

BENCH TOP LABELLER

M2R



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DECLARATION OF CONFORMITY

We

TENCO S.r.l. Unipersonale

Via Arbora 1, 16036 Avegno (GE) – Italia

declare on our own responsibility that the product:

Model: 900-01201-000

Serial no.

Year of manufacture: 2014

referred to in this declaration, complies as far as possible with the requirements outlined in the following Directives:

- 98/37/EC Machinery Directive
- 89/336/EEC Electromagnetic Compatibility Directive
- 73/23/EEC Low Voltage Directive

and that the following technical standards have been applied:

- EN ISO 12100-1 Basic concepts, general principles for design. Basic terminology, methodology
- EN ISO 12100-2 Basic concepts, general principles for design. Technical principles
- EN 294 Safety of machinery. Safety distances to prevent danger zones being reached by upper limbs.
- EN 349 Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs.
- EN 563 Temperatures of touchable surfaces. Ergonomics data to establish temperature limit values for hot surfaces
- EN 1050 Safety of machinery. Principles for risk assessment.

AVEGNO,

The legal representative of the Company
Giuseppe Tenco

Signature

CHAPTER 2


MARKING

Below is an example of the CE-ATEX labelling reported on the machine frame.



TENCO S.r.l. Unipersonale

Via Arbora 1, 16036 Avegno (GE) – Italia

ANNO	ALIMENTAZIONE
MODELLO	POTENZA
MATR.	PRESSIONE ARIA
	CONSUMO ARIA
	MASSA

Conforme alle normative anti-infortunistiche CE

WARRANTY

TENCO S.r.l. guarantees its products for 12 months from the date of delivery, indicated by the date on the shipping document.

The TENCO warranty covers all defects of conformity of the machine with reference to the regulations in force on the subject. The defect of conformity must be reported promptly and clearly to TENCO via registered letter: the company will evaluate the defect and indicate the possible remedies in compliance with the directive in force. The manufacturer does not accept claims for defects of conformity which, though obvious or readily detectable in use, are not reported promptly.

TENCO is not responsible for damages or defects due to improper installation and use, or malfunctions attributable in any case to negligence of any kind.

TENCO is not responsible for damages to property or persons deriving from improper use of the machine or failure to comply with the instructions in the manual enclosed with the machine.

Repairs made under the warranty, involving additional expenses such as travel to the user's premises, particular shipments, etc., must be agreed on in advance with TENCO.

The warranty is automatically invalidated if the machine is tampered with, or in case of unauthorized repairs or use other than that expressly indicated.

The personnel assigned to operate the machine must have psychological and physical characteristics compatible with use of the machine, and must be instructed in its correct use. TENCO is not responsible for damages caused by erroneous use of the machine.

For anything not expressly mentioned here, reference is made to the regulations in force on the subject. In case of any disputes, the Court of Genova has jurisdiction.

GENERAL SAFETY INDICATIONS

This manual is an integral part of the machine and must accompany it throughout its life. Before performing any operation, read each and every part of this manual carefully.

The company cannot be held responsible for property damage, injuries or damage to the machine itself due to non-compliance with the instructions found herein.



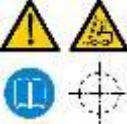

The machine must be installed in good workmanlike manner and only by qualified personnel.

The operating personnel must receive adequate training in use of the machine and must be in good psychological and physical condition and must not be under the influence of alcohol, drugs or medications that reduce alertness.

The operator must be aware of the dangers derived from use of the machine.

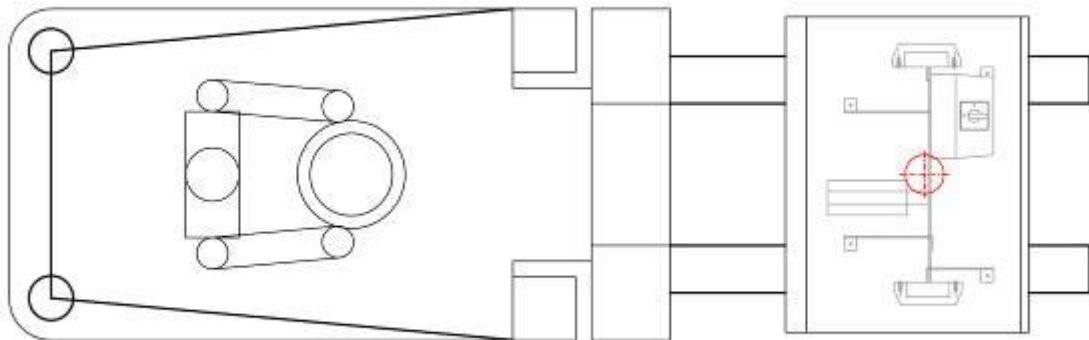
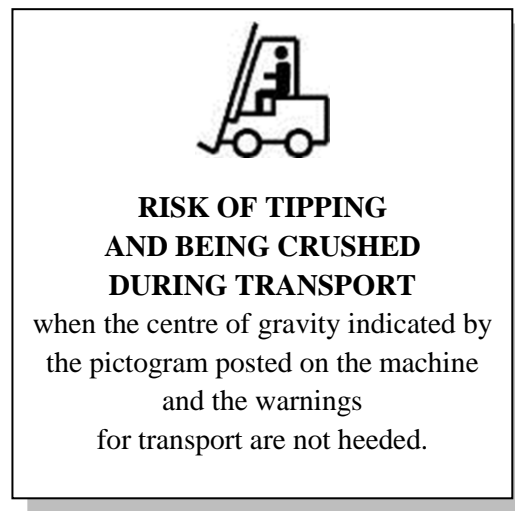
4.01 Pictograms

