



Service Manual









SERVICE MANUAL

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CoLibri System S.p.A.



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This manual is intended for use by technicians who perform <u>1st level</u> service and repair work in respect of the *CoLibrì* **Pocket** book covering machine and is thus directed at authorised technical staff, who are able to correctly interpret the instructions contained herein. This document must not therefore be considered simply as a reference document in the event of a breakdown or fault, but rather as a preliminary instruction manual to be used to train the personnel who will perform the abovementioned maintenance and repair work.

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Table of Contents

Introduction and Identification of the Main Components	page	1
Warnings and Precautions	page	2
Trouble Shooting	page	3
Repair and Replacement Work	page	7
Removal of the work surface and the protection covers	page	7
Description of the Repair and Replacement Work	page	9
Replacement of the Welding Bar	page	9
Replacement of the microswitch that detects whether the lever has been pressed	page	11
Removal/replacement of the idle roller	page	12
Removal/replacement of the rubberized roller	page	13
Replacement of the motor	page	14
Replacement of the driving belt	page	16
Replacement of the control board	page	17
Replacement of the cycle counter	page	18
Replacement of the Start cycle lever	page	19
List of Spare Parts	nage	20





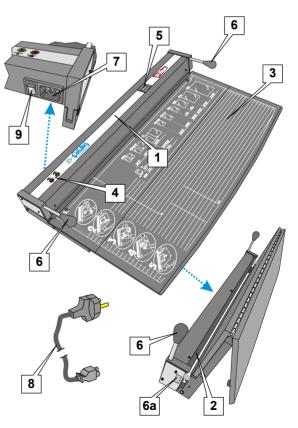


Introduction and Identification of the Main Components

The **CoLibrì Pocket** book covering machine is a semi-automatic system used to cover any type of book or publication and may also be used to file, save and protect documents, photographs, plans and objects. Covering books or publications of any shape and size becomes a very quick and easy task using the **CoLibrì** system's special transparent covers that are available in various sizes. In fact, no more than 20 seconds are needed to apply a resistant and perfectly adherent protective cover. In addition, the transparent cover is not sticky, it does not alter the book cover and may be removed and replaced at any time. When the book covering machine was designed the main aim was to create a ready to use compact unit that would be suitable for carrying out trimming and welding operations of covers in a safe, simple, clean and perfectly squared manner. All these characteristics have been perfectly integrated in the **CoLibrì Pocket**, a hi-tech system which is accurate down to the last detail and which is also light, handy, fast and cost effective. The system is particularly suitable for stationery shops, bookshops, schools and libraries. In addition, because it is fast and easy to use, the **CoLibrì**

Pocket book covering machine is also the ideal solution for professional offices, where architects, editors, photographers, etc. can use it to file projects, documents, sketches and drawings or to put objects, photographs and printouts into envelopes. The unit is comprised of the following main components:

- 1. Welding Head
 (including: control board;
 motor, roller and "tearing"
 counter-roller)
- 2. Welding Bar
- 3. Work Surface
- **4.** LEDs to signal the status of the unit
- 5. Cycle Counter
- **6.** <u>Cycle Start Levers</u> with micro *(6a)* to detect whether the lever has been pressed
- 7. Supply Socket
- 8. Power cable
- 9. Main switch









The supply also includes a set of accessories (a screwdriver, an allen spanner, user documentation, etc.).

For more information on the equipment installation/connection and proper use of the **CoLibri Pocket** book-covering machine kindly consult the "User Manual".

Warnings and Precautions

To avoid irreparable damage to the equipment and/or to avoid potentially dangerous situations, the warnings set out below must be followed:

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The manufacturer will not be held liable for any direct or indirect damage arising out of the failure to observe the warnings contained herein.



All the procedures and interventions described in this manual must be performed exclusively by qualified and authorized personnel.

Before disassembling and reassembling the components of the unit and in any event before working on the unit, ensure that the power cable is disconnected. The socket used to power the unit must be close to the unit and must be easily accessible so that it can be switched off immediately in the event of an emergency.

