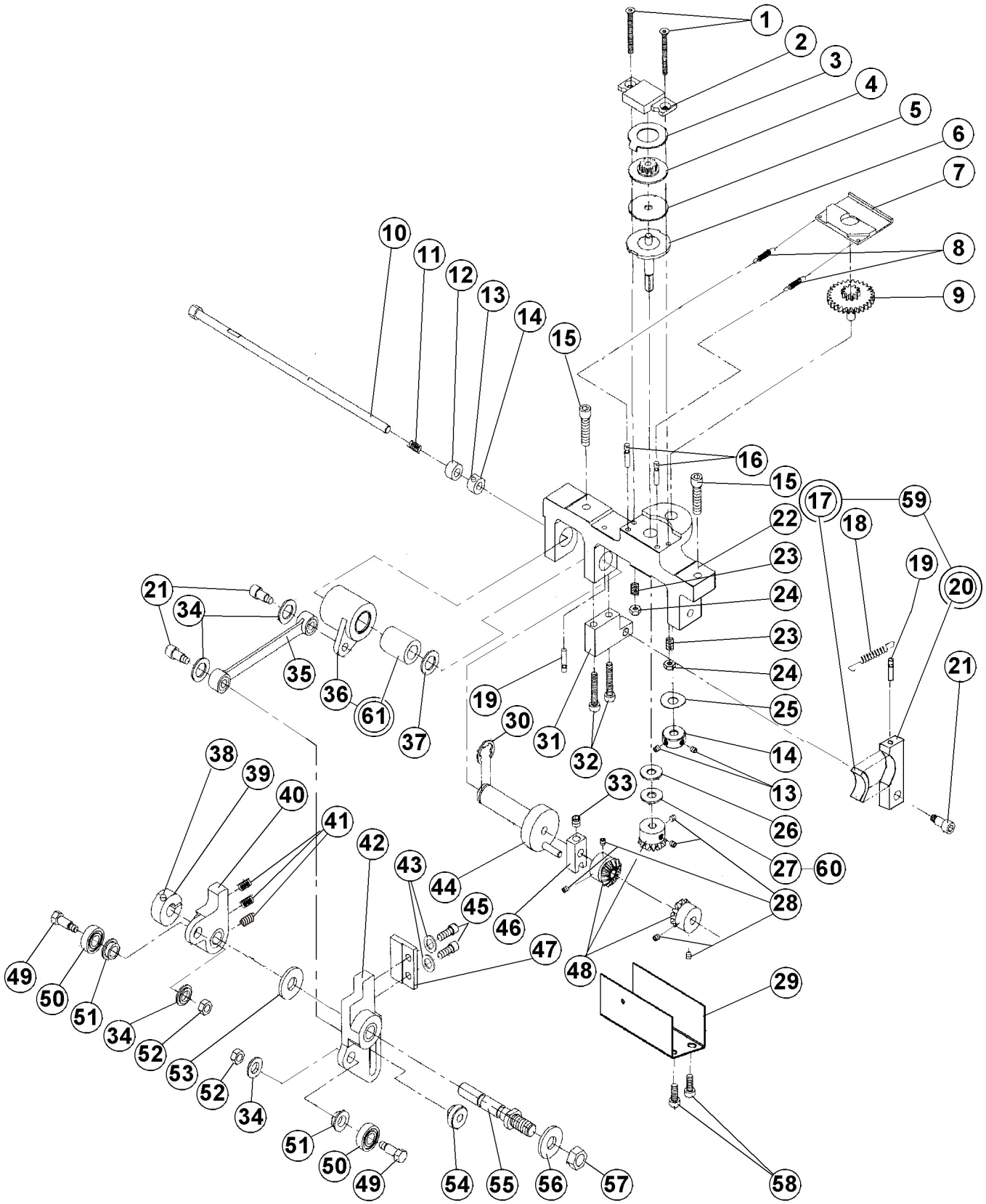


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SHIFTER MECHANISM

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6000.4.010	Screw M4 x 10	2
02	22.2653.0.000	Left Shifter Arm Spring	1
03	08.6000.4.016	Screw M4 x 16	4
04	22.2652.0.000	Left Shifter Arm	1
05	08.6000.4.005	Screw	4
06	22.2657.0.000	Right Shifter Arm Spring	1
07	22.2656.0.000	Right Shifter Arm	1
08	24.3074.0.000	Nut M6	2
09	24.3073.0.000	Screw	1
10	07.6440.0.032	Spring	1
11	08.6850.6.000	Washer	1
12	24.3075.0.000	Rubber Washer ●●●	1
13	24.3072.0.000	Shifter Brake	1
14	22.0405.0.000	Adjustable Link Nut	1
15	22.2651.0.000	Left Shifter Block	1
16	07.6440.0.040	Spring	1
17	08.6887.5.000	Washer	1
18	22.2655.0.000	Right Shifter Block	1
19	22.2665.0.000	Main Cam Shifter Plate	1
20	24.3071.0.000	Shifter Brake Bracket	1
21	08.6100.4.006	Screw M4 x 6	3
22	08.6400.4.005	Set Screw M4 x 5	1
23	22.0400.0.000	Spring Load Pin	1
24	22.2664.0.000	Buttonhole Adjusting Link	1

FEED MECHANISM

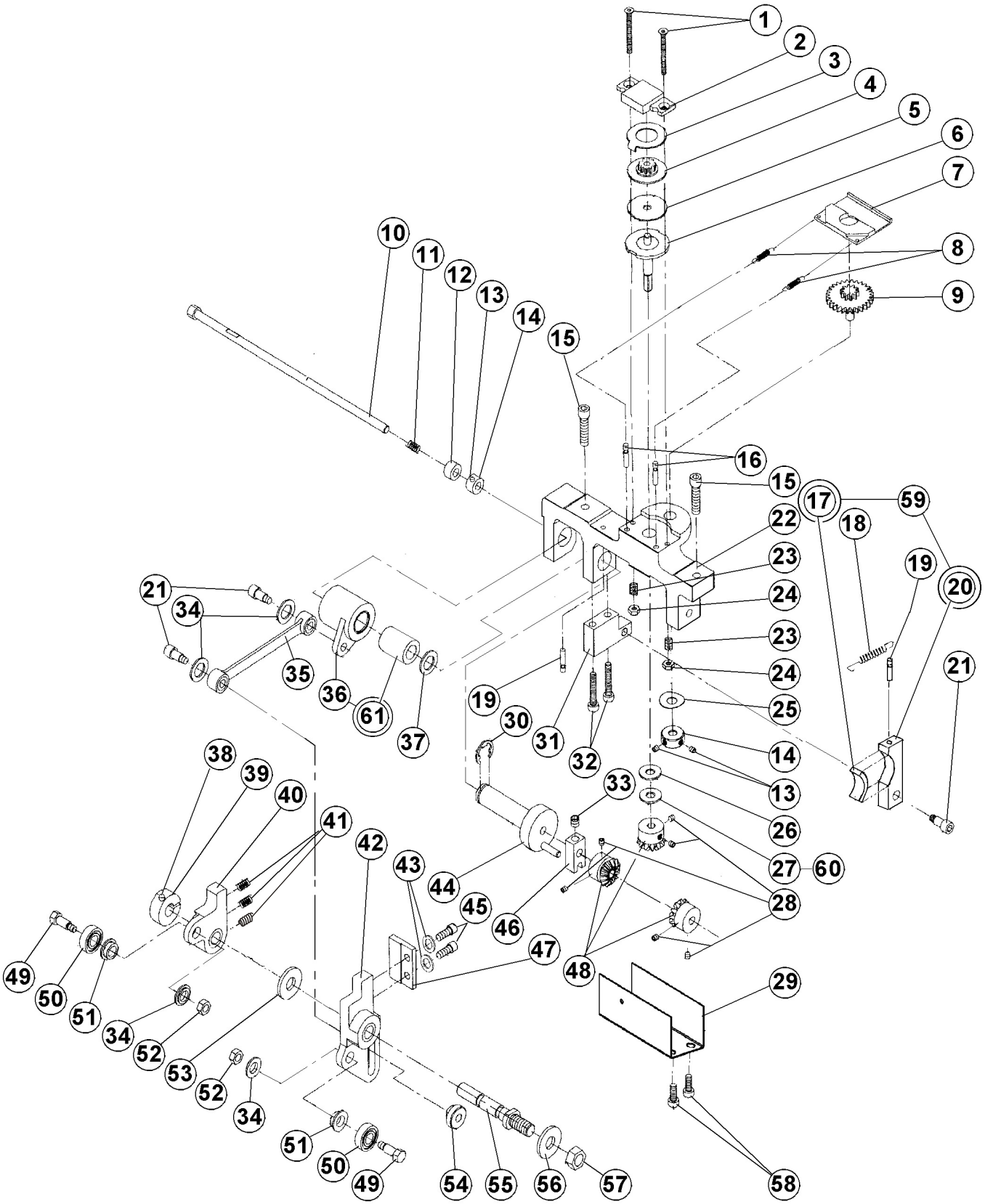


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FEED MECHANISM

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6100.3.030	Screw M3 x 30	2
02	22.0114.0.000	Feed Brake Pressure Plate	1
03	22.0121.0.000	Slip Clutch Drive Washer	1
04	22.0354.0.000	Slip Clutch Feed Gear	1
05	24.0126.0.000	Friction Washer ●●●	1
06	22.0312.0.000	Slip Clutch Feed Shaft	1
07	22.0061.0.000	Clamp Plate Gear Rack Retainer	1
08	07.6440.0.033	Spring	2
09	24.0351.0.000	Feed Gear Assembly	1
10	22.0325.0.000	Feed Reversing Shaft	1
11	07.6440.0.041	Spring	1
12	22.0228.0.000	Collar	1
13	17.0011.1.149	Set Screw M5 x 0,5 - 5	4
14	24.0049.0.000	Set Collar	2
15	08.6000.5.020	Screw M5 x 20	2
16	07.6045.0.037	Grooved Pin 3 x 16	2
17	22.0313.0.000	Feed Brake Pad ●●●	(1)
18	07.6440.0.050	Spring	1
19	07.6045.0.009	Pin 3 x 12	2
20	22.0309.0.000	Feed Brake ●	(1)
21	22.0184.0.000	Screw M5 x 8	3
22	22.0315.0.000	Feed Shaft Bracket ●●	1
23	07.6440.0.028	Spring	2
24	08.6733.3.000	Lock Nut M3	2
25	17.0019.2.057	Lockwasher	1
26	22.0208.0.000	Flat Washer	1
27	22.0186.0.000	Washer Dia. 5.2/17-0.2	1
28	08.6400.4.005	Set Screw M4 x 5	6
29	24.2035.0.000	Gear Cover	1
30	07.6045.0.034	E-Ring	1
31	22.0049.0.000	Feed Brake Mounting Block ●	1
32	08.6000.4.025	Screw M4 x 25	2
33	08.6400.5.005	Set Screw M5 x 5	1
34	22.0100.0.000	Shoulder Washer	4
35	22.0305.0.000	Feed Connecting Link ● ●●	1
36	22.0320.0.000	Feed Shaft Bearing Housing	1
37	17.0019.0.517	Washer	1
38	08.6000.3.010	Screw M3 x 10	1
39	22.0183.0.000	Collar Dia. 8	1
40	22.0026.0.000	L.H. Feed Cam Follower ● ●●	1
41	07.6440.0.018	Spring	2
42	24.0127.0.000	R.H. Feed Cam Follower ● ●●	1
43	08.6800.4.000	Lockwasher M4	2
44	22.0336.0.000	Feed Shaft	1
45	08.6000.4.014	Screw M4 x 14	2
46	22.0370.0.000	Feed Crank	1

FEED MECHANISM

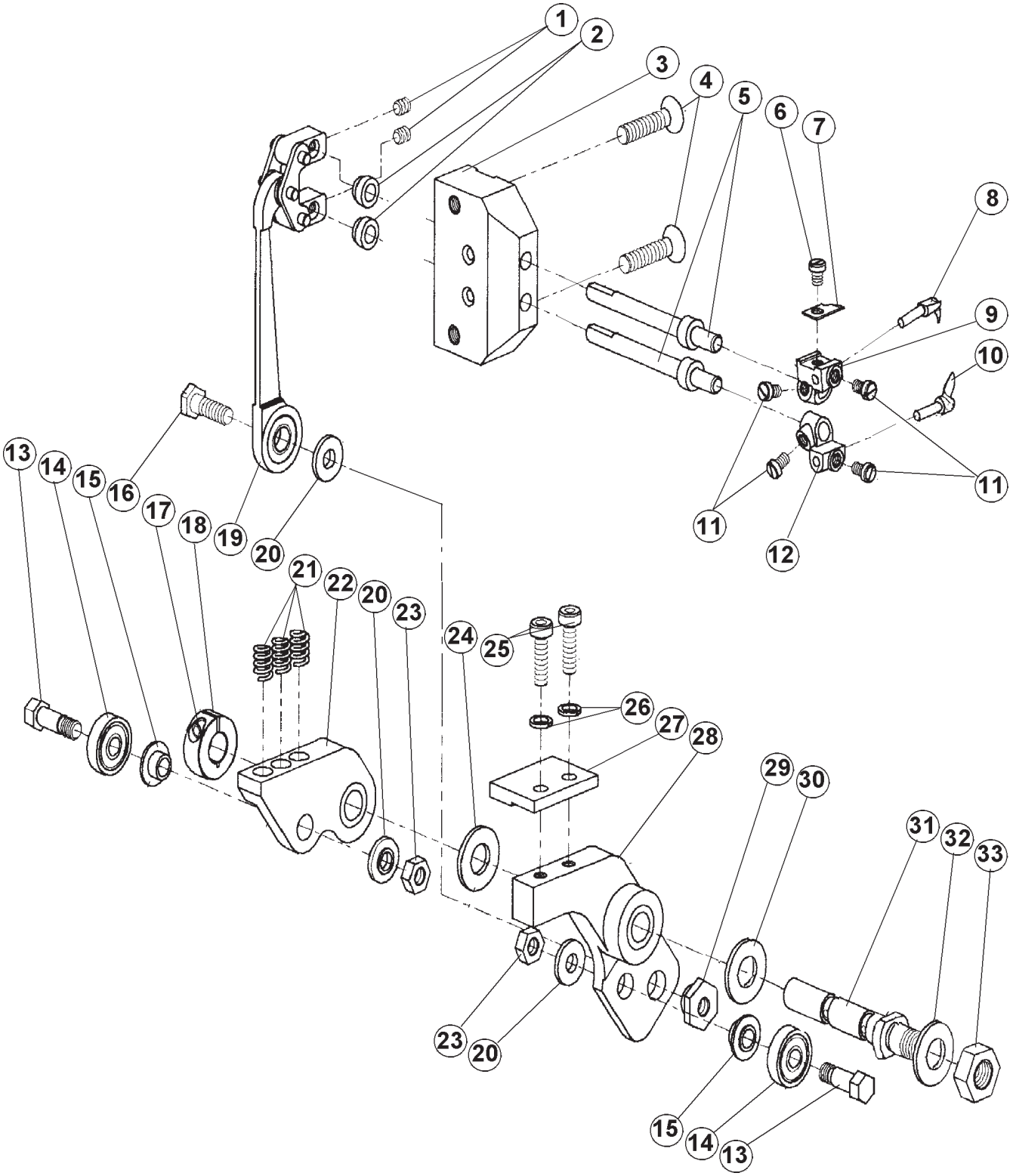


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FEED MECHANISM

DET	PART NUMBER	DESCRIPTION	QTY.
47	22.0021.0.000	Spring Retain Block	1
48	22.0353.0.000	Steel Bevel Gear	3
49	22.0032.0.000	Bearing Shoulder Screw	2
50	07.6321.0.025	Bearing	2
51	22.0031.0.000	Bearing Spacer	2
52	08.6710.5.000	Nut M5	2
53	22.0232.0.000	Washer	1
54	22.0110.0.000	Shoulder Nut M5	1
55	22.0022.0.000	Pivot Shaft	1
56	08.6850.8.000	Flat Washer M8	1
57	08.6700.8.000	Nut M8	1
58	08.6000.4.005	Screw M4 x 5	2
59	22.0309.0.050	Feed Brake Assembly	1
60	24.0140.0.000	Washer Dia. 5.2/17-0.1	1
61	07.6321.0.030	Bearing	(1)

LOOPER MECHANISM

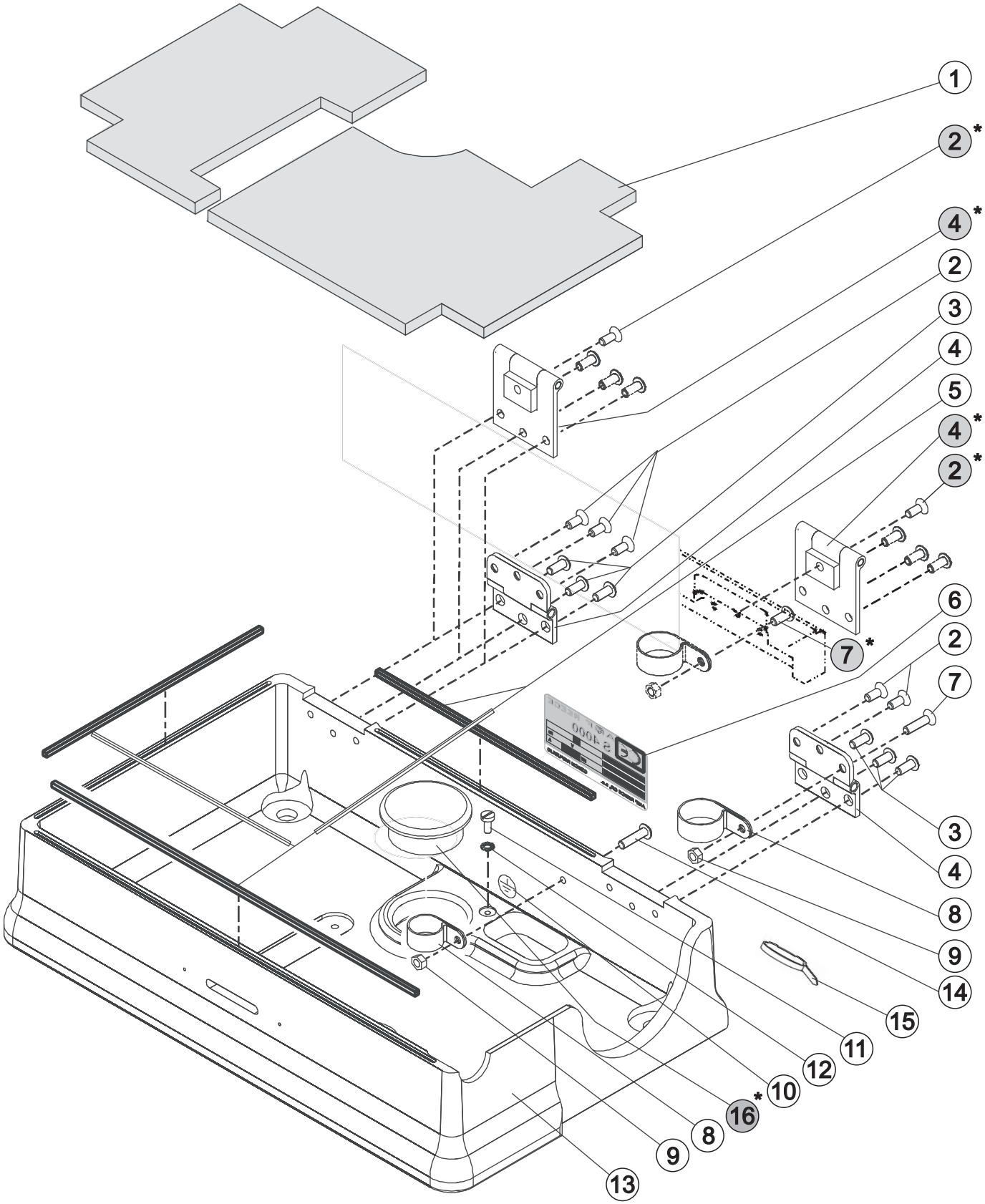


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LOOPER MECHANISM

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6400.4.004	Set Screw M4 x 4	2
02	22.2442.0.000	Looper Spacer	2
03	22.2410.0.000	Looper Shaft Block	1
04	08.6100.5.020	Screw M5 x 20	2
05	22.2440.0.000	Looper Shaft	2
06	01.1382.0.000	Screw	1
07	20.0094.0.000	Trimmer Knife	1
08	20.0111.0.000	First Looper	1
09	23.2106.0.000	First Looper Holder	1
10	20.0112.0.000	Second Looper	1
11	01.1397.0.000	Screw	4
12	23.2107.0.000	Second Looper Holder	1
13	24.0066.0.000	Bearing Screw	2
14	12.2010.1.002	Cam Follower Bearing	2
15	22.0031.0.000	Bearing Spacer	2
16	22.0064.0.000	Bite Shoulder Screw	1
17	08.6000.3.010	Screw M3 x 10	1
18	22.0183.0.000	Collar	1
19	22.2425.0.050	Looper Link Assembly	1
20	22.0100.0.000	Shoulder Washer	3
21	07.6440.0.036	Spring	3
22	22.0024.0.000	Looper Cam Follower Plate • ••	1
23	08.6710.5.000	Hex Nut M5	2
24	22.0232.0.000	Flat Washer	1
25	08.6000.4.014	Screw M4 x 14	2
26	08.6800.4.000	Lockwasher M4	2
27	22.0021.0.000	Spring Retainer Block	1
28	22.0023.0.000	R.H. Looper Cam Follower Plate • ••	1
29	22.0105.0.000	Looper Eccentric Nut	1
30	22.0233.0.000	Flat Washer	1
31	22.0022.0.000	Pivot Shaft	1
32	08.6850.8.000	Flat Washer M8	1
33	08.6700.8.000	Hex Nut M8	1