The safety-related pictograms posted on the machine (when required) and their meanings are reported below. If the pictograms become illegible, they must be replaced (under the customer's responsibility).

	Danger due to a voltage of 230V
	Do not use water to put out fires – use the forms of extinguishing indicated in the standards
	Danger related to transport; follow the instructions given in the manual; indication of the machine centre of gravity, to be used when positioning the forks of the transport forklift truck
	Danger of pinching/crushing limbs

4.02 Residual risks

The figure below displays the residual risks that the machine may present during transport, operation and maintenance.



4.03 Demolition

If the machine is to be demolished, it must be taken apart and the metal parts — steel, aluminum and copper — separated from the plastic parts in PVC.

Recover the grease from the gearboxes found in the labeling station movement mechanism casing.

Finally, take the separated materials to special waste disposal centres.

TRANSPORT AND OPENING THE PACKAGE

WARNING: before moving the machine, make certain that the unit being used is rated for the weight of the machine (see the “technical characteristics” table) and note the manufacturer posted centre of gravity pictogram on the machine.

5.01 Packaging

MODEL	TYPE OF PACKAGING
M2R	N.1 pallet

5.02 Handling the crates or boxes

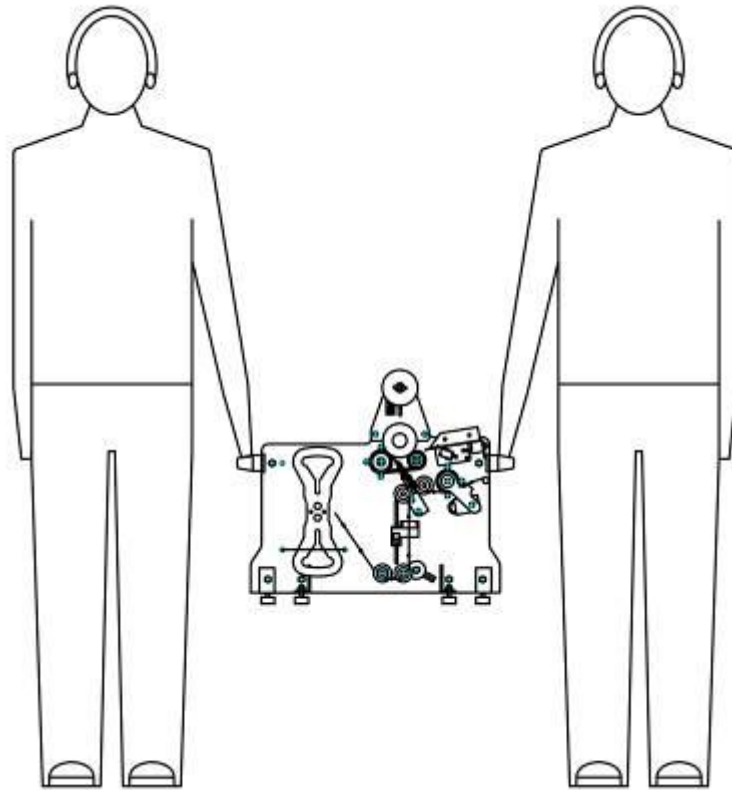
When handling with a forklift truck, make certain that the forks are set symmetrically vs. this centre of gravity. Moreover, the forks should be far enough apart to prevent the load from swinging or tipping over during transport.

5.03 Opening the package

When opening the package, make certain that the contents match what is indicated in the shipping documents, that they are not damaged, have not been tampered with or anything else. This must be done in the presence of the carrier making the delivery (see WARRANTY). Dispose of the packaging materials as outlined in the current standards.