In view of the presence of electronic components (e.g. control board) take the necessary precautions against electrostatic discharges which might irreparably damage such components.

Where it is necessary to remove any protection device in order to properly work on the machine, the device must be re-assembled and its correct positioning must be checked when the work is finished and before restarting the unit.

All the materials which have an impact on the environment and which must be removed pursuant to any repairs carried out must be disposed of according to the laws in force. If necessary specialized companies must be used for their disposal.

Only work in accordance with the instructions given. Carrying out procedures or work other than those specified may cause irreparable damage and/or give rise to potentially dangerous situations. If necessary, contact the Manufacturer to obtain additional information.







Trouble Shooting

A list of the most common problems relating to the Co*Libri Pocket* book covering machine is set out below. The relative corrective actions to be taken are described for each of the problems.

The symbol "**" indicates that the detailed description of the repair/replacement work is set out in the paragraph entitled "Repair and Replacement Work".

Problem

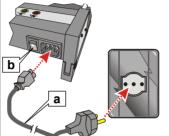
not light up)

The unit does not switch on

Probable cause and remedy

(the green "ON" LED does

The power cable is not connected properly:



check that the power cable (a) is correctly plugged in and that the main switch (b) is turned to "I" (ON) position.

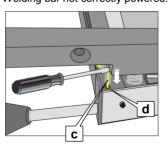
Power cable damaged. Check the cable (a) and if necessary replace it.

Control board not functioning properly. Check the board and if necessary replace it (**)

The book covering unit does not work

Start cycle levers not working properly. Make sure that \underline{both} the levers to start the cycle are firmly pressed $\underline{simultaneously}$. When both levers are correctly pressed, the red "BUSY" LED should turn on.

Welding bar not correctly powered:



Make sure that the welding bar power wire (c) is correctly inserted into the relevant plug-in connector (d). Use a screwdriver or a similar tool (not sharp) to firmly press the wire into its connector. Repeat the operation on the opposite side.



Before starting the operation, switch off the main switch and disconnect the power cable.







Problem	Probable cause and remedy
The book covering unit does not work (follows)	Welding bar damaged or worn-out. Check and if necessary replace the defective part (**) *** *** *** *** *** ** ** *
	Microswitch(es) which checks that the lever has been pressed is defective. Check and if necessary replace the defective part (**)
	The drive-motor of the "tearing" rubberized roller is not functioning properly. Check the motor and if necessary replace it (**)
	Control board not functioning properly. Check the board and if necessary replace it (**)
The trimming operation is not being carried out	A pre-heating cycle was not carried out. Carry out a pre-heating cycle (as instructed in the "user manual") and try again.
correctly	Covers/envelopes made from an unsuitable material are being used. The CoLibrì Pocket book covering machine can only trim and weld CoLibrì covers and envelopes or other material approved by the manufacturer (see the "user manual")
	If the trimming operation is not performed correctly at the right/left side or in the middle of the cover/envelope, then the problem might be caused by an unparallel support surface.
	OK!
	Try to move the book covering machine 4 to 5 inches to the right or to the left and retry. If the problem persists, place the machine on another support surface (see the "user manual").







Problem Probable cause and remedy

The trimming operation is not being carried out correctly (follows)

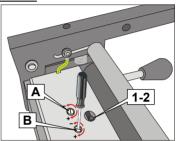
The trimming operation is completed over the entire length of the cover/envelope, but the material is not welded satisfactorily or appears excessively melted (plastic gloss generation). In this case the problem is caused by an incorrect welding temperature (welding time too short or too long).

- The CoLibri Pocket book covering machine is supplied already adjusted and calibrated for the most common applications/installation sites. The above problem could then result from an installation site where the temperature does not fall within the permitted range (see the "User Manual" for further details).
- Should you be unsure as to whether you actually need to adjust the welding temperature, kindly contact the manufacturer's technical department to obtain the required assistance and information.

To change the welding time, two trimmers (A) and (B) and a selection switch (1-2) are available (main switch/power cable connector side).



Before starting the operation, switch off the main switch and disconnect the power cable.