BASE



*— S4000 ISBH Embedded Machine

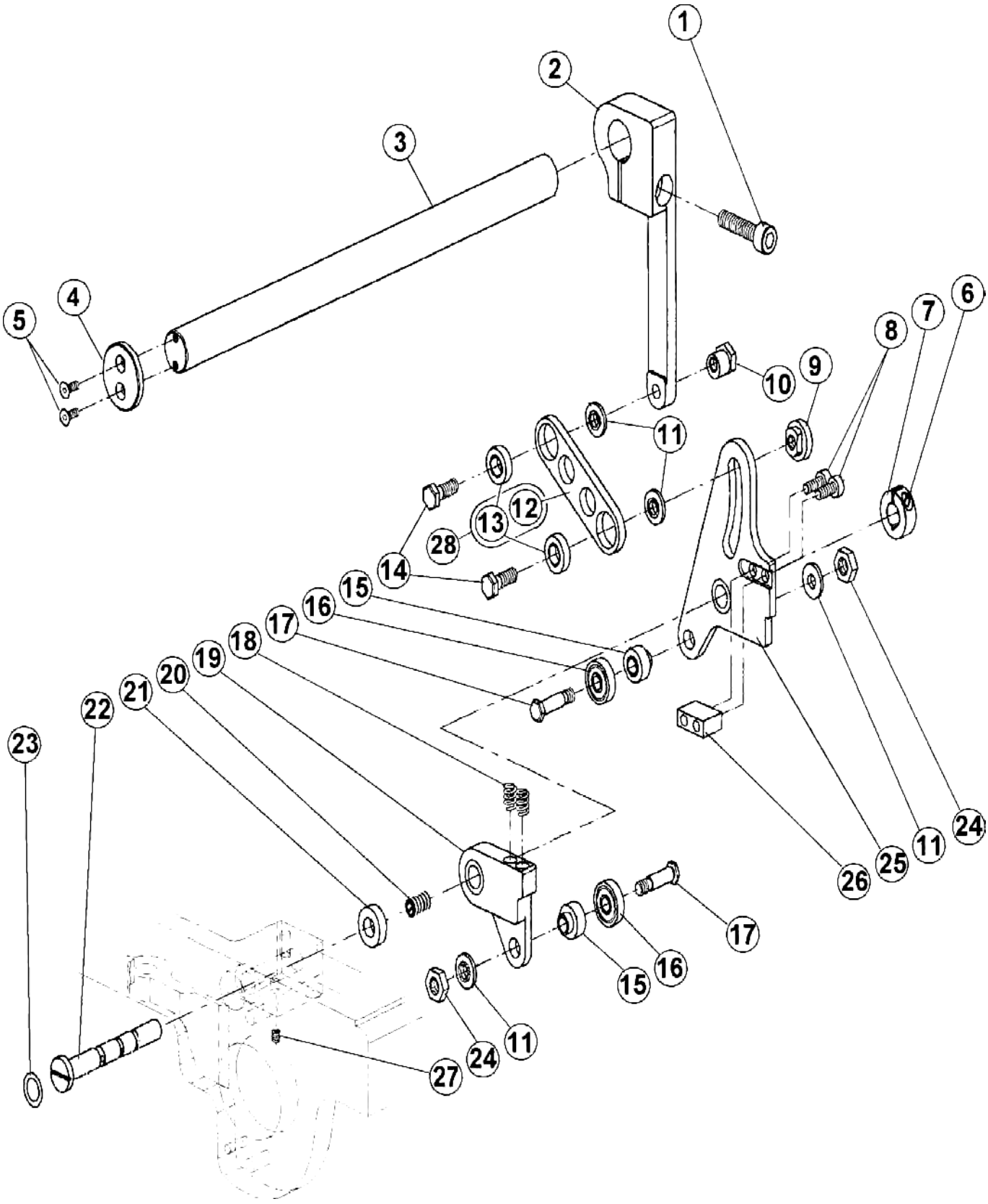
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BASE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.0111.0.000	Base Sound Deadener	●●●	1
02	08.6100.5.012	Screw M5 x 12		5
02*	08.6100.5.012	Screw M5 x 12		2*
03	08.6200.5.012	Screw M5 x 12		6
04	22.1010.0.000	Base Hinge		2
04*	24.0155.0.000	Base Hinge		2*
05	24.0038.0.000	Base Gasket	●●●	1
06	12.8000.1.028	CE"" Label	●●●	1
07	08.6100.5.020	Screw M5 x 20		1
07*	08.6200.5.014	Screw M5 x 14		1*
08	12.0008.4.197	Cord Clamp	●●●	2
09	08.6700.5.000	Nut M5		2
10	12.0008.4.052	Label (Ground)	●●●	1
11	08.6012.4.010	Screw M4 x 10		1
12	08.6832.4.000	Serrated Lockwasher M4		1
13	24.6005.1.002	Base		1
14	08.6200.5.020	Screw		1
15	12.0008.3.023	Ty - Wrap	●●●	1
16*	12.0008.4.632	Plug	●●●	1*

* Modification — S4000 ISBH (Embedded)

BITE MECHANISM

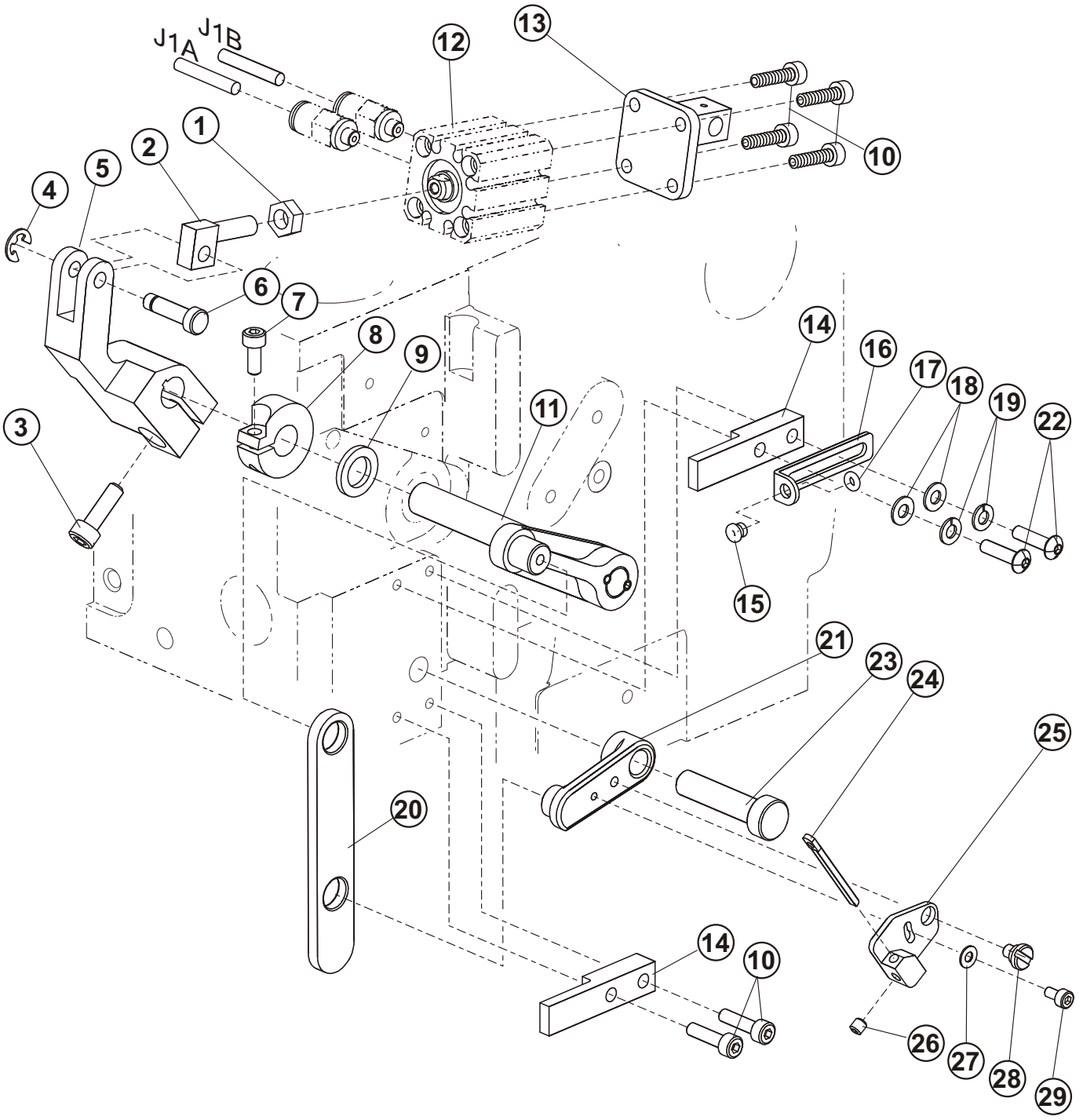


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BITE MECHANISM

DET	PART NUMBER	DESCRIPTION		QTY.
01	08.6000.6.025	Screw M6 x 25		1
02	22.0008.0.000	Bite Lever	•	1
03	24.0055.0.000	Bite Shaft		1
04	22.0063.0.000	Bite Shaft Retainer		1
05	08.6100.3.008	Screw M3 x 8		2
06	08.6000.3.010	Screw M3 x 10		1
07	22.0183.0.000	Collar*Dia. 8		1
08	08.6000.4.014	Screw M4 x 14		2
09	22.0110.0.000	Shoulder Nut M5		1
10	22.0214.0.000	Eccentric Nut M5		1
11	22.0100.0.000	Shoulder Washer		4
12	22.0009.0.000	Bite Adjusting Link	•	(1)
13	07.6321.0.029	Bearing		(2)
14	22.0064.0.000	Bite Shoulder Screw		2
15	22.0029.0.000	Bite Follower Bearing Spacer		2
16	07.6321.0.025	Bearing		2
17	22.0028.0.000	Bite Follower Bearing Screw		2
18	07.6440.0.028	Spring		2
19	22.0027.0.000	Right Cam Follower	• ••	1
20	08.6400.4.005	Set Screw M4 x 5		1
21	22.0069.0.000	Bite Follower Spacer		1
22	22.0020.0.000	Bite Pivot Shaft		1
23	12.0008.6.800	Rubber Ring	•••	1
24	08.6700.5.000	Hex Nut M5		2
25	24.0033.0.000	Left Cam Follower	• ••	1
26	22.0030.0.000	Bite Follower Spring Retainer		1
27	08.6400.4.004	Screw M4x4		1
28	22.0009.0.050	Bite Adjusting Link Assembly		1

THREAD DRAW - OFF MECHANISM

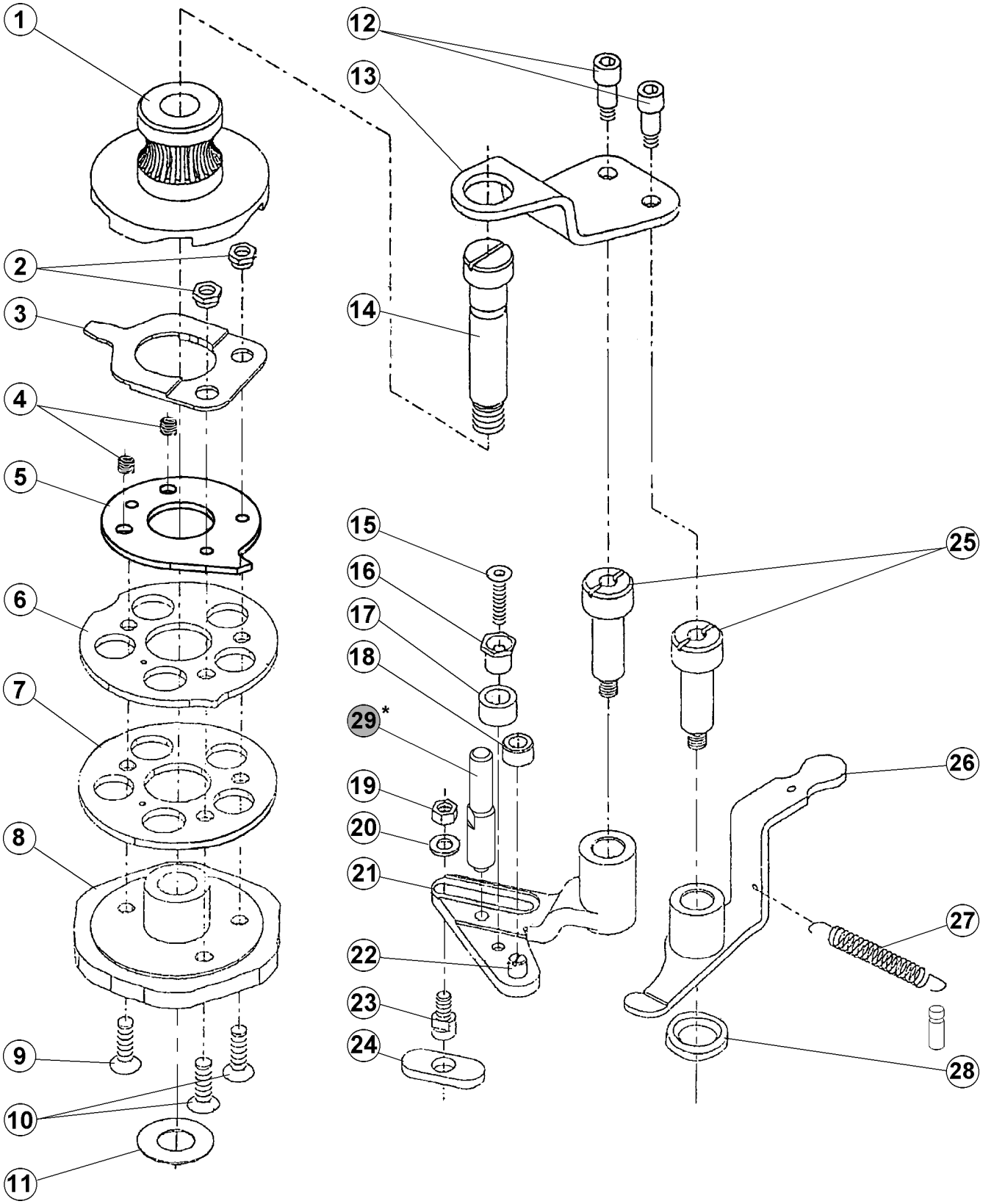


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THREAD DRAW - OFF MECHANISM

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6710.6.000	Nut M6	1
02	24.0037.0.000	Cylinder Clevis	1
03	08.6000.5.016	Screw M5 x 16	1
04	07.6045.0.042	E-Clip	1
05	24.0011.0.000	Knife Drive Lever	1
06	24.0014.0.000	Pivot	1
07	08.6000.4.010	Screw M4 x 10	1
08	24.0010.0.000	Clamp Collar	1
09	24.0009.0.000	Washer	1
10	08.6000.4.016	Screw M4 x 16	6
11	22.1415.0.050	Knife Lever Assembly	1
12	See Page 3-45	Thread Draw-Off Cylinder	—
13	24.0039.1.000	Thread Draw-Off Bracket	1
14	22.1436.0.000	Drive Plate Retainer	2
15	01.7447.1.000	Porcelain Guide ●●●	1
16	22.0046.0.000	Thread Guide Bracket	1
17	01.6551.0.000	Retaining Ring ●●●	1
18	08.6850.4.000	Flat Washer M4	2
19	08.6800.4.000	Lockwasher M4	2
20	24.1430.1.000	Drive Plate	1
21	24.0062.0.000	Knife Guide Link	1
22	08.6200.4.016	Screw M4 x 16	2
23	22.0161.0.000	Pivot Eccentric	1
24	22.0091.0.000	Thread Take-Up	1
25	24.0063.0.000	Thread Draw-Off	1
26	08.6400.4.004	Set Screw M4 x 4	1
27	08.6850.3.000	Washer M3	1
28	24.0061.0.000	Shoulder Screw	1
29	08.6000.3.006	Screw M3 x 6	1

MAIN CAM



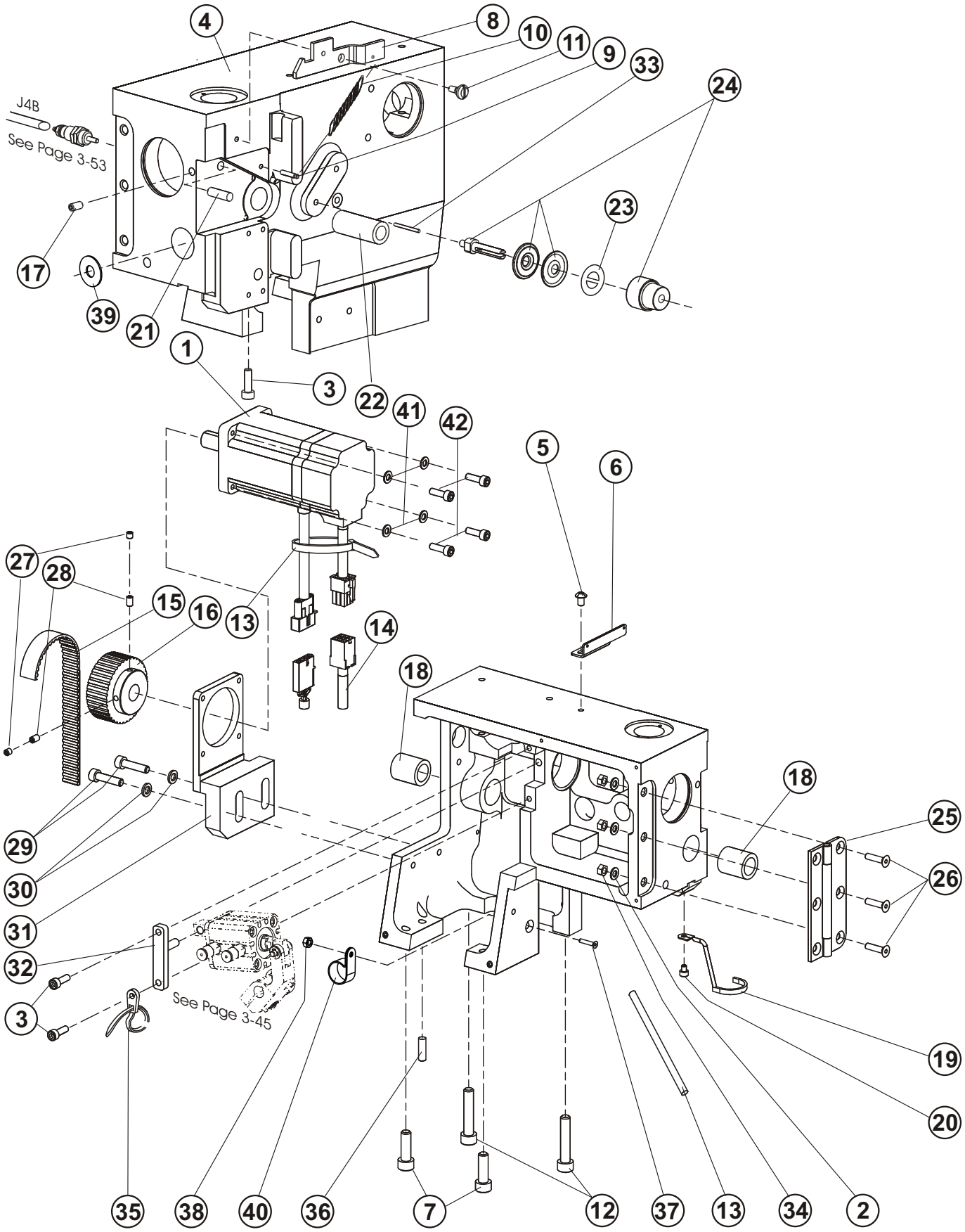
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MAIN CAM