5.04 Handling the contents

Withdraw all the material from the package and bring the machine to the point where it is to be used; this must be done following the same precautions followed when moving the packaged unit.



INITIAL INSTALLATION

6.01 Arranging the area

Arrange an area suitable for operation of the machine (see the “technical characteristics” table) as per European standard EN60079.

Set the unit at a point where the lighting is not less than 200 lux.

The power cable supplied with the unit is 5 metres long and has no plug (IEC 309 2P + T 230 V). Check the distance for access to the electrical panel for hook up.

Do not use extension cords of any sort, flat or winding, as there is the risk of overheating.

Also arrange for connection to a compressed air system (only with marker installed on the machine).

6.02 Positioning

Moving the machine very carefully, take it to the arranged position (see 5.03 Handling the contents).

Set the machine in a stable position, check that it is level, make any necessary corrections and then lock the wheels or adjustable feet.

6.03 Electrical connections

Make certain that the power supply system has a differential circuit breaker and an earthing system compliant with the standards.

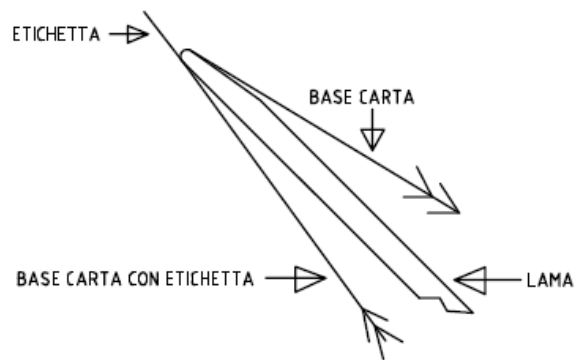
Check the electric characteristics of the machine (see “technical characteristics” table) and check that the power supply is suitable and compliant with Directives 98/37/EC (Machinery Directive), 94/9/EC (ATEX Directive), 89/336/EC (Electromagnetic Compatibility Directive), 73/23/EEC (Low Voltage Directive).

After having checked the above, hook up the machine to the power supply using the cable and plug (IEC 309 2P + T 230 V) not provided.

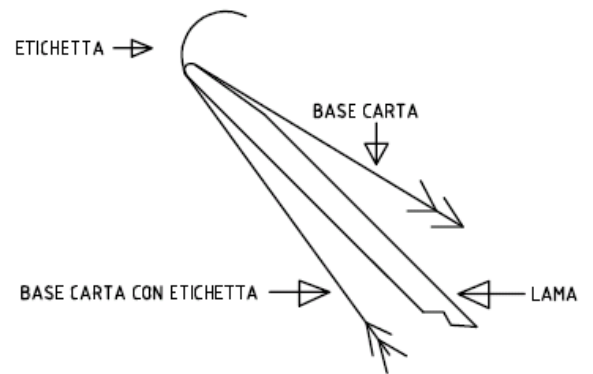
6.04 Paper quality

If the quality of the paper used in the labels is not suitable for blade peeling, the labels can get twisted and machine function will be poor. Always notify the label manufacturer of the problem of peeling.