Using the screwdriver supplied with the machine, adjust the trimmers (A) or (B) working as follows:

The welding time adjustment must be performed in stages, checking whether the results are satisfactory after every step. In particular, <u>DO NOT turn (for each step) the trimmers more than ¼ of a turn either in a clockwise or in a counter-clockwise direction.</u>

If, after the welding/trimming operation excessive plastic gloss or filaments remain, or the cover/envelope appears excessively wavy, then:

- Make sure that the switch (1-2) is set to position "2", then turn the trimmer (B) counter-clockwise to reduce the welding time.
- ◆ If the problem persists, even though the trimmer (B) has been completely rotated in a counter-clockwise direction (for instance when the room temperature is very high), then:
 - Move the switch (1-2) to position "1", then completely turn the trimmer (A) in a <u>clockwise</u> direction.
 - If the problem persists turn the trimmer (A) in a <u>counter-clockwise</u> direction to further reduce the welding time (adjustment range through trimmer A: 1 to 3.5 sec).

If the book covering machine does not correctly complete the welding/trimming operation of the cover/envelope (e.g. where the trimming is not clean or there is poor welding):

- Make sure that the switch (1-2) is set to position "2", then turn the trimmer (B) in a <u>clockwise</u> direction to increase the welding time (adjustment range: 3.5 to 7-8 sec).
- CAUTION!! With selection switch set to position "2" and trimmer "B" completely turned, the welding bar may be burnt after a few trimming operations.







Problem	Probable cause and remedy
The trimming operation is not performed correctly	Driving belt for the rubberized "tear" roller is broken or worn. Check and if necessary replace the defective part (**)
(follows)	We recommend replacing the driving belt after approximately 20,000 – 30,000 trimming cycles (this can be checked with the cycle counter)
	Rubberized "tear" roller damaged. Check and if necessary replace the defective part (**)
	Idle roller damaged or incorrectly positioned. Check and if necessary replace the defective part (**)
	Control board not functioning properly. Check the board and if necessary replace it (**)
The cycle counter is not updated on the completion of a cycle	Cycle counter not functioning properly. Check and if necessary replace the defective part (**)
Lever(s) to start the cycle broken or damaged (for example if the unit is dropped)	Replace the damaged part (**)







Repair and Replacement Work

Removal of the work surface and the protection covers

To gain access to the various components that need to be changed it may be necessary to remove the work surface and/or the protection covers:



Before carrying out any repair and/or maintenance work the unit must be switched off and the electrical power supply must be disconnected by pulling out the plug.

Wait until the machine has cooled down.

B

Failure to observe the warnings set out relieves the supplier from any direct or indirect liability in the event of damage and the warranty shall be immediately forfeited.

✓ Removal of the work surface

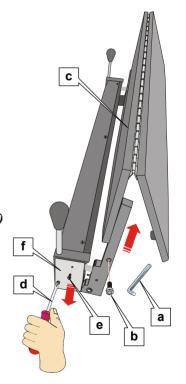
Rest the unit in a vertical position.

Using the hexagonal spanner (allen spanner) (a) supplied with the unit, unscrew the 2 fixing screws (b) of the work surface (c) and remove the latter from its support brackets.

✓ Removal of the side protection covers

Using a suitably sized star screwdriver (d), unscrew the 2 fixing screws (e) of the side protection cover (f) and remove the latter.

If necessary, repeat the procedure on the opposite side of the welding head.







✓ Removal of the lower protection cover

Remove the work surface as indicated above and then turn the welding head over.

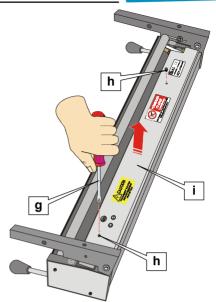
Using a suitably sized Phillips screwdriver (g) unscrew the 2 fixing screws (h) of the lower protection cover (i) and remove the latter.

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The lower protection cover cannot be removed without removing the work surface.



After disconnecting the power from the unit wait a few minutes before removing the lower protection cover.