DET	PART NUMBER	DESCRIPTION	QTY.
01	22.2607.0.000	Drive Disk/Worm Gear Hub	1
02	22.2627.0.000	Shoulder Nut	2
03	22.2626.0.000	Drive Disk Switch Spring	1
04	07.6440.0.037	Spring	2
05	24.3076.0.000	Stop Disk	1
06	24.3070.0.000	Feed Reversing Cam	1
07	22.3069.0.000	Washer	1
08	24.3077.0.000	Barring Cam ISBH	1
09	08.6100.5.010	Screw M5 x 10	1
10	22.0137.0.000	Screw M5 x 14	2
11	07.6321.0.001	Thrust Washer	1
12	22.0182.0.000	Screw M5 x 4	2
13	22.0097.0.000	Main Cam Brace	1
14	22.2610.0.000	Main Cam Shoulder Screw	1
15	08.6100.4.012	Screw M4 x 12	1
16	22.2635.0.000	Barring Lever Eccentric	1
17	22.2638.0.000	Barring Lever Roller	1
18	22.2639.0.000	Barring Lever Roller	1
19	08.6700.5.000	Nut M5	1
20	08.6850.5.000	Washer M5	1
21	24.2630.1.000	Barring Lever	1
22	22.2637.0.000	Barring Lever Stud	1
23	22.2633.0.000	Slidestone Retaining Screw	1
24	22.2631.0.000	Clamp Plate Slidestone	1
25	22.0106.0.000	Hub Shoulder Screw	2
26	22.2640.0.050	Feed Reversing Lever	1
27	07.6440.0.045	Extension Spring	1
28	22.3003.0.000	Spacer	1
29*	24.4028.1.000	Stud*	1*

* Modification — ISBH+I (Indexer)

HEAD ASSEMBLY

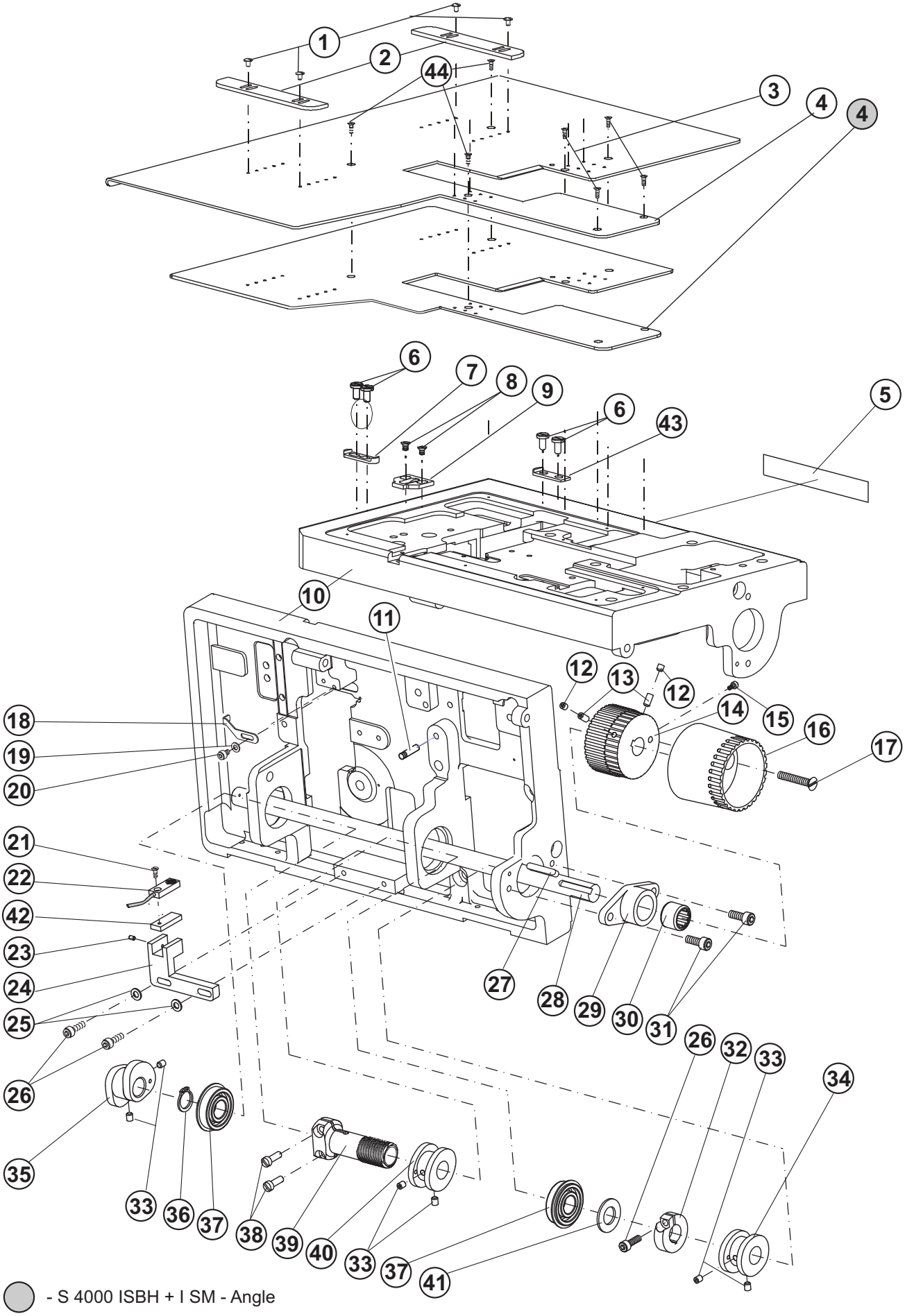


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HEAD ASSEMBLY

DET	PART NUMBER	DESCRIPTION		QTY.
01	See Page 3-37	Servomotor		—
02	08.6850.5.000	Washer M5		3
03	08.6000.5.016	Screw M5 x 16		4
04	24.6000.5.000	Head		1
05	08.6200.5.008	Screw M5 x 8		1
06	22.0054.0.000	Upper Thread Guide		1
07	08.6000.8.025	Screw M8 x 25		2
08	22.0058.0.000	Sewing Head Latch		1
09	07.6045.0.037	Grooved Pin 3 x 16		1
10	07.6440.0.051	Latch Tension Spring		1
11	22.0062.0.000	Screw M4 x 3		1
12	08.6000.8.040	Screw M8x40		2
13	12.0008.4.072	Cable Tie	●●●	10
14	See Page 3-37	Encoder Cable		—
15	12.5050.2.009	Belt	●●●	1
16	24.0108.0.000	Motor Pulley	●	1
17	08.6400.5.010	Screw M5 x 10		1
18	01.7806.0.000	Oilite Bushing	●●	2
19	24.0044.0.000	Needle Guard		1
20	08.6000.4.005	Screw M4 x 5		1
21	07.6045.0.053	Pin 6 x 20		1
22	22.1422.0.000	Knife Shaft Bushing		1
23	17.0082.8.082	Release Washer		1
24	24.0119.0.050	Large Tension Assembly	●●●	1
25	22.6002.0.000	Head Hinge Assembly		1
26	08.6100.5.020	Screw M5 x 20		3
27	08.6400.5.005	Set Screw M5 x 5		2
28	08.6400.5.008	Set Screw M5 x 8		2
29	08.6000.6.025	Screw M6 x 25		2
30	08.6850.6.000	Washer M6		2
31	24.0167.0.000	Motor Bracket		1
32	24.0016.0.000	Cylinder Pivot Stud Assembly		1
33	12.1010.2.003	Pin 2 x 24		1
34	08.6700.5.000	M5 Nut		3
35	12.0008.4.598	Plastic Cable Fitting	●●●	1
36	12.1011.0.001	Pin 6 x 20		1
37	08.6100.5.020	Screw M5 x 20		1
38	08.6700.5.000	Nut M5		1
39	24.0546.0.000	Washer		1
40	12.0008.4.100	Clamp	●●●	1
41	08.6850.4.000	Washer M4		4
42	08.6000.4.016	Screw M4x16		4

BEDPLATE



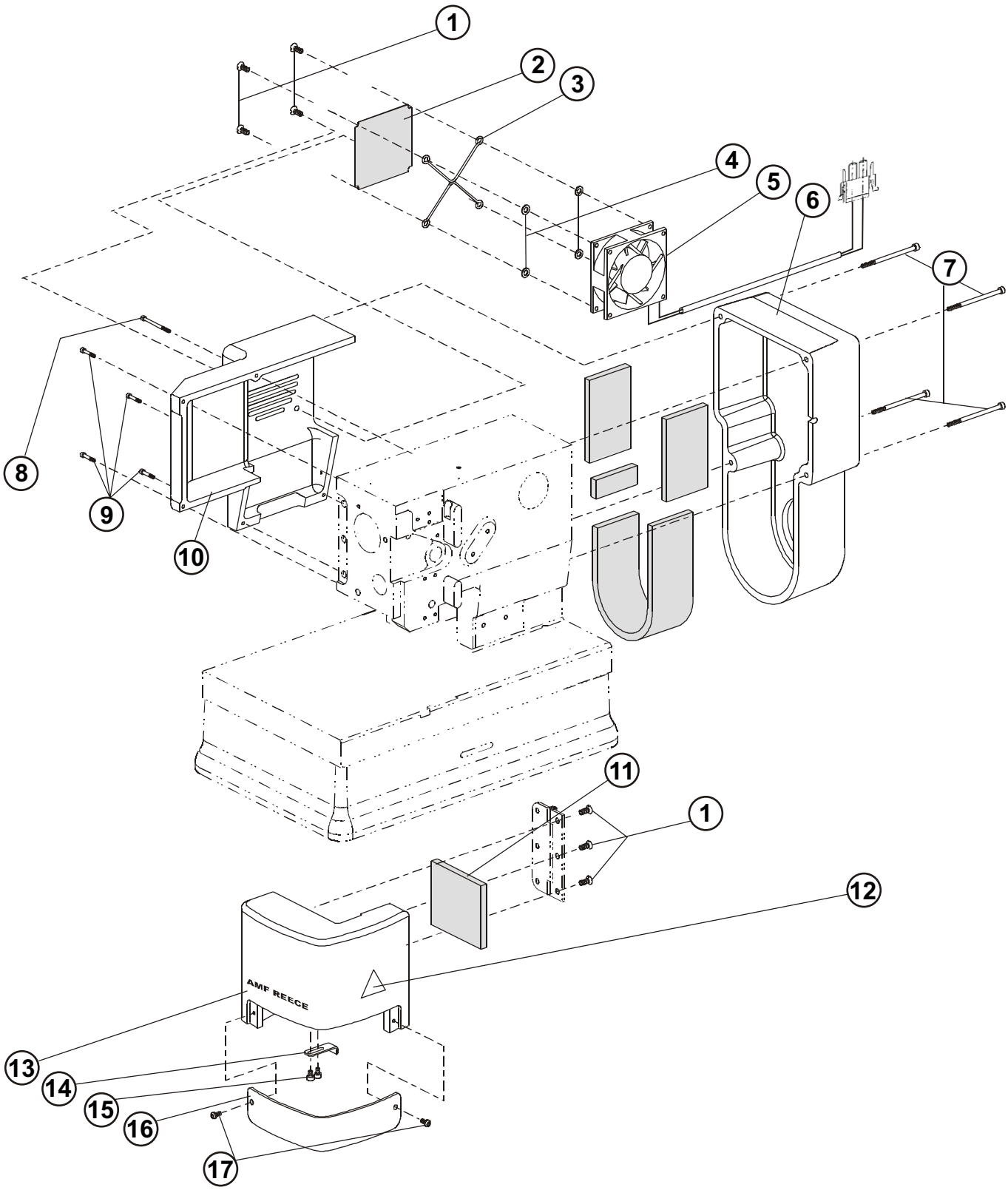
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BEDPLATE

DET	PART NUMBER	DESCRIPTION		QTY.
01	22.3068.0.000	Screw (Only ISBH+I model)		4
02	24.3054.0.000	Material Guide		2
03	08.6120.3.008	Screw M3 x 8		4
04	24.3055.0.000	Cover Plate - Straight		1
04	24.3055.2.000	Cover Plate - Angle		1
05	05.1394.0.000	AMF Reece Label - small	●●●	1
06	22.0143.0.000	Screw		4
07	22.3022.0.000	Front Stop		1
08	08.6100.4.006	Screw M4 x 6		2
09	22.0408.1.000	Trimmer Cover Plate		1
10	24.6100.1.000	Bedplate ISBH		1
11	07.6045.0.054	Pin 5 x 20		1
12	08.6400.5.005	Set Screw M5 x 5		2
13	08.6400.5.010	M5 x 10 Set Screw		2
14	24.0018.0.000	Main Shaft Drive Pulley	●	1
15	08.6000.3.006	Screw M3 x 6		1
16	24.0051.0.066	Hand Wheel	●	1
17	08.6100.6.035	Screw M6 x 35		1
18	22.3219.0.000	Needle Guard		1
19	08.6850.4.000	Washer M4		1
20	08.6000.4.006	Screw M4 x 6		1
21	08.6100.3.008	Screw M3 x 8		1
22	See Page 3-37	End of Cycle Sensor with Cable	●●●	—
23	08.6400.3.004	Set Screw M3 x 4		1
24	24.0020.0.000	End of Cycle Sensor Bracket		1
25	08.6850.5.000	Washer M5		2
26	08.6000.5.016	Screw M5 x 16		3
27	12.4030.0.002	Key 5x5x30		1
28	24.1000.0.000	Main Shaft		1
29	24.0019.0.000	Bearing Carrier Lower Shaft		1
30	12.2050.0.005	Bearing		1
31	08.6000.6.016	Screw M6 x 16		2
32	24.0002.0.000	Clamp Collar		1
33	17.0011.1.149	Set Screw M5 x 0.5-5		6
34	22.0006.0.000	Bite Cam		1
35	24.2400.0.000	Looper Cam		1
36	12.1045.2.001	Retaining Ring		1
37	01.7805.0.000	Shaft Bearing		2
38	22.0153.0.000	Screw		2
39	22.8400.0.000	Shaft Worm Gear		1
40	22.0300.0.000	Feed Cam		1
41	22.0545.0.000	Washer		1
42	24.0027.0.000	Sensor Mounting Plate		1
43	22.0115.0.000	Stop		1
44	15.1436.0.100	Screw M3 x 6		3

COVERS



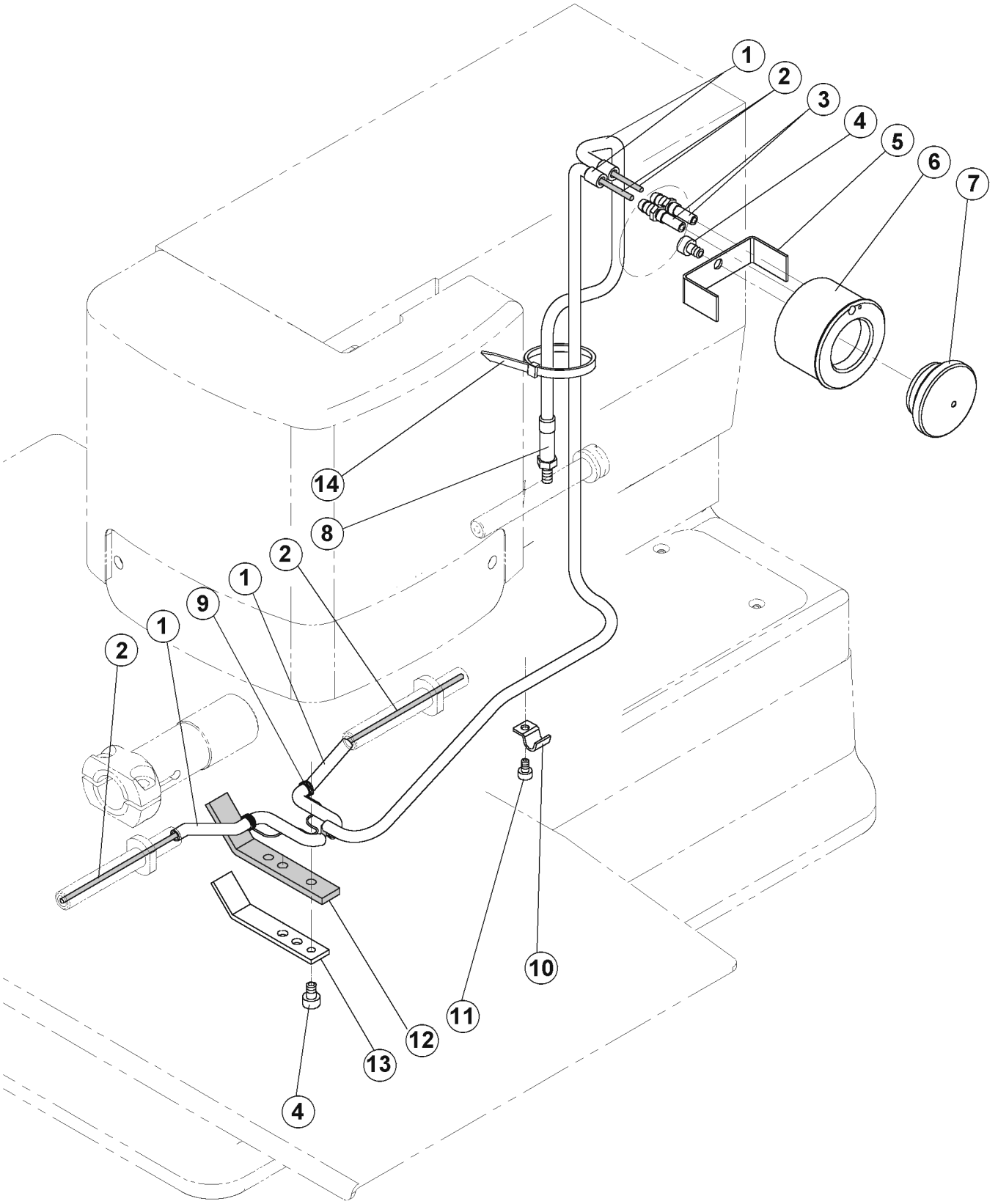
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COVERS

DET	PART NUMBER	DESCRIPTION		QTY.
01	08.6100.5.016	Screw M5 x 16		7
02	24.0068.0.000	Net	●●●	1
03	24.0067.0.000	Fan Rack		1
04	08.6850.5.000	Washer M5		4
05	See Page 3-37	Fan Assembly		—
06	24.6004.7.000	Pulley Cover	●	1
07	08.6000.4.070	Screw M4 x 70		4
08	08.6000.3.040	Screw M3 x 40		1
09	08.6000.3.016	Screw M3 x 16		4
10	24.6001.7.000	Head Rear Cover	●	1
11	24.0112.0.000	Cover Sound Deadener	●●●	1
12	—	Label	●●●	1
13	24.6003.0.000	Needle Bar Cover	●	1
14	22.0057.0.000	Cover Latch		1
15	08.6000.4.006	Screw M4 x 6		2
16	24.0154.0.000	Eye Shield	●●●	1
17	08.6200.4.008	Screw M4 x 8		2

* Modification — ISBH+I (Indexer)

LUBRICATION

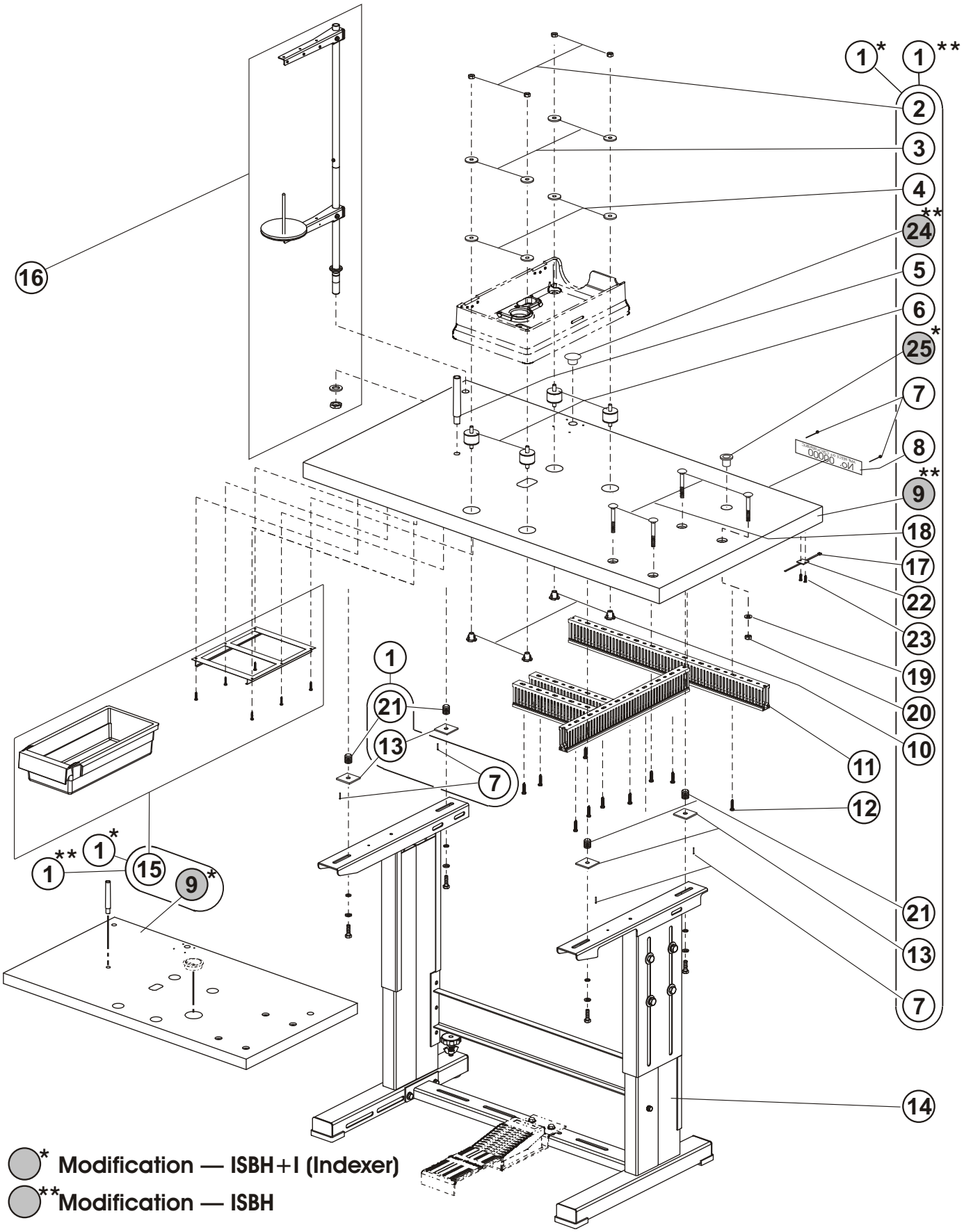


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LUBRICATION

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.0141.0.000	Tubing	●●●	1
02	24.0139.0.000	Lubricating Wick	●●●	1
03	22.0229.0.000	Straight Fitting		2
04	08.6000.4.006	Screw M4 x 6		2
05	22.0120.0.000	Holder		1
06	22.0104.0.000	Oil Gauge Reservoir		1
07	17.0095.1.329	Wheel	●●●	1
08	22.0108.0.000	Wick Holder		1
09	17.0027.1.799	Spring		1
10	17.0082.6.000	Clamp		1
11	08.6000.3.006	Screw M3 x 6		1
12	17.0094.5.310	Felt	●●●	1
13	22.0107.0.000	Worm Gear Felt Retainer		1
14	12.0008.3.023	Ty-wrap	●●●	1

TABLE



* Modification — ISBH+I (Indexer)

** Modification — ISBH

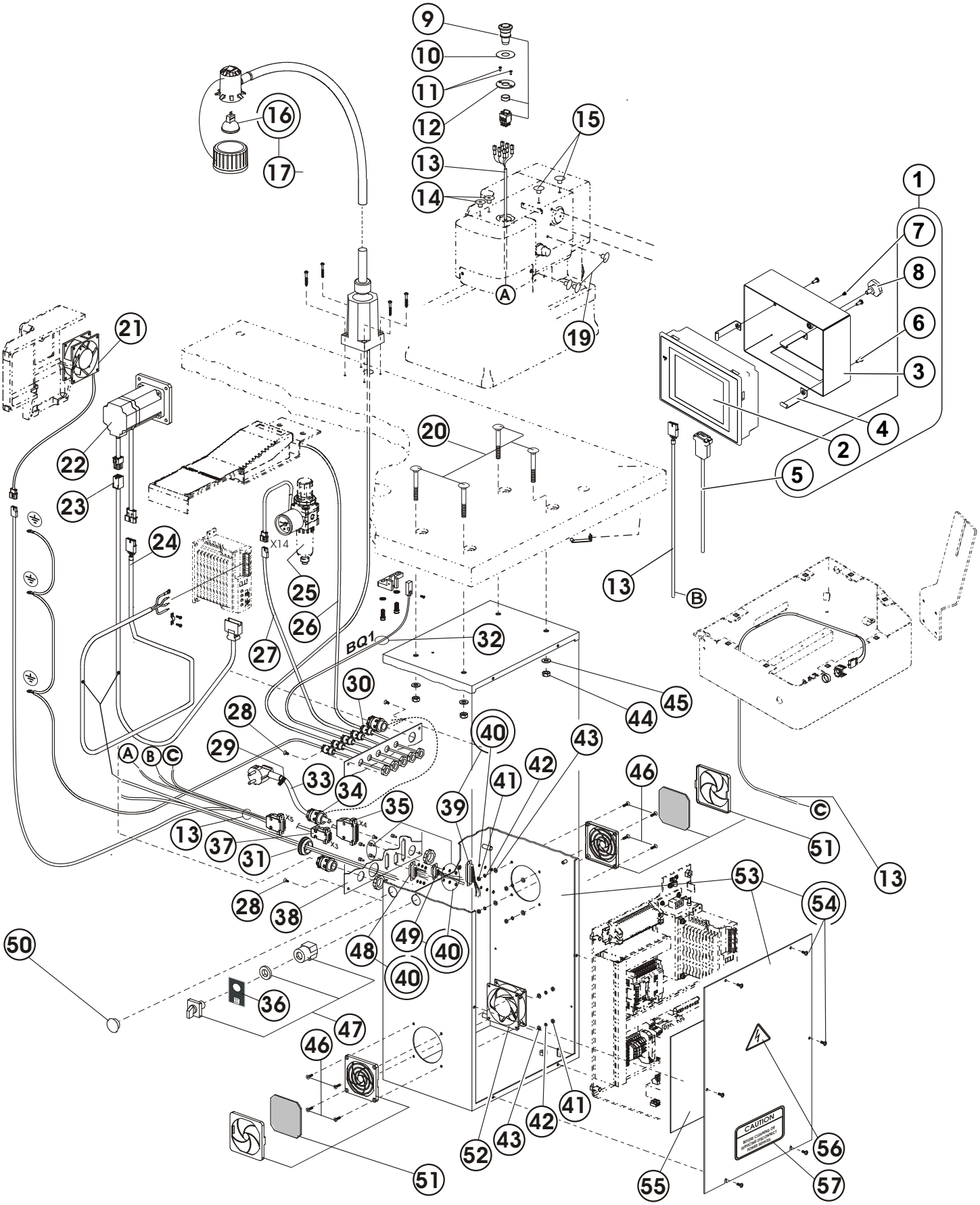
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TABLE

DET	PART NUMBER	DESCRIPTION		QTY.
01**	24.0142.0.050	Table Assembly ISBH		1
01*	04.9024.0.003	Table Assembly ISBH+I		1
02	08.6700.8.000	M8 Nut		(4)
03	17.0019.0.441	Washer		(4)
04	17.0095.1.272	Washer	●●●	(4)
05	12.0008.6.900	Machine Rest Table Pin		(1)
06	12.0008.6.801	Rubber Spring	●●●	(4)
07	12.1016.1.000	Nail	●●●	(6)
08	04.1416.0.003	Label “No. xxxx”	●	(1)
09**	24.0142.0.000	Table	●●●	(1)
09*	04.9024.0.901	Table ISBH+I	●●●	(1)
10	08.6742.8.000	M8 Nut		(4)
11	24.0069.9.063	Wire Raceway Kit	●●●	1
12	08.6663.5.025	Screw 4,8 - 25		10
13	17.0094.0.200	Washer	●●●	(4)
14	04.9000.2.123	Frame Kit		1
15	12.0008.6.901	Drawer Kit	●●●	(1)
16	22.0219.0.000	Thread Stand		1
17	12.0008.3.023	Ty-wrap	●●●	(1)
18	08.6532.8.050	Screw M8x50		(4)
19	08.6852.8.000	Washer		(4)
20	08.6702.8.000	Nut		(4)
21	08.6752.8.000	Nut		(4)
22	12.0008.4.058	Clip		(1)
23	08.6652.3.016	Screw 3 x 16		(2)
24**	12.0008.4.777	Plug	●●●	1**
25*	84.0005.7.135	Slide Bearing (OMRON)		(1)

*	Modification — ISBH+I (Indexer)
**	Modification — ISBH

ELECTRICAL (ISBH+I) - I

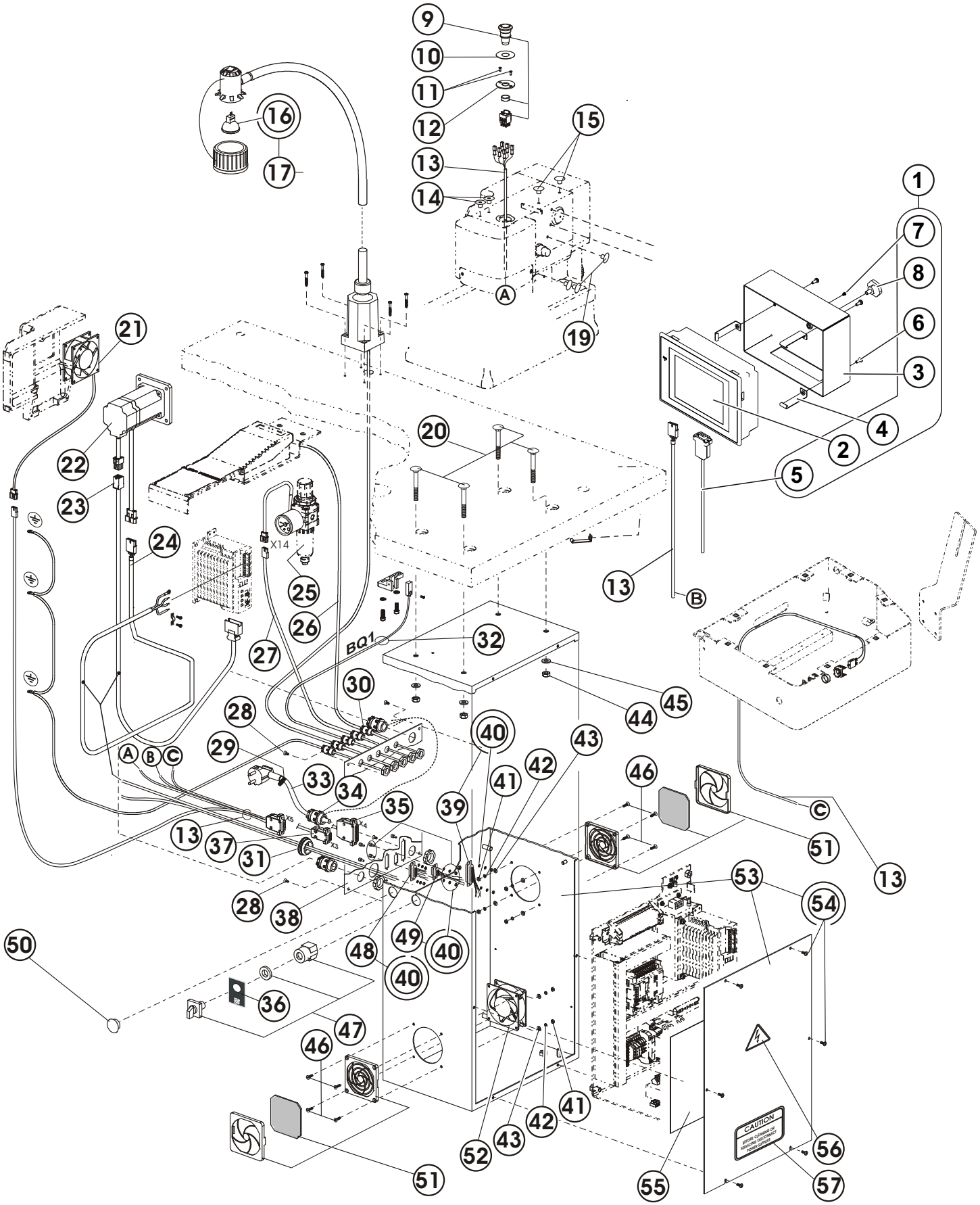


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ELECTRICAL (ISBH+I) - I

DET	PART NUMBER	DESCRIPTION		QTY.
01	03.5524.0.049	Panel Kit OMRON ISBH + I		1
02	24.8001.2.014	TOUCH SCREEN-OMRON	●●●	(1)
03	68.0358.0.800	PANEL COVER - OMRON		(1)
04	24.0168.0.000	DISPLAY HOLDER - OMRON		(3)
05	06.2400.0.002	CABLE DISPLAY		(1)
06	08.6032.4.010	SCREW M4-10		(3)
07	08.6662.3.006	SCREW		(1)
08	19.0014.7.003	SCREW-PANEL	●●●	(1)
09	12.0008.4.563	Emergency Stop Button	●●●	1
10	12.8000.0.047	Label	●●●	1
11	08.6102.3.008	Screw		2
12	24.0148.0.000	Emergency Stop Cover		1
13	06.2400.0.901	Cable X5		1
14	08.6215.4.006	Screw	●●●	2
15	12.0008.4.570	Plug	●●●	(4)
16	12.0008.4.679	Bulb 12V/12W	●●●	(1)
17	12.0008.4.403	Halogen Lamp Kit 12 V Assembly	●●●	1
19	12.0010.4.094	Plug	●●●	3
20	See Page 3-34	Screw M8 x 55		—
21	24.0059.9.069	Fan	●●●	1
22	12.0010.4.177	Servomotor OMRON	● ●● ●●●	1
23	12.0010.4.253	Encoder Cable		1
24	12.0010.4.254	Motor Power Cable		1
25	See Page 3-44	Pressure Gauge		—
26	See Page 3-40	Foot Cable		—
27	06.2400.0.008	Cable X14		1
28	08.6100.4.010	Screw		4
29	12.8000.0.112	Label Cable 230V 1PH	●●●	1
30	12.0008.4.207	Bushing PG7	●●●	5
31	12.0008.4.366	Plug PG 29	●●●	1
32	06.2400.0.009	End of Cycle Sensor BQ1	●● ●●●	2
33	12.0008.4.885	Cable Flexo		1
34	12.0008.4.231	Bushing PG13,5	●●●	1
35	06.2400.0.904	Cable X4 Indexer		1
36	12.8000.0.040	Label (Main Switch)		1
37	12.0008.3.604	Cable X3 Valve		1
38	04.9024.0.653	Connectors Plate ISBH+I		1
39	06.2400.0.902	Cable X5A		1
40	12.0008.4.710	Screw Kit		(3)
41	08.6702.4.000	Nut M4		8
42	08.6802.4.000	Washer		8
43	08.6852.4.000	Washer		8
44	See Page 3-34	Nut		—
45	See Page 3-34	Washer		—
46	08.6100.4.020	Screw		8

ELECTRICAL (ISBH+I) - I

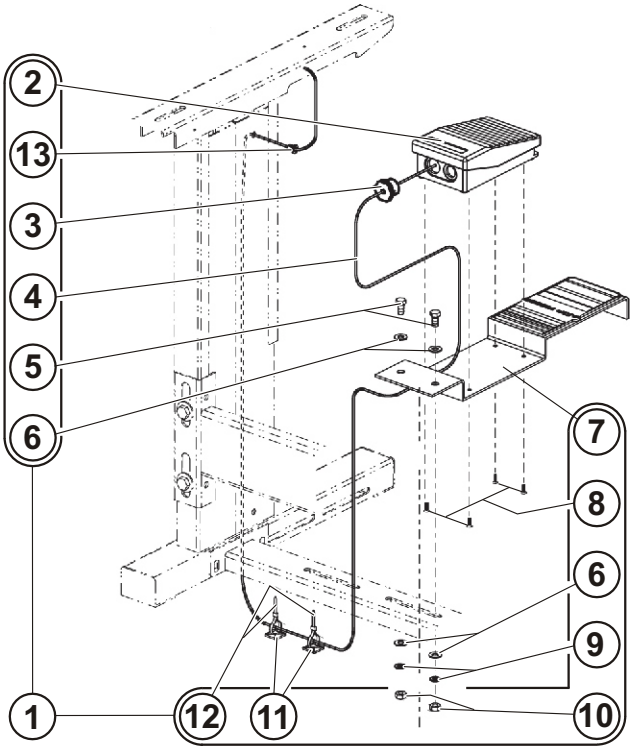


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ELECTRICAL (ISBH+I) - I

DET	PART NUMBER	DESCRIPTION	QTY.
47	12.0008.4.835	Switch ON — OFF	1
48	06.2400.0.913	Cable X4A	1
49	06.2400.0.910	Cable X3A	1
50	12.0008.4.216	Plug	1
51	12.0008.4.472	Fan Cover With Filter ●●●	2
52	24.0059.9.017	Fan assy.*	1
53	70.4165.1.125	Electrical Box	1
54	08.6032.4.010	Screw M4x10	(6)
55	12.8000.0.158	Electrical Diagram Label	1
56	12.0008.4.378	Label	1
57	00.2751.3.602	Label “CAUTION”	1