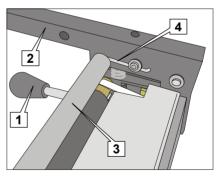


When handling the welding head with the work surface removed, always grip it using the handles (1) and not the surface support brackets ("shoulders") (2). This is done to avoid the contrast idle roller (3) from being dislodged.

In the event of the roller becoming dislodged from its housing, widen the support brackets slightly (3) and replace the pin(s) of the roller in the housing.

During this operation pay attention to the position of the spring (4): viewing the welding head from below, the spring must be ON the roller pin.

If this is not the case, the machine will not work properly.











Description of the Repair and Replacement Work

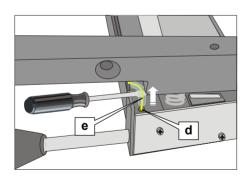
A detailed description of the repair and replacement work is set out below:

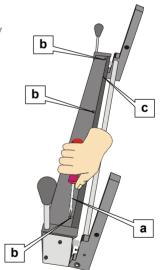
- Replacement of the welding bar
- Replacement of the microswitch that detects whether the lever has been pressed
- Removal/replacement of the idle roller
- Removal/replacement of the rubberized roller
- Replacement of the motor
- Replacement of the driving belt
- Replacement of the control board
- > Replacement of the cycle counter
- ➤ Replacement of the lever that starts the cycle

Replacement of the Welding Bar

When necessary or <u>after approximately 5000 – 6000 trimming cycles</u> the welding bar must be replaced as follows:

1) Remove the work surface as indicated previously then, using a suitably sized Phillips screwdriver (a), unscrew the 3 fixing screws (b) of the welding head (c).





2) To work more easily turn the welding head over. Using a screwdriver or a similar tool (not sharp) remove the wire (e) which powers the welding bar, from the connector (d). To do so apply a levering action to the wire covering. Repeat the procedure on the other side.



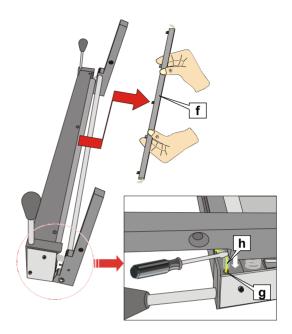




3) Extract the welding bar (f) from its housing and replace it with the new welding bar.

> The reference tabs prevent the bar from being incorrectly positioned.

Insert the wire (h) which powers the welding bar into the connector plug (g). Use a screwdriver or a similar tool (not sharp) to push the wire into the connector plug, by exerting pressure on the wire covering. Repeat the procedure on the other side.



4) After having correctly positioned the power wires inside the connectors, tighten the 3 fixing screws of the welding bar and re-install the work surface. Finally, re-insert the power cable.







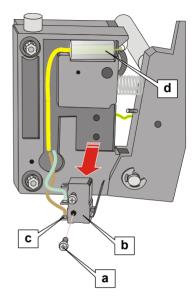
Replacement of the microswitch that detects whether the lever has been pressed

When necessary, proceed as follows to replace the microswitch(es) that detects whether the lever to start the cycle has been pressed:

- 1) Remove the side protection cover in the manner described above. Using a suitably sized Phillips screwdriver unscrew the 2 screws (a) that hold the microswitch (b) to be replaced.
- 2) Remove the microswitch from its housing and using a suitable soldering iron, unsolder the wires (c) from the sockets to disconnect the microswitch. Thereafter solder the wires (c) to the sockets of the new microswitch.
 - Work very carefully when unsoldering/soldering the wires to the microswitch.

Check the strength of the soldering when the replacement has been completed.

To avoid damage, do not touch parts of the unit and/or the microswitch with the soldering iron.