ELECTRICAL II

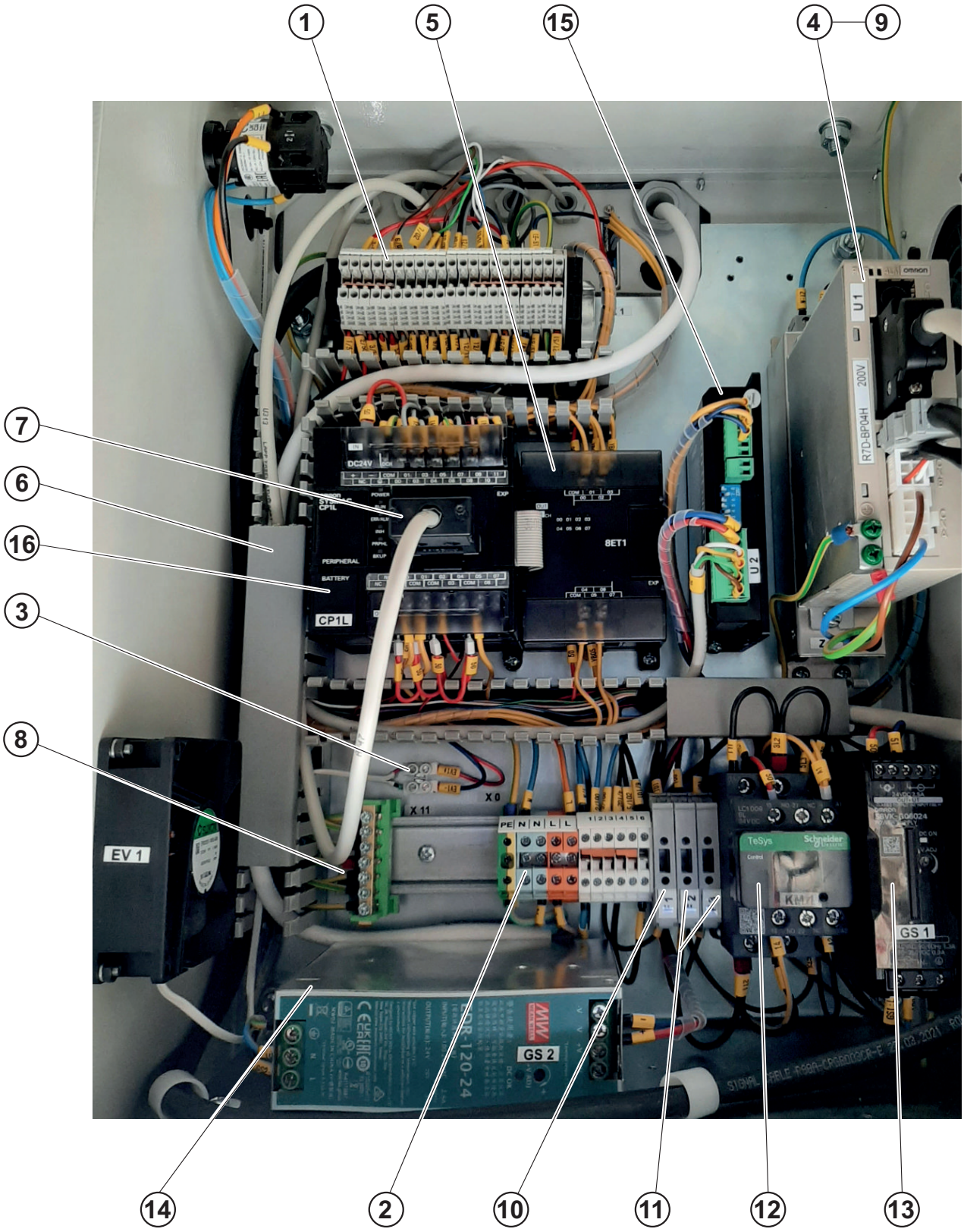


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ELECTRICAL II

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.0069.9.009	Pedal Assembly		1
02	06.8800.0.001	Pedal	●●●	(1)
03	12.0008.4.296	Bushing	●●●	(1)
04	06.2400.0.014	Cable		(1)
05	08.6312.8.020	Screw M8x20		(2)
06	08.6852.8.000	Washer M8		(4)
07	24.0097.0.000	Holder Pedal		(1)
08	08.6100.4.012	Screw M4x12		(4)
09	08.6802.8.000	Spring Washer M8		(2)
10	08.6702.8.000	Nut M8		(2)
11	12.0008.4.058	Clip		(2)
12	12.0008.4.072	Ty-wrap		(2)
13	12.0008.4.214	Bushing		(1)

ELECTRICAL III

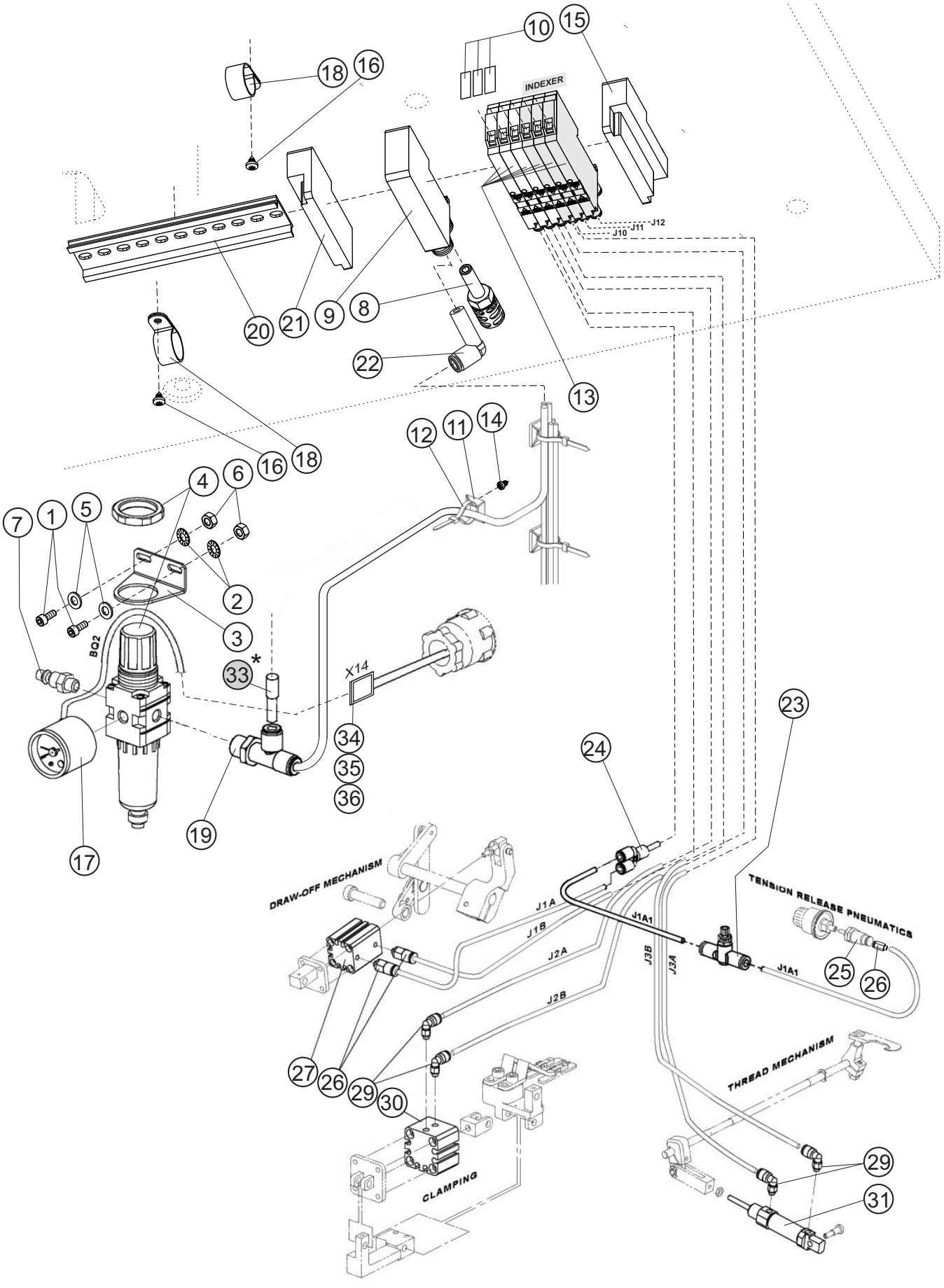


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ELECTRICAL III

DET	PART NUMBER	DESCRIPTION		QTY.
01		Terminal x1	(X1)	1
02		Terminal X0 - Power	(X0)	1
03		Terminal X12 - Fan	(X12)	1
04	24.8001.2.005	Servodrive	(U1)	
05	12.0010.4.071	Extension Block		
06	24.8001.2.001	PCL		1
07	12.0010.4.067	Port RS 232		1
08	12.0008.4.050	Bridge GND		1
09	12.0010.4.251	Filter	(Z1)	1
10	12.0008.4.665	Fuse T2A	(F1)	1
11	12.0008.4.664	Fuse T10A	(F2, F3)	2
12	12.0008.4.833	Contactor	(KM1)	1
13	12.0010.4.168	Power 24V	(GS1)	1
14	12.0010.4.516	Power	(GS2)	1
15	12.0010.4.500	Driver	(U2)	1
16	12.0010.4.163	Battery PLC		1

PNEUMATICS



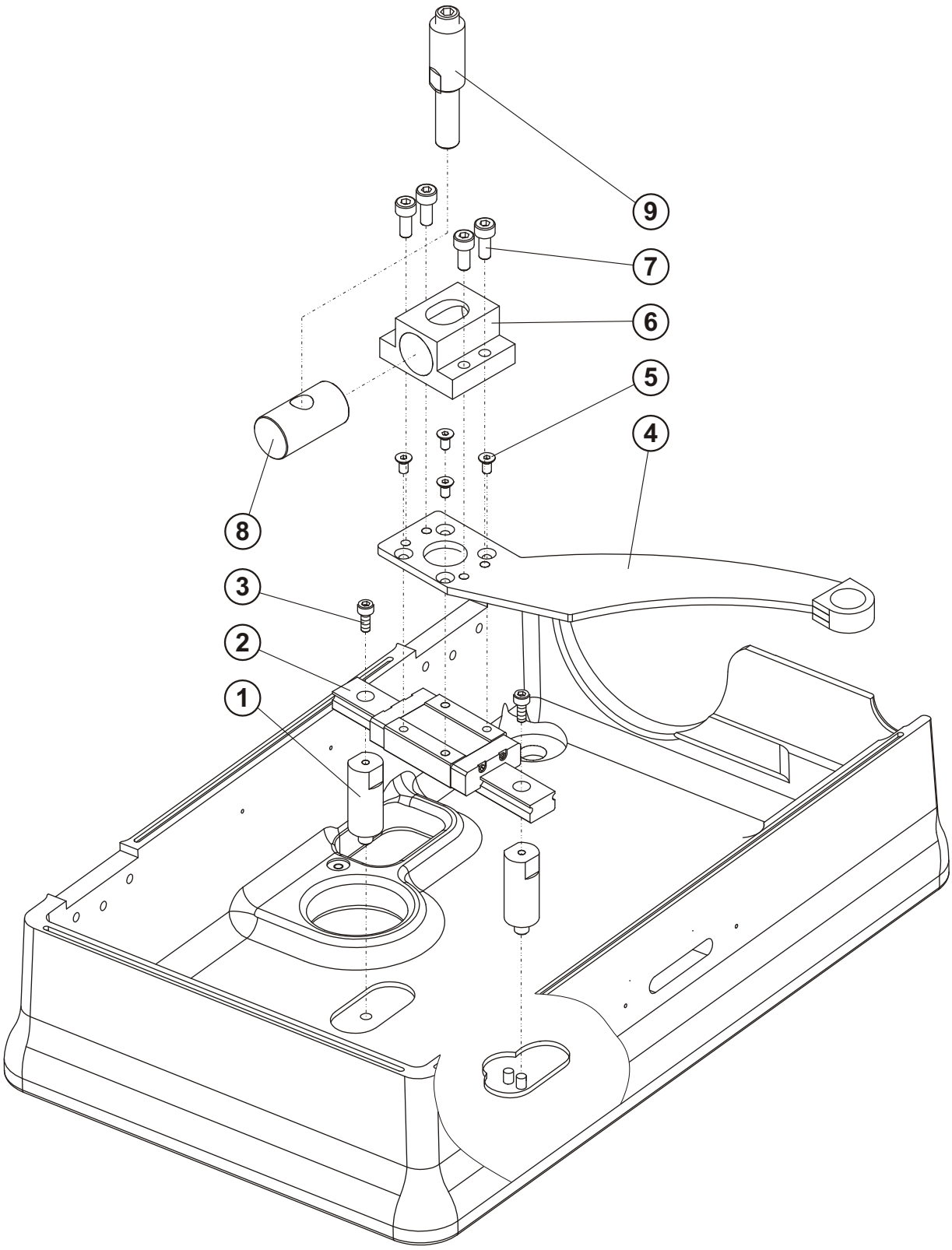
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PNEUMATICS

DET	PART NUMBER	DESCRIPTION		QTY.
01	08.6000.5.012	Screw M5x12		2
02	08.6832.5.000	Washer M5		2
03	12.0010.3.138	Regulator Holder		1
04	12.0010.3.137	Regulator		1
05	08.6850.5.000	Washer M5		2
06	08.6700.5.000	Nut M5		2
07	12.0008.3.420	Connector		1
08	12.0010.3.030	Silencer		1
09	12.0008.3.829	Air Supply Block Assembly		1
10	12.8000.0.016	Label Kit		1
11	12.0008.4.058	Clip	●●●	3
12	12.0008.3.023	Ty-wrap	●●●	3
13	12.0008.3.828	Pneumatic Valve		6
14	08.6662.3.006	Screw		2
15	12.0008.3.830	Rail Stopper		1
16	08.6683.4.007	Screw		2
17	12.0008.3.418	Pressure Gauge		1
18	12.0008.4.280	Clamp		2
19	12.0010.3.032	Connector		1
20	12.0008.3.832	DIN Rail		1
21	12.0008.3.831	Rail Stopper		1
22	12.0010.3.031	Connector	●●●	1
23	12.0010.3.029	Speed Controller	●●●	1
24	12.0010.3.159	Connector		1
25	12.0008.3.413	Cylinder		1
26	12.0010.3.027	Connector		3
27	12.0008.3.433	Knife Cylinder		1
29	12.0010.3.028	Connector	●●●	4
30	12.0008.3.412	Clamp Cylinder	●	1
31	24.0050.0.000	Trimmer Cylinder		1
32	24.0145.1.000	Air Tubing Kid	●●●	1
33*	12.0008.3.437	Plug		1
34	12.0008.4.280	Cord Clam		1
35	08.6852.4.000	Washer M4		1
36	08.6683.4.007	Screw M4x7		1

* Modification — ISBH

INDEXER LINEAR GUIDE

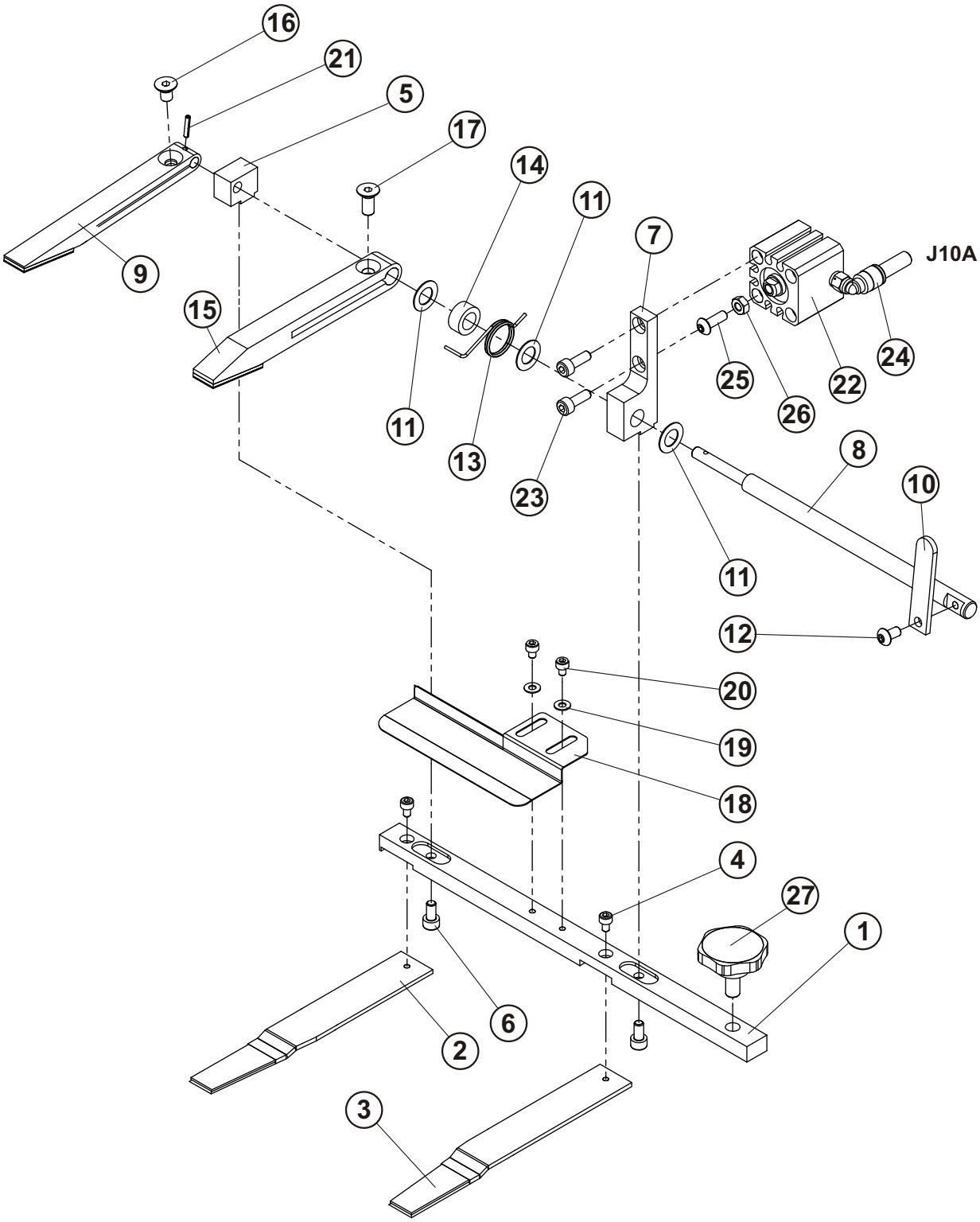


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INDEXER LINEAR GUIDE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4087.0.000	Stud		2
02	12.2070.1.012	Linear Guide		1
03	08.6000.3.008	Screw M3-8		2
04	24.4067.1.000	Cross Lever		1
05	08.6100.3.006	Screw M3-6		4
06	24.4026.1.000	Pillow Block	●	1
07	08.6000.4.010	Screw M4-10		4
08	24.4027.0.000	Plastic Joint	●●●	1
09	24.4028.1.000	Stud Assembly		1

INDEXER CLAMPING ASSEMBLY

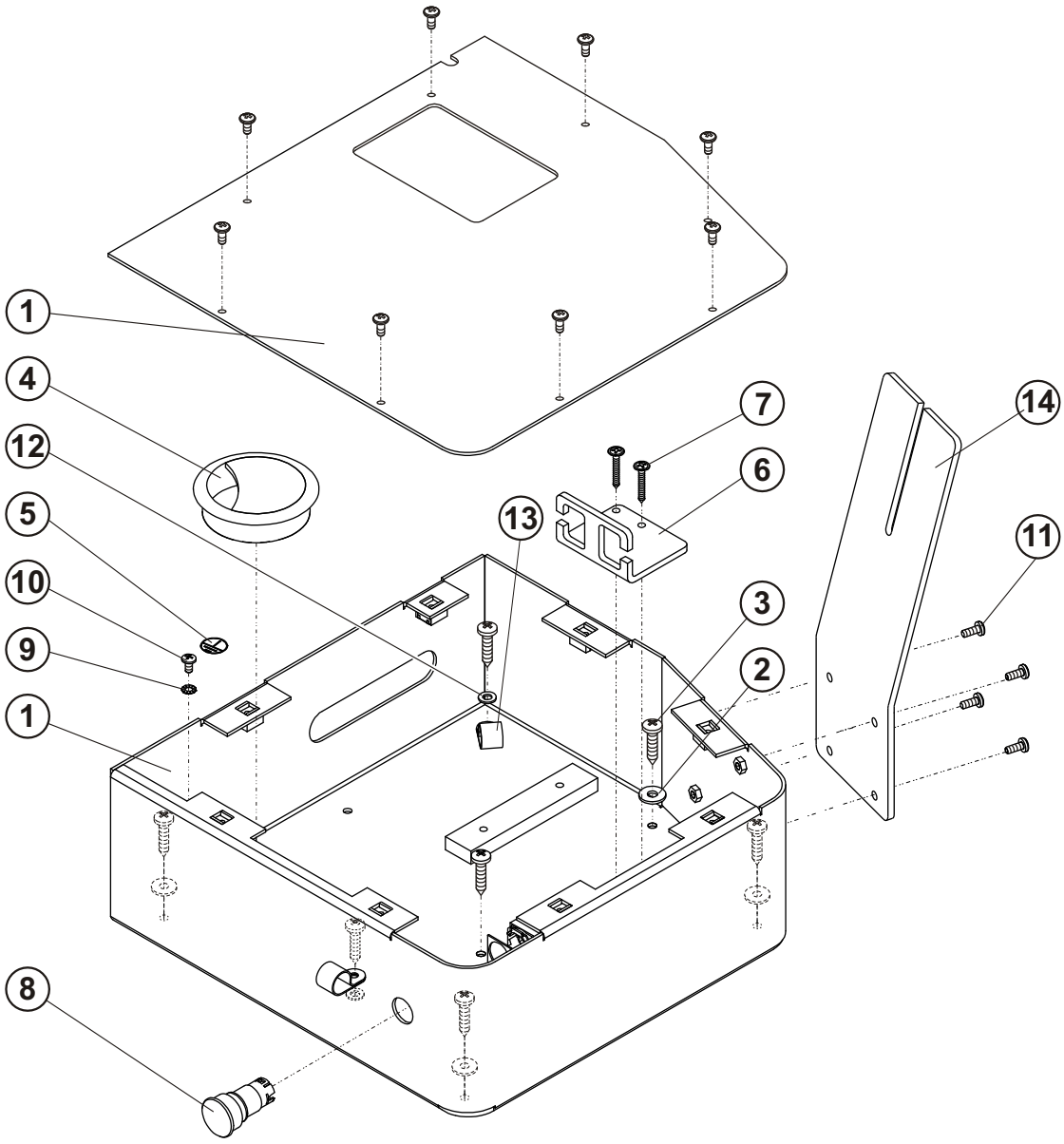


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INDEXER CLAMPING ASSEMBLY

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4005.1.000	Clamp Rail		1
02	24.4006.1.000	Clamping Mat Left		1
03	24.4007.1.000	Clamping Mat Right		1
04	08.6000.3.005	Screw M3-5		2
05	24.4016.0.000	Holder Cylinder	●	1
06	08.6000.4.008	Screw M4-8		2
07	24.4013.0.000	Holder Cylinder	●	1
08	24.4009.0.000	Shaft		1
09	24.4017.1.000	Clamp Foot Left	● ●●●	1
10	24.4011.0.000	Clamping Lever		1
11	08.6887.8.000	Washer		3
12	08.6200.4.008	Screw M4-8		1
13	24.4010.0.000	Spring		1
14	24.4014.0.000	Bushing	●●●	1
15	24.4015.1.000	Clamp Foot Right	● ●●●	1
16	08.6100.5.008	Screw M5-8		1
17	08.6100.5.012	Screw M5-12		1
18	24.4008.0.000	Material Guide		1
19	08.6850.3.000	Washer 3,2		2
20	08.6000.3.004	Screw M3-4		2
21	12.1014.0.004	Pin 2x8		1
22	12.0008.3.498	Cylinder	● ●●●	1
23	08.6000.4.012	Screw M4-12		2
24	12.0010.3.028	Connector	●● ●●●	1
25	08.6200.4.010	Screw M4-10		1
26	08.6700.4.000	Nut M4		1
27	24.4019.0.000	Screw	●●●	1

INDEXER ASSEMBLY

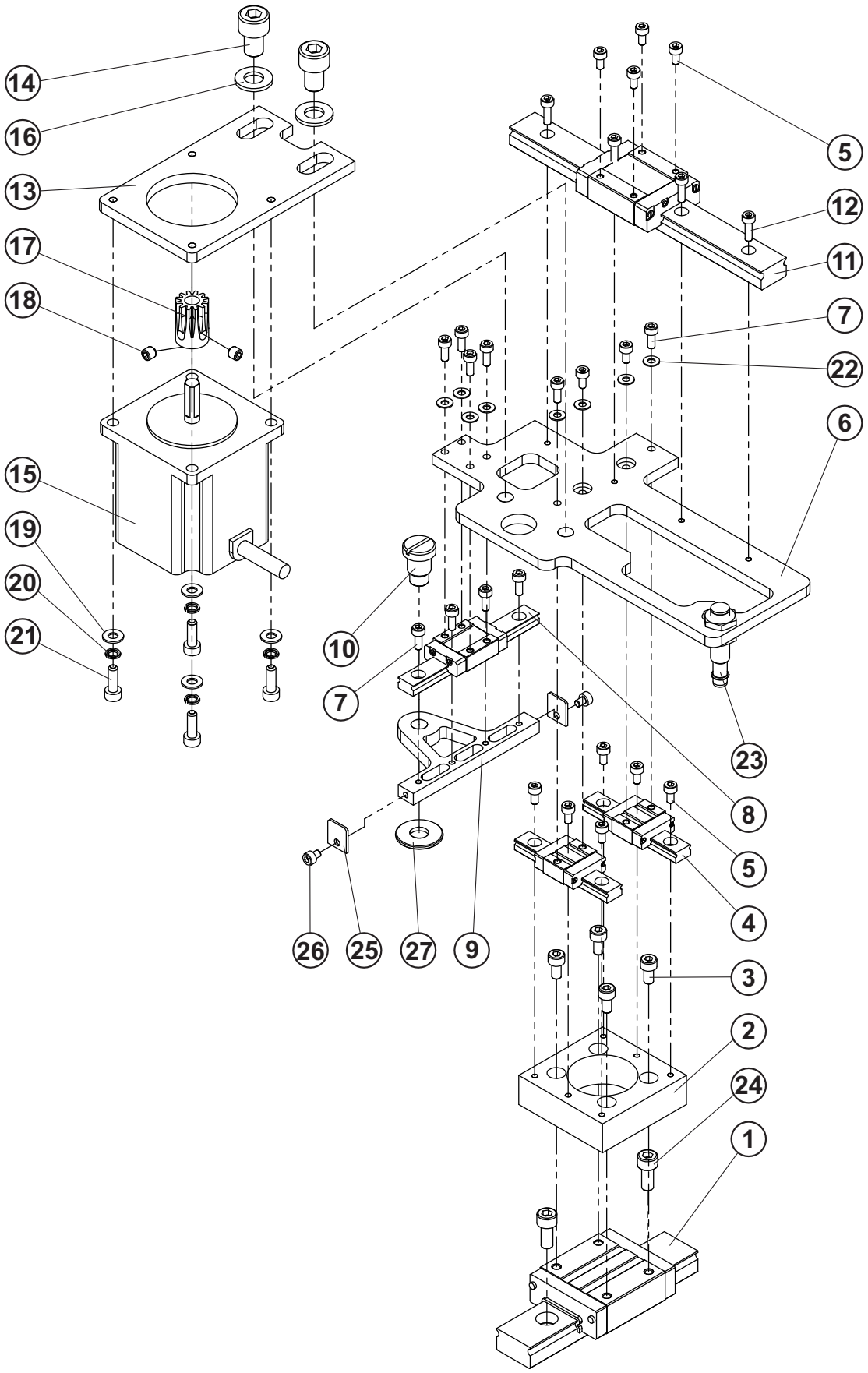


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INDEXER ASSEMBLY

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4060.1.050	Indexer Cover Assembly		1
02	08.6842.5.000	Washer 5		4
03	08.6663.5.025	Screw 4,8-25		7
04	12.0008.4.631	Cable Bushing	●●●	1
05	12.0008.4.052	Label Ground	●●●	1
06	19.0082.3.433	Holder		1
07	08.6676.4.025	Sscrew		2
08	12.0008.4.742	Button	●●●	1
09	08.6832.4.000	Washer M4		1
10	08.6032.4.008	Screw M4-8		1
11	08.6032.4.010	Screw M4-10		4
12	08.6852.5.000	Washer 5,3		2
13	07.6600.0.006	Clamp Cable	●●●	2
14	24.4088.0.000	Display Holder		1

INDEXER GUIDE ASSEMBLY

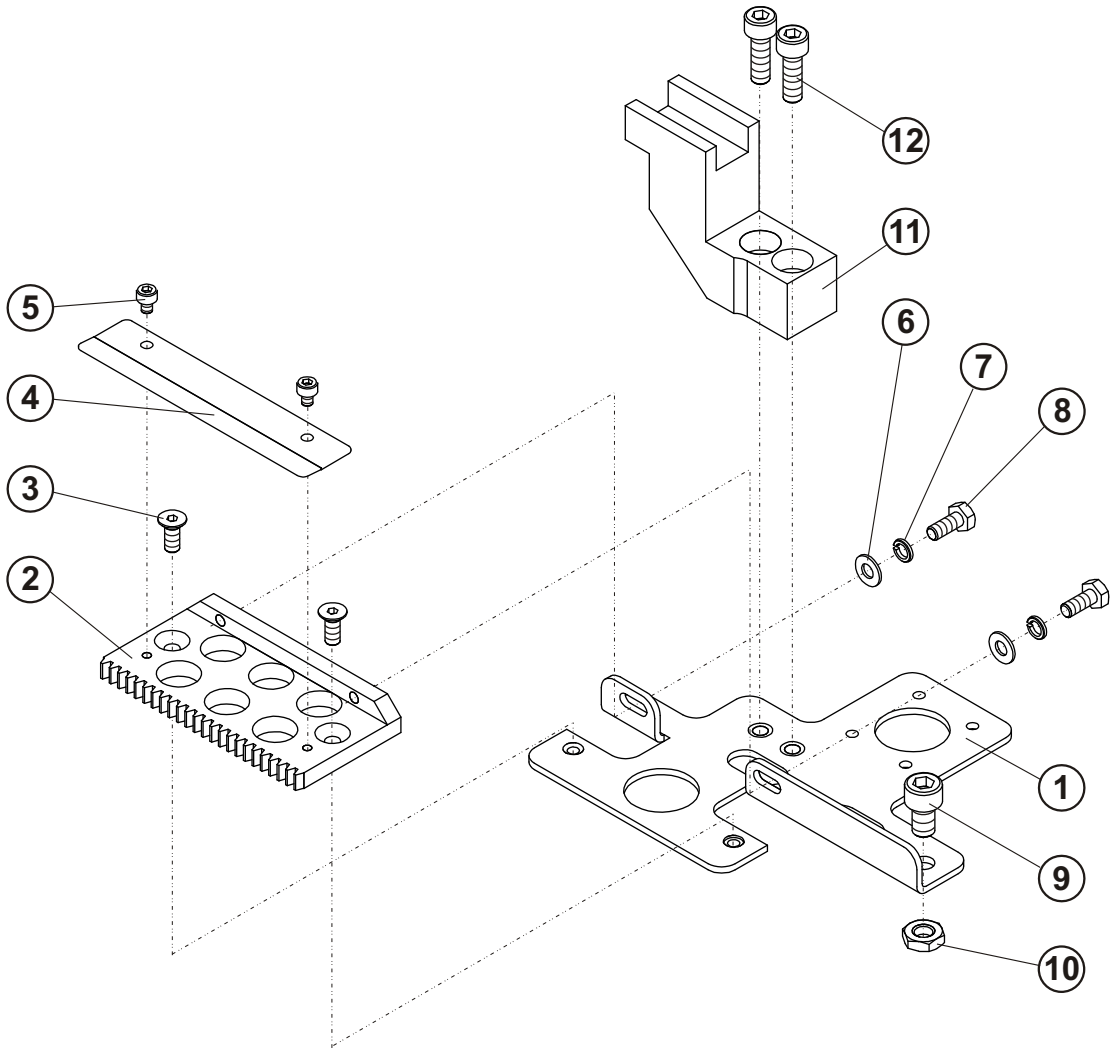


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INDEXER GUIDE ASSEMBLY

DET	PART NUMBER	DESCRIPTION	QTY.
01	12.2070.1.013	Guide	1
02	24.4061.1.600	Holder ●	1
03	08.6000.4.008	Screw M4-8	4
04	12.2070.1.014	Guide	2
05	08.6000.3.006	Screw M3-6	12
06	24.4062.1.000	Bracket ●	1
07	08.6000.3.008	Screw M3-8	10
08	12.2070.1.015	Guide	1
09	24.4065.1.000	Holder	1
10	24.4081.0.000	Stud	1
11	12.2070.1.016	Guide	1
12	08.6000.3.010	Screw M3-10	4
13	24.4076.0.000	Motor Bracket ●	1
14	08.6000.8.012	Screw M8-12	2
15	06.2400.0.905	Motor - Indexer ● ●● ●●●	1
16	08.6850.8.000	Washer 8	2
17	24.4075.0.000	Gear	1
18	08.6400.5.005	Screw M5-5	2
19	08.6850.4.000	Washer M4	4
20	08.6800.4.000	Washer 4	4
21	08.6000.4.012	Screw M4-12	4
22	08.6850.3.000	Washer 3,2	8
23	12.0010.4.093	Sensor BQ 10	1
24	08.6000.5.012	Screw M5-12	2
25	24.4082.0.000	Stop	2
26	08.6000.3.004	Screw M3-4	2
27	24.0546.0.000	Washer	1

CLAMPING FEED STRAIGHT

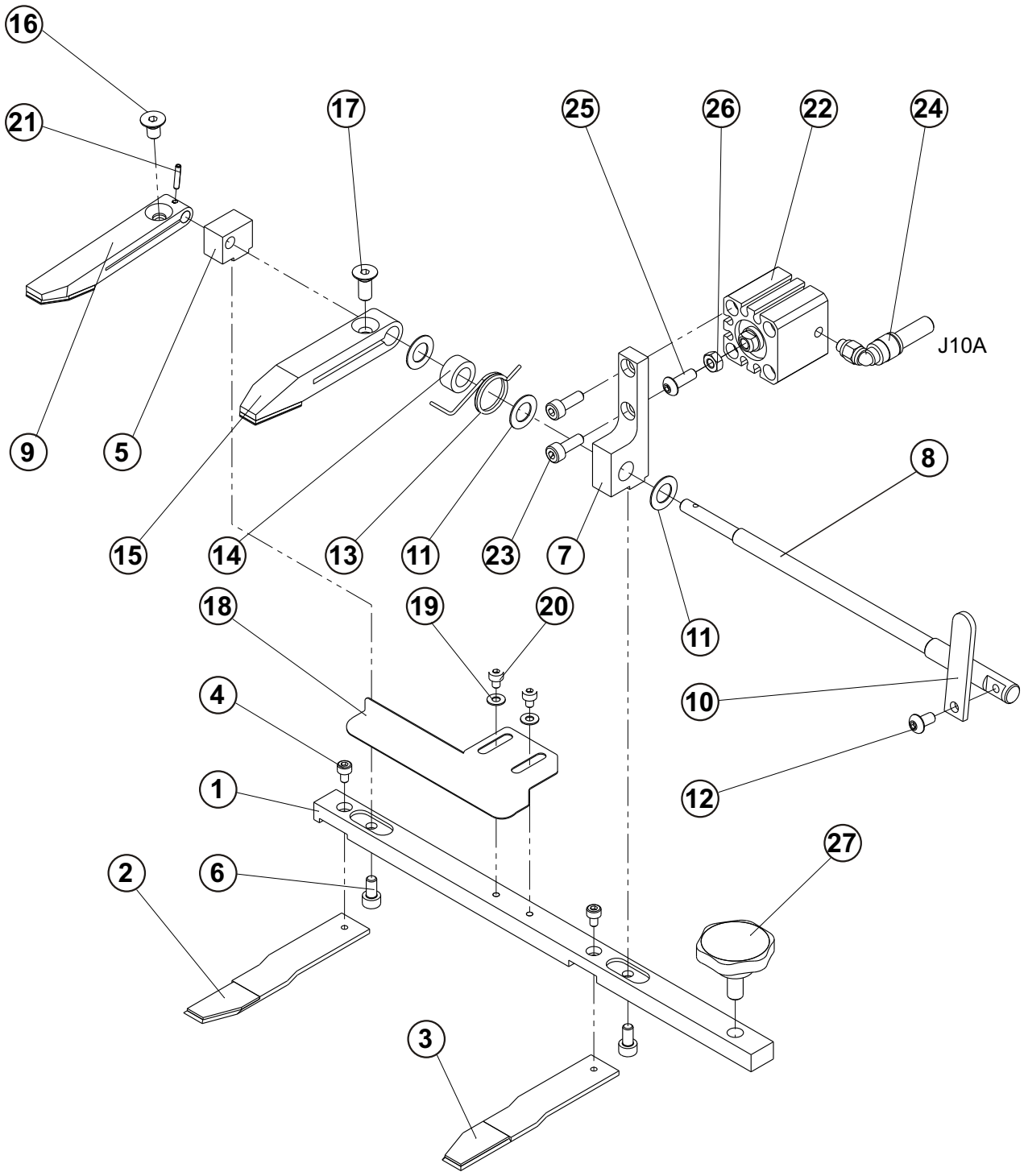


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CLAMPING FEED STRAIGHT

DET	PART NUMBER	DESCRIPTION	QTY.
01	24.4064.2.000	Support Plate	1
02	24.4077.1.000	Rack	1
03	08.6100.4.010	Screw M4-10	2
04	24.4074.0.000	Gear Cover	1
05	08.6000.3.004	Screv M3-4	2
06	08.6850.4.000	Washer M4	2
07	08.6800.4.000	Washer 4	2
08	08.6310.4.010	Screw M4x10	2
09	08.6000.6.010	Screw M6-10	1
10	08.6710.6.000	Nut M6	1
11	24.4029.1.000	Clamp Feet Holder •	1
12	08.6000.5.020	Screw M5-20	2