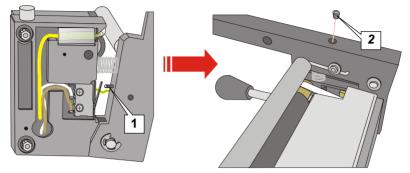


- 3) Insert the new microswitch which has been connected into its housing and fix it in position using the screws. Check that the switch is functioning correctly by pressing the start-cycle lever and making sure that it "clicks" - this indicates that the microswitch has been activated. Reposition and fix the side protection cover that was removed. Finally, re-insert the power cable.
 - To avoid damaging the microswitch, do not overtighten the fixing screws. Before repositioning the side protection cover, make sure that the connection wires are not pinched or bent excessively. Use the channelling provided to house the wires. In addition check that the silicon covering (d) is correctly inserted in its housing.





Sometimes the microswitch(es) may fail to work because the related pin (1) is incorrectly set. To set the intervention point of the microswitch proceed as follows: using a suitable hexagonal spanner (allen spanner) remove the fixing dowel (2) and then screw or unscrew the pin until the correct setting is reached. Thereafter reinsert and tighten the fixing dowel (1).

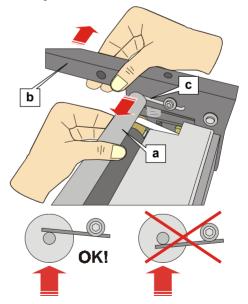


Removal/replacement of the idle roller

When necessary, proceed as follows to remove and replace the idle roller:

- 1) Remove the work surface in the manner set out above.
- 2) Grasp the idle roller (a) with one hand and pull it towards the interior of the machine. With the other hand slightly "widen" the support bracket (b). This allows for the roller pin to be removed from the housing set in the support bracket. The roller can now easily be extracted from the other end and, if necessary, replaced. Reposition and fasten the work surface. Finally, reinsert the power cable.

When re-inserting the pin(s) of the roller in its housing pay particular attention to the position of the spring (c): viewing the welding head from below, the spring must be ON the roller pin. If this is not the case, the machine will not work properly.









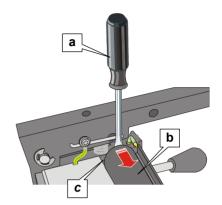
Removal/replacement of the rubberized roller

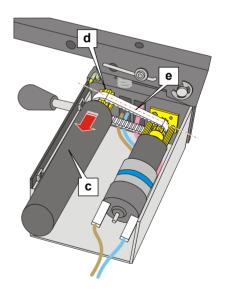
When necessary, proceed as follows to remove and replace the rubberized roller (motor driven):

- 1) Remove the work surface and the lower protection cover in the manner described above.
- 2) With the welding head turned over, working on the right-hand side (signalling LED side) insert the head of a screwdriver (a) or other similar tool between the rubberized roller (b) and the support bracket(c). Use the tool as a lever to extract the roller pin from the housing situated in the support bracket.
 - To prevent breaking the support bracket, work very carefully without exerting excessive force.
- 3) Thereafter, the roller (c) can be easily extracted from the other end (powered side) and replaced if necessary.
- 4) When re-installing the rubberized roller, we recommend starting the insertion from the motor side, making sure that the gear (d) of the roller is correctly inserted inside the driving belt (e).

When the installation is completed, check and if necessary reset the belt so that it is parallel.

Reposition and fasten the protection covers and the work surface. Finally, re-insert the power cable.











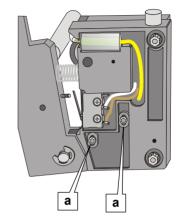
Replacement of the motor

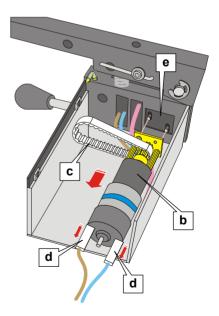
When necessary, proceed as follows to replace the motor that drives the rubberized roller:

- 1) Operating as set out above, remove:
- the work surface
- the side protection cover on the motor side
- the lower protection cover
- the idle roller
- the rubberized roller.
- 2) Using a suitable allen spanner, unscrew the 2 screws (a) that lock the motor unit (b).
 - Support the motor unit with one hand when it is being loosened. The screws (a) remain inserted in their housing even when completely loosened.
- 3) Extract the motor unit (b) complete with the belt (c) and disconnect the power terminals (d) by extracting them. Connect and reposition the new motor unit in the housing provided (e). The shape of the housing is such that the motor unit cannot be positioned incorrectly
 - The replacement "motor unit" is supplied with the driving belt (c)

 Pay attention not to invert the polarity when connecting the motor. Re-insert the terminals in the original position.