INDEXER CLAMPING - ANGLE

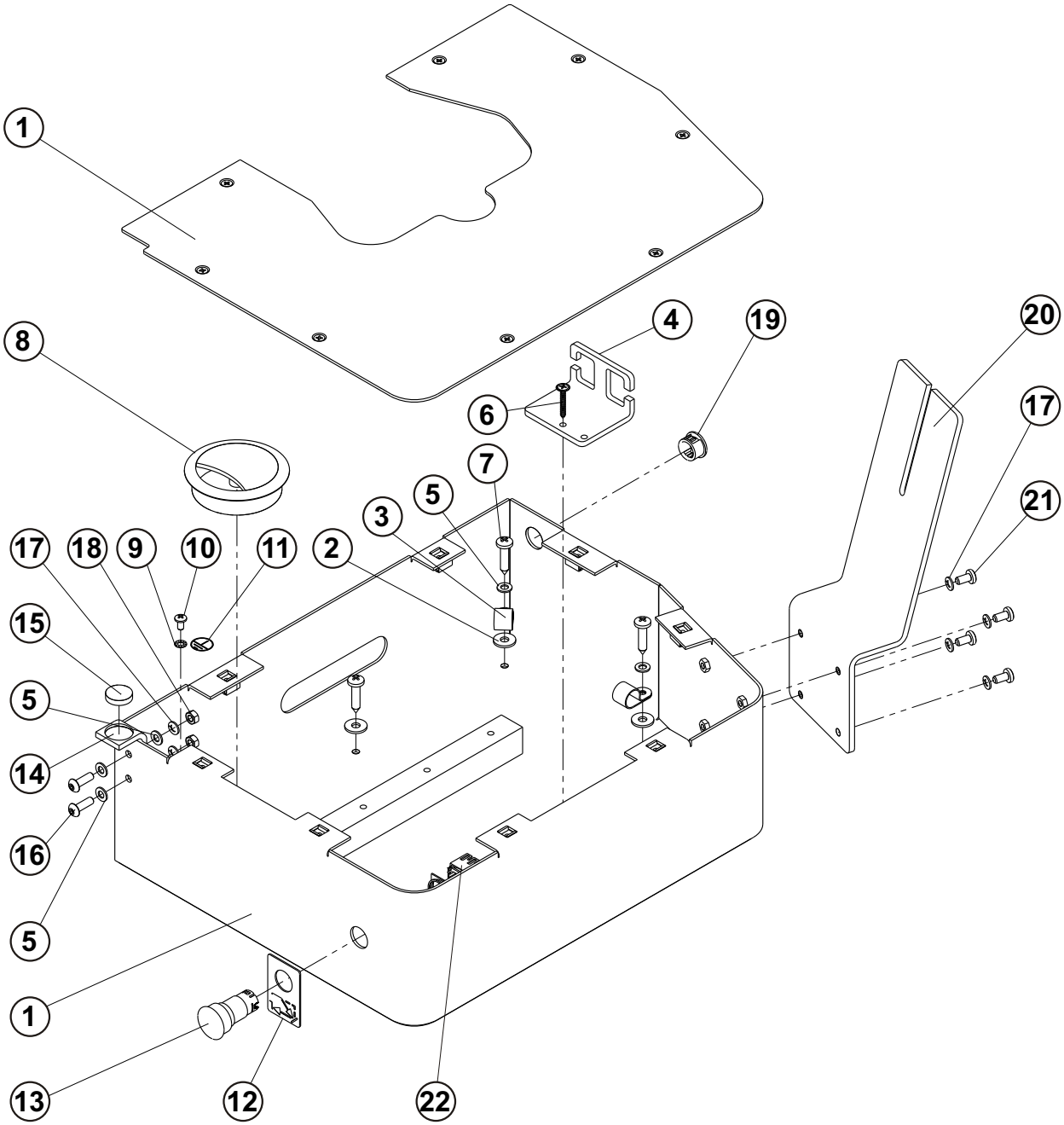


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INDEXER CLAMPING - ANGLE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4101.0.000	Clamp Rail		1
02	24.4006.2.000	Clamping MAT-Left		1
03	24.4007.2.000	Clamping MAT-Right		1
04	08.6000.3.005	Screw M3 x 5		2
05	24.4016.0.000	Holder Cylinder	•	1
06	08.6000.4.008	Screw M4 x 8		2
07	24.4013.0.000	Holder Cylinder	•	1
08	24.4009.1.000	Shaft		1
09	24.4017.2.000	Clamp Foot-Left	• •••	1
10	24.4011.0.000	Clamping Lever		1
11	08.6887.8.000	Washer		3
12	08.6200.4.008	Screw M4 x 8		1
13	24.4010.0.000	Spring		1
14	24.4014.0.000	Bushing	•••	1
15	24.4015.2.000	Clamp Foot-Right	• •••	1
16	08.6100.5.008	Screw M5 x 8		1
17	08.6100.5.012	Screw M5 x 12		1
18	24.4008.1.000	Material Guide		1
19	08.6850.3.000	Washer 3,2		2
20	08.6000.3.004	Screw M3 x 4		2
21	12.1014.0.004	Pin 2x8		1
22	12.0008.3.498	Cylinder	• •••	1
23	08.6000.4.012	Screw M4 x 12		2
24	12.0010.3.028	Connector	•• •••	1
25	08.6200.4.010	Screw M4 x 10		1
26	08.6700.4.000	Nut M4		1
27	24.4019.0.000	Screw		1

INDEXER COVER - ANGLE

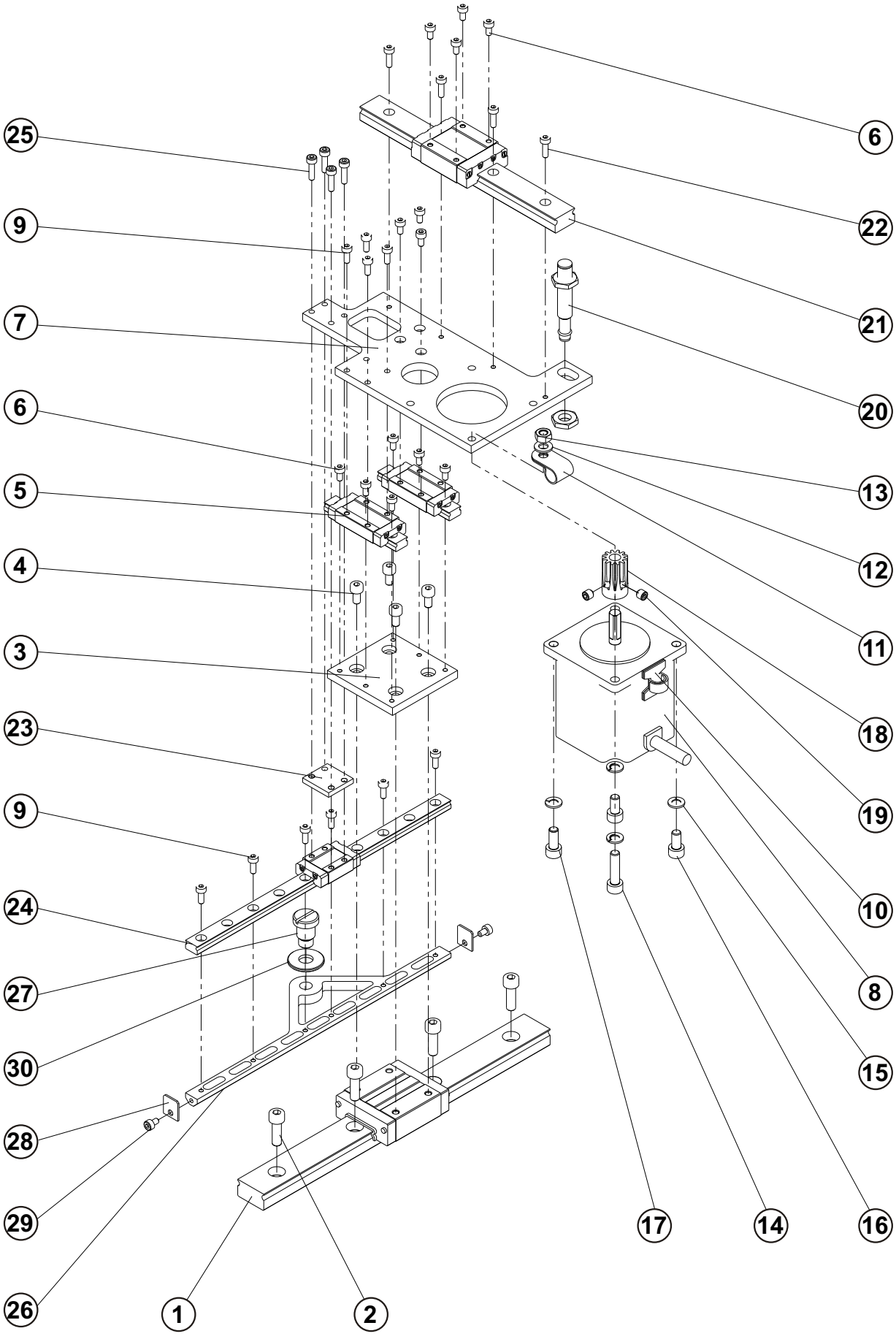


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INDEXER COVER - ANGLE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4060.3.050	Indexer Cover Assy.		1
02	08.6842.5.000	Washer 5		6
03	07.6600.0.006	Clamp Cable	●●●	2
04	19.0082.3.433	Holder		1
05	08.6852.5.000	Washer 5,3		6
06	08.6676.4.025	Screw 4 x 25		1
07	08.6663.5.025	Screw 4,8 x 25		6
08	12.0008.4.631	Cable Bushing	●●●	1
09	08.6832.4.000	Washer M4		1
10	08.6032.4.008	Screw M4 x 8		1
11	12.0008.4.052	Label Ground	●●●	1
12	12.8000.0.048	Label-Interupt Cycle	●●●	1
13	12.0008.4.742	Button	●●●	1
14	11.5009.0.000	Table Support		1
15	19.0094.5.413	Felt	●●●	1
16	08.6202.5.016	Screw M5 x 16		2
17	08.6802.5.000	Spring Washer M5		6
18	08.6702.5.000	Nut M5		2
19	12.0008.4.222	Bushing Snap HV12	●●●	1
20	24.4104.0.000	Display Bracket		1
21	08.6032.5.010	Screw M5 x 10		4
22	12.0008.4.698	Switch Unit NO		1

INDEXER GUIDE - ANGLE

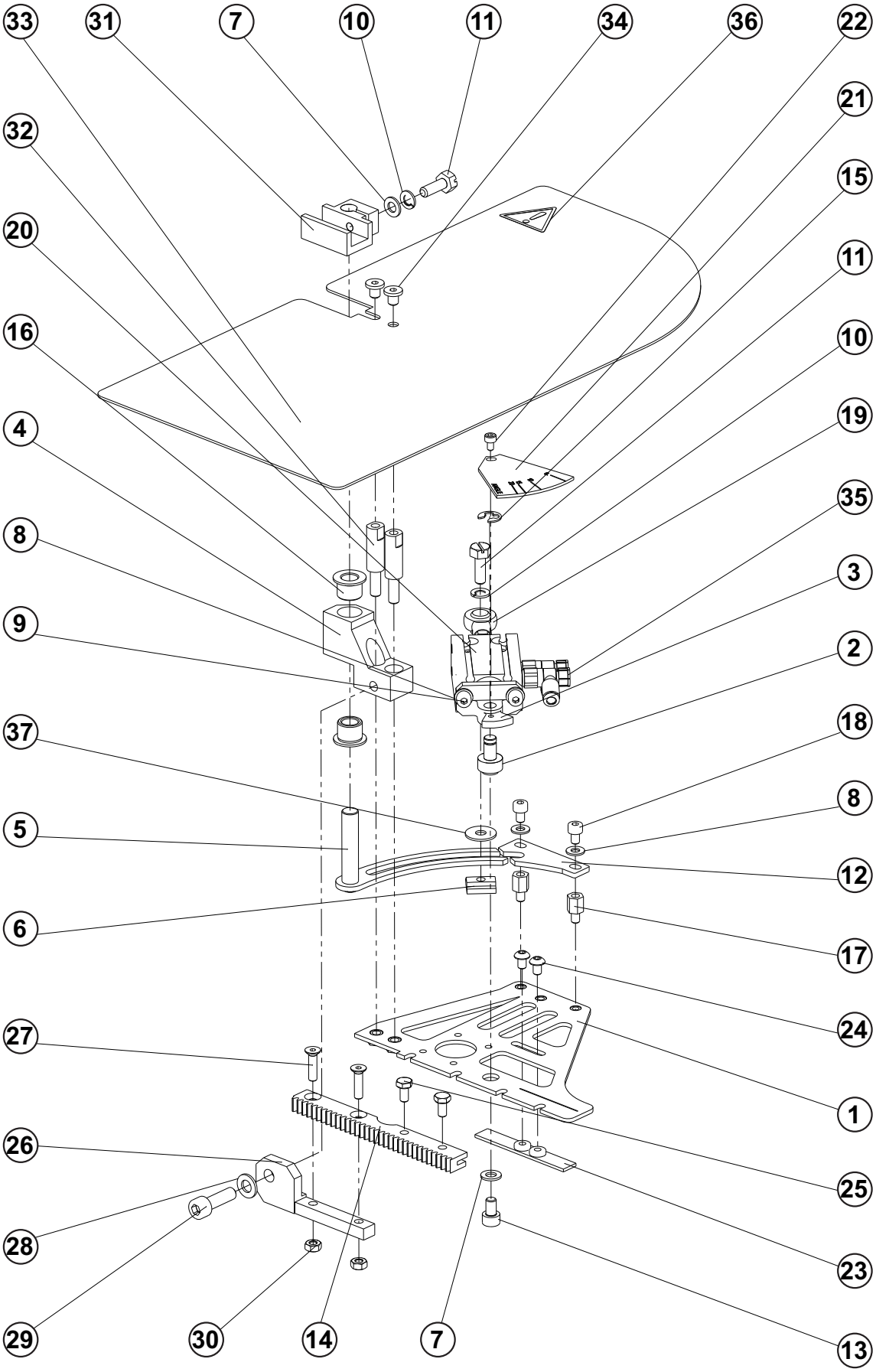


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INDEXER GUIDE - ANGLE

DET	PART NUMBER	DESCRIPTION	QTY.
01	12.2070.1.032	Guide	1
02	08.6000.5.016	Screw M5 x 16	4
03	24.4061.2.000	Holder ●	1
04	08.6000.4.008	Screw M4 x 8	4
05	12.2070.1.019	Linear Guide	2
06	08.6000.3.006	Screw M3 x 6	13
07	24.4062.3.000	Bracket ●	1
08	06.2400.0.905	Motor - Indexer ● ●● ●●●	1
09	08.6000.3.008	Screw M3 x 8	10
10	12.0008.4.862	Clips-Metal ● ●●●	1
11	12.0008.4.225	Clamp ●●●	1
12	08.6850.5.000	Washer 5,3	1
13	08.6700.5.000	Nut M5	1
14	08.6000.5.020	Screw M5 x 20	1
15	08.6800.5.000	Spring Washer M5	4
16	08.6000.5.010	Screw M5 x 10	2
17	08.6000.5.012	Screw M5 x 12	1
18	24.4075.2.000	Gear	1
19	08.6400.5.004	Screw M5 x 4	2
20	12.0010.4.025	Sensor	1
21	12.2070.1.016	Guide	1
22	08.6000.3.010	Screw M3 x 10	4
23	24.4089.0.000	Distance ●	1
24	12.2070.1.033	Linear Guide	1
25	08.6000.3.012	Screw M3 x 12	4
26	24.4065.2.000	Holder	1
27	24.4081.0.000	Stud	1
28	24.4082.0.000	Stop	2
29	08.6000.3.005	Screw M3 x 5	2
30	24.0546.0.000	Washer	1

CLAMP FEET - ANGLE

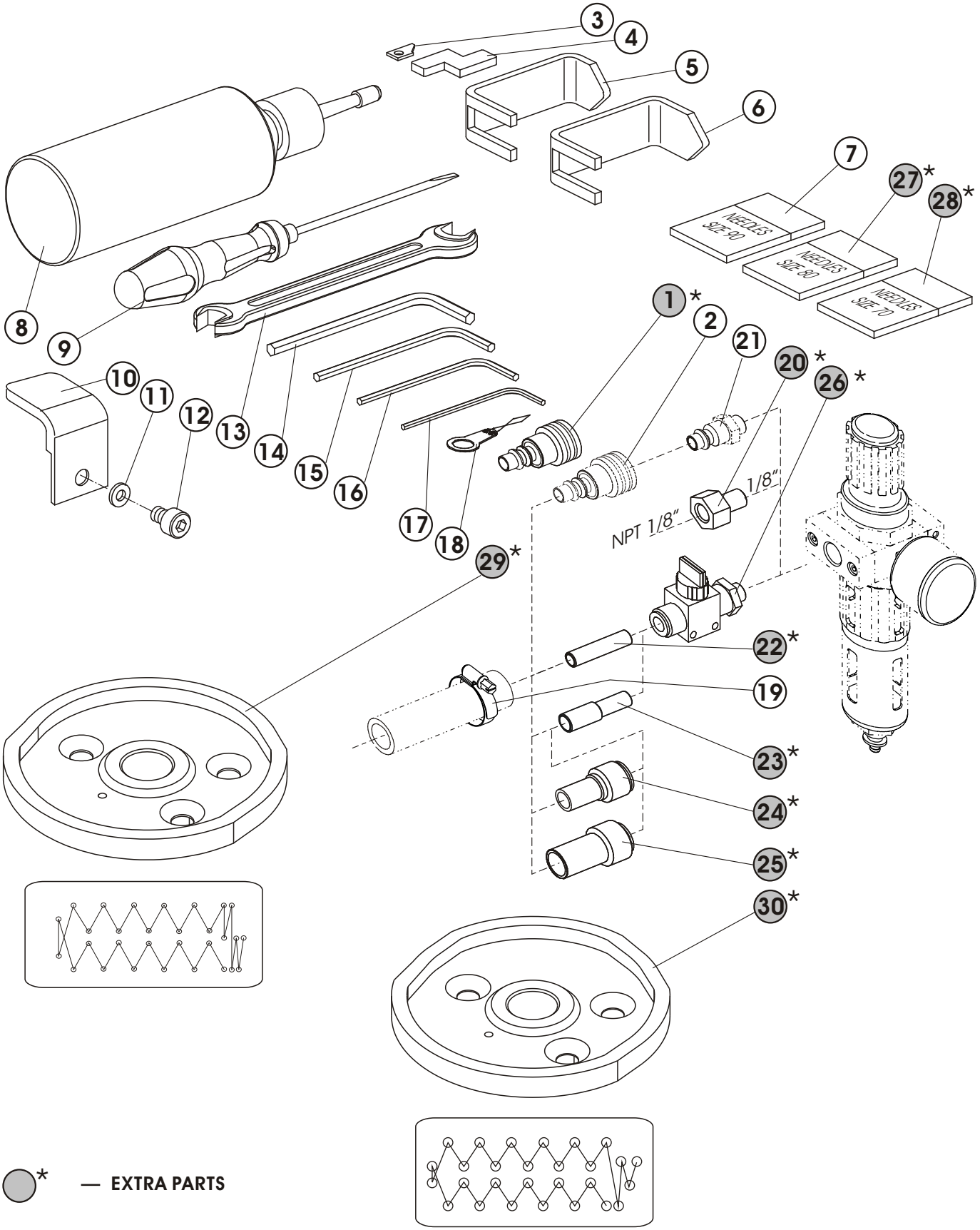


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CLAMP FEET - ANGLE

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4064.3.000	SUPPORT PLATE		1
02	24.4080.2.000	STUD		1
03	24.4086.1.000	CYLINDER BRACKET	●	1
04	24.4063.2.000	HOLDER; ANGLE CLAMP	●	1
05	24.4032.1.000	LEVER		1
06	24.4085.0.000	NUT		1
07	08.6850.5.000	WASHER 5,3		2
08	08.6850.4.000	WASHER M4		4
09	08.6000.4.008	SCREW M4-8		2
10	08.6800.5.000	SPRING WASHER M5		2
11	17.0014.1.226	SCREW		2
12	24.4084.0.000	LOCK LEVER		1
13	08.6000.5.008	SCREW M5 x 8		1
14	24.4077.3.000	RACK		1
15	17.0027.4.083	E-CLIP 5		1
16	24.4030.0.000	BUSHING		2
17	24.4079.0.000	STUD		2
18	08.6000.4.006	SCREW M4-6		2
19	12.0010.6.210	ROD END	●	1
20	12.0010.3.061	CYLINDER	● ●●●	1
21	24.4098.1.000	GAUGE		1
22	08.6000.3.005	SCREW M3-5		1
23	24.4096.0.000	SENSOR PLATE		1
24	08.6200.4.006	SCREW M4-6		2
25	08.6312.4.008	SCREW M4-8		2
26	24.4097.0.000	BRACE		1
27	08.6100.4.016	SCREW M4-16		2
28	08.6852.6.000	WASHER 6,4		1
29	08.6002.6.020	SCREW M6-20		1
30	08.6700.4.000	NUT M4		2
31	24.4029.3.000	CLAMP FEET HOLDER		1
32	24.4099.0.000	STUD		2
33	24.4100.0.000	COVER PLATE	●	1
34	08.6050.5.006	SCREW M5-6		2
35	12.0010.3.047	SPEED CONTR. AS	●●●	2
36	17.0097.5.174	LABEL- WARNING	●●●	1
37	15.1142.0.400	WASHER 5/15		1

ACCESSORIES



* — EXTRA PARTS

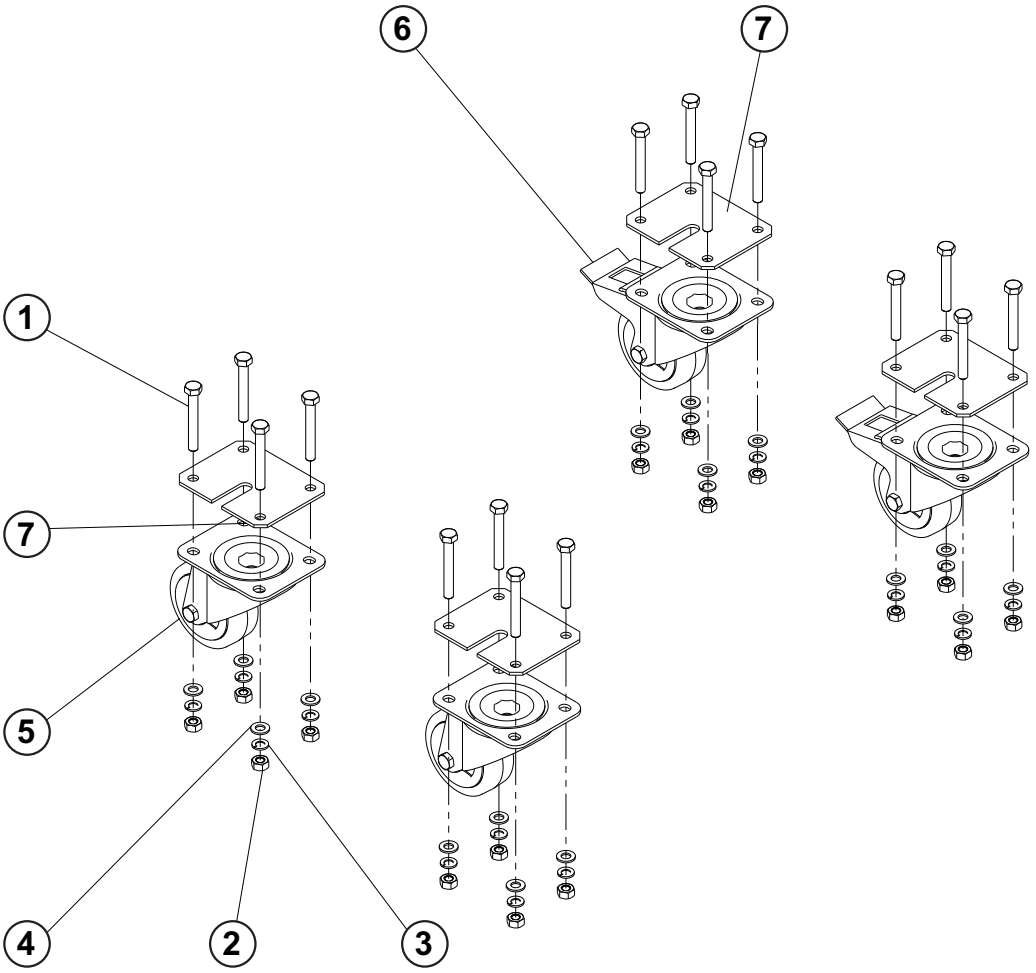
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ACCESSORIES

DET	PART NUMBER	DESCRIPTION	QTY.
01*	12.0008.3.607	Connector Dia 8	1*
02	12.0008.3.608	Connector Dia 10	1
03	20.0094.0.000	Trimmer Knife	1
04	22.0209.0.000	Looper Gauge	1
05	24.0030.0.000	Main Shaft Pulley Bracket	1
06	24.0024.0.000	Needle Bar Shaft Pulley Bracket	1
07	02.0750.2.110	Needles, Size 90	10
08	05.1322.0.000	Oiler ●●●	1
09	12.0008.6.001	Screwdriver	1
10	22.0213.0.000	Bracket	1
11	08.6850.4.000	M4 Washer	1
12	08.6000.4.005	M4 x 5 Screw	1
13	12.0008.6.109	Wrench	1
14	12.0008.6.102	Allen Key Wrench 4	1
15	12.0008.6.101	Allen Key Wrench 3	1
16	12.0008.6.112	Allen Key Wrench 2-1/2	1
17	12.0008.6.100	Allen Key Wrench 2	1
18	12.0008.6.105	Needle Threader	1
19	12.0008.3.251	Air Tubing Clamp	1
20*	12.0008.3.081	Pneumatic Adapter (1/8” / NPT 1/8”)	1
21	See page 3-53	Connector	—
22*	12.0008.3.464	Connector	—
23*	12.0008.3.466	Connector	—
24*	12.0008.3.467	Connector	—
25*	12.0008.3.465	Connector	—
26*	12.0008.3.463	Handvalve	—
27*	02.0750.2.100	Needle, Size 80	—
28*	02.0750.2.109	Needle, Size 70	—
29*	24.3079.0.000	Main Cam ISBH - Type II.	—
30*	24.3080.0.000	Main Cam ISBH	—

* — Extra Parts

EXTRA PARTS - ROLLER KIT

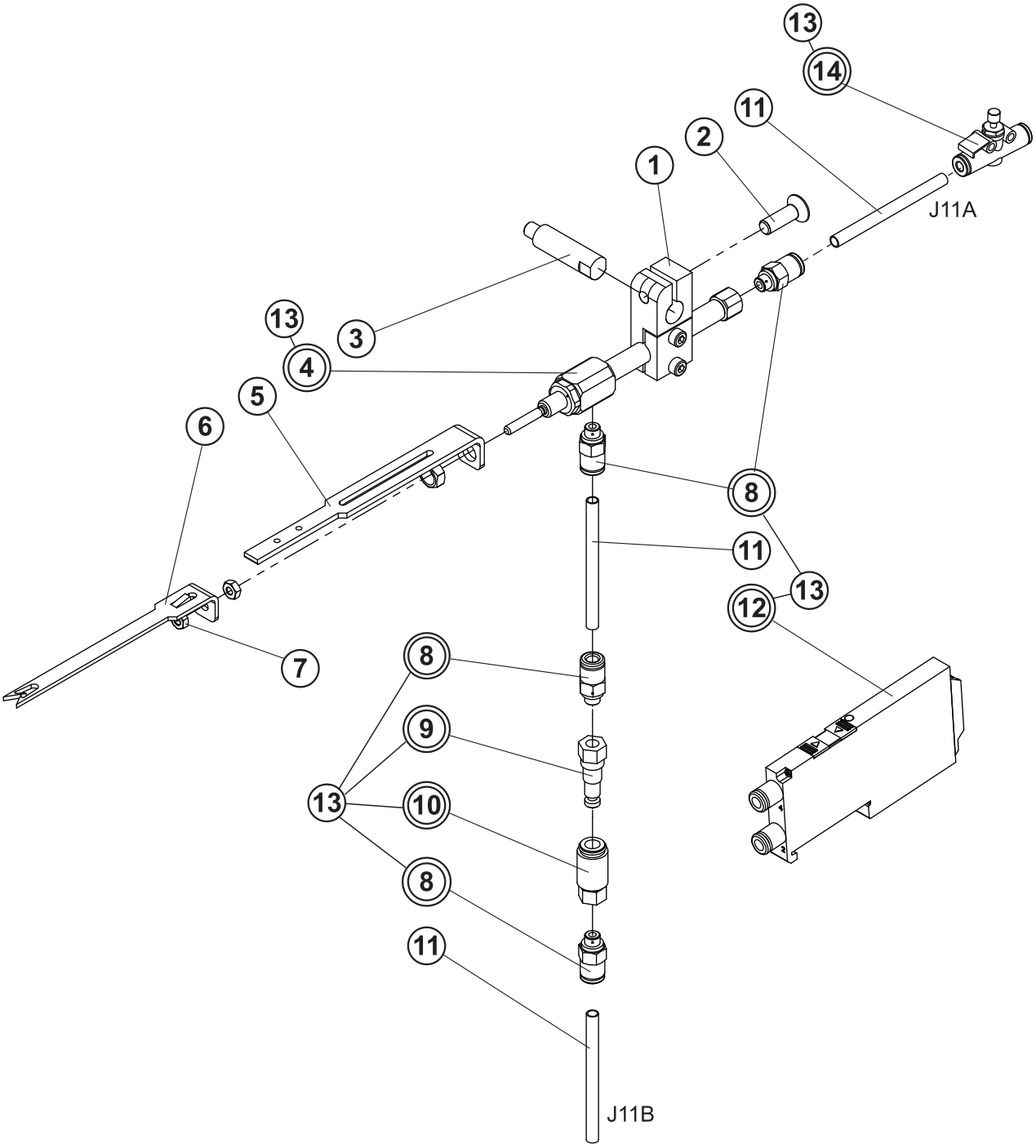


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EXTRA PARTS - ROLLER KIT

DET	PART NUMBER	DESCRIPTION	QTY.
01	08.6312.8.060	SCREW M8-60	16
02	08.6702.8.000	NUT M8	16
03	08.6802.8.000	SPRING WASHER M8	16
04	08.6852.8.000	WASHER M8	16
05	12.0008.6.527	ROLLER	2
06	12.0008.6.528	ROLLER WITH BRAKE	2
07	24.0171.0.000	PLATE	4

ACCESSORIES EXTRA PARTS - THREAD PICK-UP

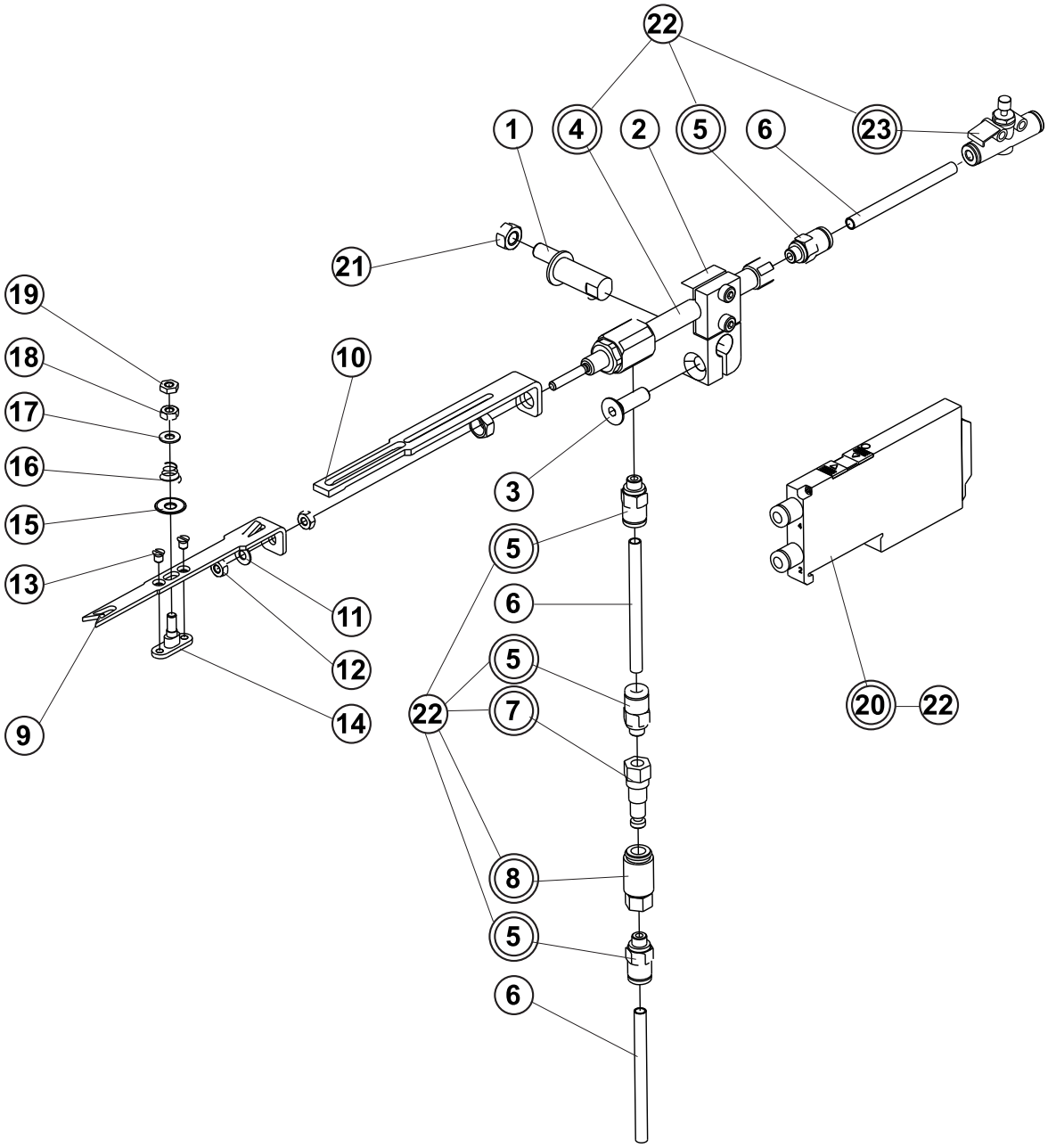


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ACCESSORIES EXTRA PARTS - THREAD PICK-UP

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4001.0.050	Cylinder Holder Assembly	●	1
02	08.6100.5.016	Screw M5-16		1
03	24.4004.0.000	Stud		1
04	12.0008.3.499	Cylinder	● ●●●	(1)
05	24.4003.0.000	Support		1
06	24.4002.0.000	Pick-up		1
07	08.6700.3.000	Nut M3		1
08	12.0010.3.027	Connector	●● ●●●	(4)
09	12.0008.3.602	Connector	●●	(1)
10	12.0008.3.601	Connector	●●	(1)
11	12.0008.3.416	Air Tube	●●●	1
12	12.0008.3.828	5/2 Valve	●●●	(1)
13	12.0008.3.575	Thread Pick-up Pneumatic Kit		1
14	12.0010.3.029	Speed Valve		(1)

ACCESSORIES EXTRA PARTS - THREAD PICK-UP



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ACCESSORIES EXTRA PARTS - THREAD PICK-UP

DET	PART NUMBER	DESCRIPTION		QTY.
01	24.4004.0.000	Eccentric Stud		1
02	24.4001.0.050	Cylinder Holder Assembly	● ●●●	1
03	08.6100.5.016	Screw M5-16		1
04	12.0008.3.499	Cylinder		(1)
05	12.0010.3.027	Connector	●● ●●●	(4)
06	12.0008.3.416	Air Tube	●●●	3
07	12.0008.3.602	Connector	●●	(1)
08	12.0008.3.601	Connector	●●	(1)
09	24.4094.0.000	Thread Catcher		1
10	24.4093.0.000	Thread Catcher Guide		1
11	08.6852.3.000	Washer M3		1
12	08.6702.3.000	Nut M3		1
13	01.2376.0.000	Screw-Flat Head		2
14	24.4092.0.000	Guide		1
15	10.1029.1.000	Tension Disc		1
16	17.0026.2.077	Spring		1
17	08.6850.3.000	Washer 3,2		1
18	08.6700.3.000	Nut M3		1
19	08.6710.3.000	Nut M3		1
20	12.0008.3.828	5/2 Valve	●●●	(1)
21	08.6700.5.000	Nut M5		1
22	12.0008.3.575	Thread Pick-up Pneumatic Kit		1
23	12.0010.3.029	Speed Valve		(1)

RECOMMENDED SPARE PARTS

No.	Part Number	Parts Description
01	07.6321.0.025	BRG, BALL CAM F. (INA)#LR605NPPU
02	20.0093.0.000	HOOK TRIMMER
03	20.0094.0.000	TRIMMER KNIFE
04	20.0111.0.000	LOOPER*FIRST
05	20.0112.0.000	LOOPER*SECOND
06	22.2657.0.000	RIGHT SHIFTER ARM SPRING
07	22.2653.0.000	LEFT SHIFTER ARM SPRING
08	23.2356.2.052	USA-KNIFE-1/2/13 M
09	23.2356.2.054	USA-KNIFE-5/8/16 MM
10	23.2356.2.055	USA-KNIFE-3/4/19 M
11	22.0353.0.000	DOUBLE GEAR
12	22.0313.0.000	FEED BRAKE PAD
13	08.6400.3.005	SCREW, H.S. SET, CUP, BLK
14	07.6440.0.018	SPRING, COMP. (LEE)
15	20.0092.0.004	TRIMMER ACTUATOR
16	01.2386.0.000	HEX SCREW 3/16-36 x.5
17	20.0093.2.004	HOOK-TRIMMER
18	23.3106.0.000	JIS FIRST LOOPER HOLDER
19	23.2107.0.000	SECOND LOOPER HOLDER
20	22.0520.0.000	NEEDLE BAR CLAMP
21	22.0530.0.000	NEEDLE BAR CONNECTING LINK
22	24.3077.0.000	MAIN CAM, ISBHMAIN CAM-ISBH
23	07.6440.0.028	SPRING (LEE) #LC-040C-01
24	22.2626.0.000	DRIVE DISK SWITCH SPRING

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01.1397.0.000	3-17	11	4	07.6045.0.046	3-5	01	2	08.6000.3.016	3-31	09	4
01.2084.0.000	3-5	10	1	07.6045.0.046	3-7	10	2	08.6000.3.040	3-31	08	1
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01.2376.0.000	3-5	17	4	07.6321.0.001	3-25	11	1	08.6000.4.005	3-27	20	1
01.2376.0.000	3-7	05	4	07.6321.0.025	3-15	50	2	08.6000.4.005	3-65	12	1
01.2376.0.000	3-71	13	2	07.6321.0.025	3-21	16	2	08.6000.4.006	3-29	20	1
01.6551.0.000	3-3	7	1	07.6321.0.029	3-21	13	(2)	08.6000.4.006	3-31	15	2
01.6551.0.000	3-23	17	1	07.6321.0.030	3-15	61	(1)	08.6000.4.006	3-33	4	2
01.7447.1.000	3-3	5	1	07.6440.0.018	3-13	41	2	08.6000.4.006	3-63	18	2
01.7447.1.000	3-23	15	1	07.6440.0.028	3-13	23	2	08.6000.4.008	3-49	6	2
01.7804.0.000	3-3	18	1	07.6440.0.028	3-21	18	2	08.6000.4.008	3-53	3	4
01.7805.0.000	3-3	23	1	07.6440.0.032	3-11	10	1	08.6000.4.008	3-57	6	2
01.7805.0.000	3-29	37	2	07.6440.0.033	3-13	8	2	08.6000.4.008	3-61	4	4
01.7806.0.000	3-27	18	2	07.6440.0.036	3-17	21	3	08.6000.4.008	3-63	9	2
01.7809.0.000	3-3	17	1	07.6440.0.037	3-25	04	2	08.6000.4.010	3-11	1	2
02.0750.2.100	3-65	27*	—	07.6440.0.040	3-11	16	1	08.6000.4.010	3-23	7	1
02.0750.2.109	3-65	28*	—	07.6440.0.041	3-13	11	1	08.6000.4.010	3-47	7	4
02.0750.2.110	3-3	32	1	07.6440.0.045	3-25	27	1	08.6000.4.012	3-9	1	1
02.0750.2.110	3-65	07	10	07.6440.0.050	3-13	18	1	08.6000.4.012	3-49	23	2
03.5524.0.049	3-37	01	1	07.6440.0.051	3-27	10	1	08.6000.4.012	3-53	21	4
04.1416.0.003	3-35	8	(1)	07.6600.0.006	3-51	13	2	08.6000.4.012	3-57	23	2
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04.9024.0.653	3-37	38	1	08.6000.3.004	3-53	26	2	08.6000.4.014	3-21	8	2
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06.2400.0.008	3-37	27	1	08.6000.3.005	3-61	29	2	08.6000.4.070	3-31	07	4
06.2400.0.009	3-37	32	2	08.6000.3.005	3-63	22	1	08.6000.5.008	3-63	13	1
06.2400.0.014	3-41	4	(1)	08.6000.3.006	3-23	29	1	08.6000.5.010	3-61	16	2
06.2400.0.901	3-37	13	1	08.6000.3.006	3-29	15	1	08.6000.5.012	3-5	07	1
06.2400.0.902	3-37	39	1	08.6000.3.006	3-33	11	1	08.6000.5.012	3-7	15	1
06.2400.0.904	3-37	35	1	08.6000.3.006	3-53	5	12	08.6000.5.012	3-45	01	2
06.2400.0.905	3-53	15	1	08.6000.3.006	3-61	6	13	08.6000.5.012	3-53	24	2
06.2400.0.905	3-61	8	1	08.6000.3.008	3-47	3	2	08.6000.5.012	3-61	17	1
06.2400.0.910	3-39	49	1	08.6000.3.008	3-53	7	10	08.6000.5.016	3-3	37	1
06.2400.0.913	3-39	48	1	08.6000.3.008	3-61	9	10	08.6000.5.016	3-23	3	1
06.8800.0.001	3-41	2	(1)	08.6000.3.010	3-13	38	1	08.6000.5.016	3-27	3	4
07.6045.0.009	3-13	19	2	08.6000.3.010	3-17	17	1	08.6000.5.016	3-29	26	3
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