<u>Partially</u> tighten (without locking) the 2 screws (a) which lock the motor unit (b) so that the motor itself has some freedom of movement.









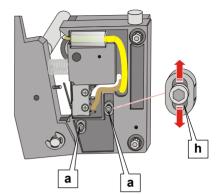


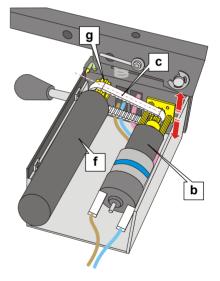
- 4) Re-install the rubberized roller (f), making sure that the gear (g) is inserted inside the driving belt (c).
- 5) After having installed the rubberized roller, check that the driving belt is parallel and then ensure that the belt is tensioned properly:
- move the motor unit (b) along the slots (h), until the driving belt (c) is tensioned correctly.
- tighten the screws (a).

Do not over-tension the belt or overtighten the locking screws.

Reposition and fasten the protection covers and the work surface.

Finally, re-insert the power cable.







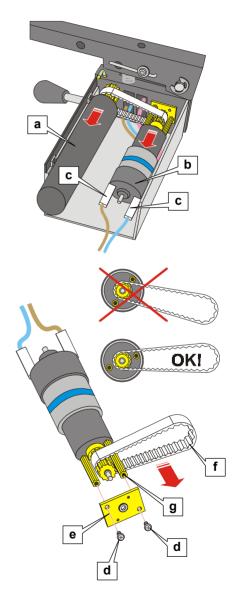




Replacement of the driving belt

When necessary or after approximately 20000 – 30000 trimming cycles replace the toothed driving belt that drives the rubberized roller operating, as follows:

- 1) Working as set out above remove:
- the work surface
- the side protection cover on the motor side
- the lower protection cover
- the idle roller
- the rubberized roller (a)
- the motor unit complete with the belt (b)
 - It is unnecessary to disconnect the power cables (c) of the motor.
- 2) Using a suitably sized Phillips screwdriver, unscrew the 2 screws (d) that fasten the plate (e). Remove the plate so that the driving belt (f) can be extracted.
- 3) Extract the driving belt, replace it and then reposition and fasten the plate (e) using the screws (d).
 - Pay particular attention to the positioning of the driving belt (f): the support pin (g) on the rubberized roller side must be inside the belt, as shown in the figure.
- 4) Re-install the motor unit and the rubberized roller. Check that the new belt is parallel and tension it following the procedure set out above
 - Then re-install the idle motor, all the protections that were removed and the work surface. Finally, re-insert the power cable.









Replacement of the control board

When necessary, proceed as follows to replace the control board of the unit:

- 1) Working as set out above remove:
- the work surface
- the lower protection cover

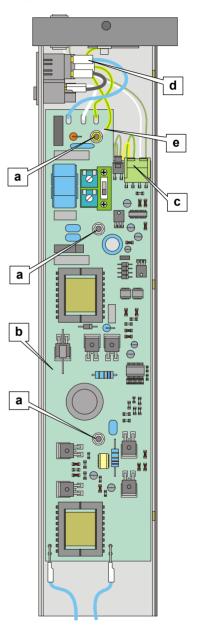
To have greater access and to make the work easier, also remove the idle roller and the rubberized roller

- 2) Using a suitable hexagonal spanner, unscrew the 3 screws (a) which hold the board (b).
- 3) Disconnect all the cables connected to the board by extracting the relevant connectors/terminals (c) and (d). Extract the board from the machine, replace it and reconnect all the cables. The colouring and/ the configuration of the cables/connectors facilitate correct re-assembly.
 - In any event and in order to avoid incorrect connections, we recommend that the positioning of the various cables be noted before disconnecting them.

Remember to reconnect the earth cable (e) using the screw (pin) provided.

Handle the control board with care and take all the necessary precautions against electrostatic charges.

4) Finally, fasten the board in the pre-arranged position using the hexagonal screws. Thereafter re-install the parts removed (e.g. idle/rubberized rollers), reposition and fasten the lower protection cover and the work surface. Finally, re-insert the power cable.







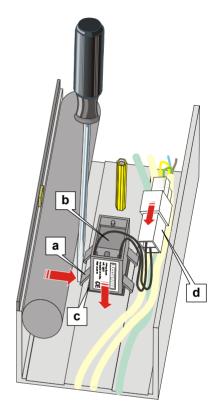


Replacement of the cycle counter

When necessary, proceed as follows to replace the cycle counter:

- 1) Working as set out above remove:
- the work surface
- the lower protection cover
- 2) Using a suitable screwdriver or a similar tool, exert pressure on the blocking tab (a) of the cycle counter (b) to unhook it from the anchoring step and make it enter the opening (c) to insert the counter.
 - Repeat this procedure on all the remaining blocking tabs.
- 3) Disconnect the connector (d) and then extract the counter to be replaced complete with cables and connector, from the related insertion opening (c) located in the welding head structure.
- 4) First insert the connector and the cable of the new counter in the opening (c). Thereafter insert the counter in the opening and exert pressure on it until the blocking tabs (a) hook onto the anchoring steps. Re-insert the connector (d).
 - Check that the counter is correctly positioned before locking it in place.

Reposition and fasten the lower protection cover and the work surface. Finally, re-insert the power cable.







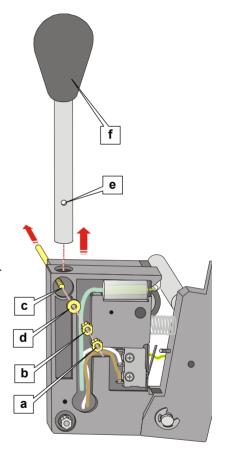


Replacement of the Start cycle lever

When necessary, proceed as follows to replace the cycle start lever(s).

- 1) Remove the side protection covers in the manner described above
- 2) Using a suitable hexagonal pipe spanner, unscrew the nut (a) and the lock nut (b) which fasten the tie rod (c).
- 3) Remove the washer (d) and then using a suitable tool push the tie rod (c) inwards until it comes out of the hole (e) which is located on the rod of the start cycle lever (f) which is to be replaced.
- 4) Slide the start cycle lever from its housing and then insert the new lever, aligning the hole (e) with the tie rod (c).
- 5) Working on the opposite side, exert pressure on the tie rod so as to insert the end into the hole (e) of the new lever (f). If necessary, slightly rotate the latter to facilitate insertion.
- 6) Insert (on the protruding part of the tie rod) the washer (d) and then tighten the nut (a) and the lock nut (b).

Reposition and fasten the side protection covers. Finally, re-insert the power cable.







List of Spare Parts

The following table lists the main components of the CoLibri Pocket book covering machine that can be replaced.

- When ordering spare parts, kindly specify the serial number of the apparatus, as well as the code of the part required.
- We recommend using only original spare parts. The Manufacturer cannot be held liable for damage arising out of the use of parts that are not original.
- *The parts which have been replaced and/or the entire apparatus (at the end of their* life) are components with a high environmental impact. For this reason we do not recommend that they be disposed of with solid urban waste. You should rather use the services of a specialized company and/or comply with the local rules and regulation in force.

See the replacement procedures contained in the paragraph entitled, "Repair and Maintenance Work" as regards the identification / location of the various items mentioned.

Component	Code
welding bar	0006 P
power cable	0041
support foot	0042
work surface	0043
left side protection cover	0044
right side protection cover	0045
lower protection cover	0046
microswitch to detect whether the cycle start lever has been pressed	0047
idle roller	0048
spring for the idle roller	0049
rubberized roller	0050
motor (complete with pre-installed belt)	0051
driving belt	0052
control board for the unit	0053
cycle counter	0054
cycle start lever	0055





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