SPELLICOLAMENTO OK

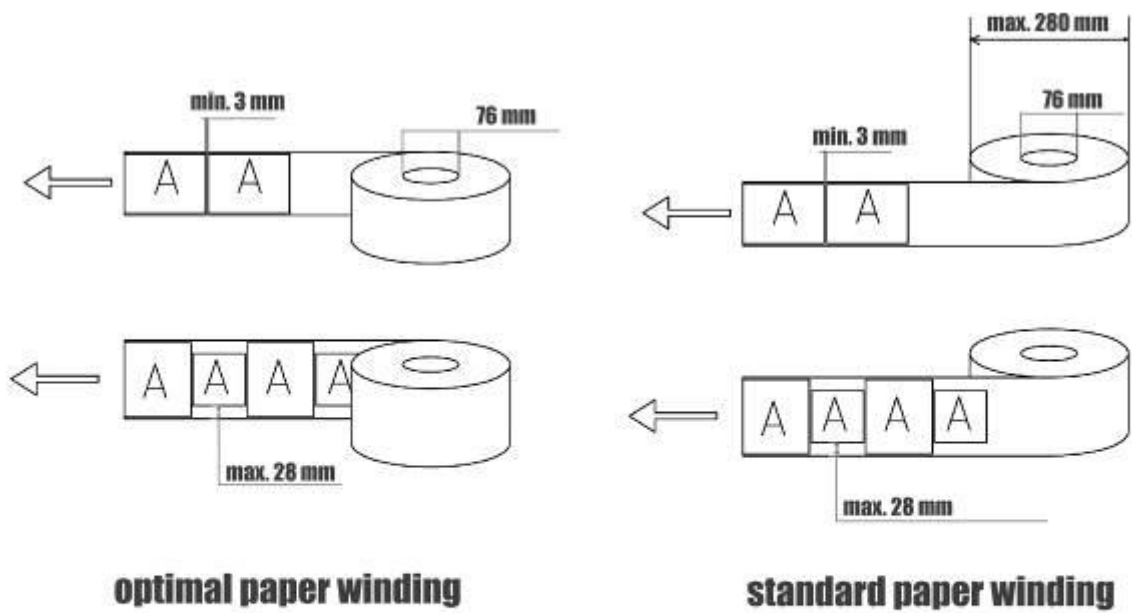


SPELLICOLAMENTO NO

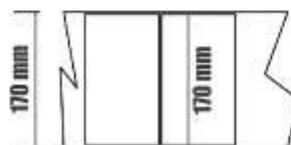


6.05 Direction of paper winding

The rolls of labels (front and back labels) must be printed and rolled up as shown below.



MAX paper passage
on base machine



GENERAL**7.01 Technical specifications**7.01.01 TECHNICAL CHARACTERISTICS TABLE**Type of container (dimensions min-max)**

Cylindrical:	diameter from 35 mm up to 120 mm
Conical:	NO
Squared:	NO
Shaped:	NO

Technical specifications

Production:	500 bph
Labelling tolerance:	± 3 mm
Work cycle:	analogic board
Max. number of stations:	1
Paper passage:	170 mm max.
Printer:	optional
Motor:	DC motors encoder-controlled
Bottle ejection:	manual
Pneumatic supply:	none
Air consumption:	none
Power supply:	230 V, 50 Hz
Absorption:	0,5 kW
Packaging:	Pallet
Weight:	25 Kg without packaging
Maximum dimensions:	see overall dimensions

7.01.02 DIMENSIONAL MEASUREMENTS AND OTHER SPECIFICATIONS

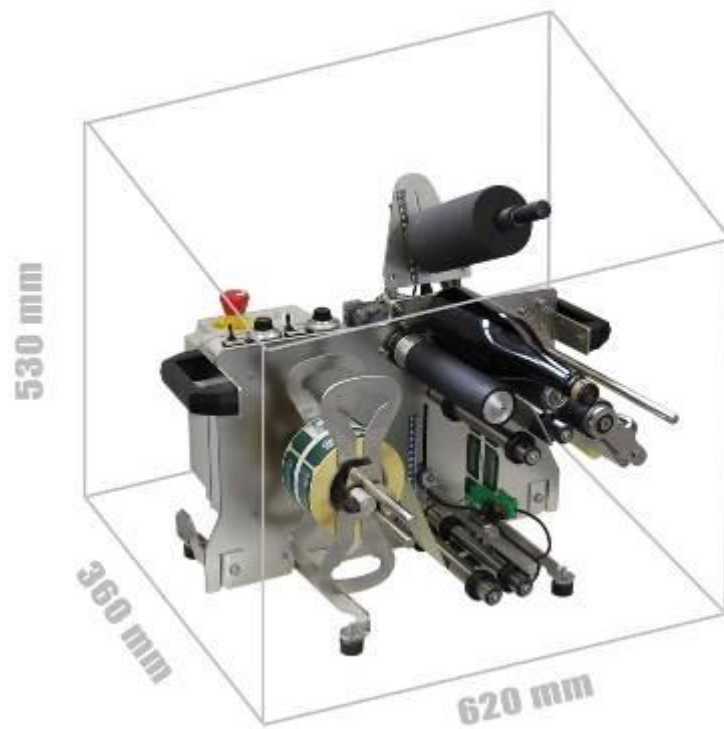


Photo 7.1 Main circuit breaker



Photo 7.2 Emergency push button

7.02 Description of the machine

This new model is really essential: our goal was to realize an extremely simple machine being able to work with cylindrical container with a diameter between 35 mm and 120 mm. The base model can apply front and back label, and, as the upper model LXT05, can work also with PET containers or containers made of low physical resistance to pressure material. To be noticed is the stainless steel plate which retains the paper reel: it is equipped with a friction system that let the paper roll scroll fluently, without breaking the paper. The peeling blade is made of stainless steel and, upon request, can be covered by a Teflon strip in order to reduce any paper breaking even in case of particularly fragile papers. The paper detection photocell has a 40 mm height fork and is auto-calibrating.

As it is really competitive on the market and basicly projected, this machine has no accessories except for the stainless steel carriage.

7.03 Composition of the machine

01. Machine body
02. Control panel



Photo 7.3 Machine body



Photo 7.4 Control panel

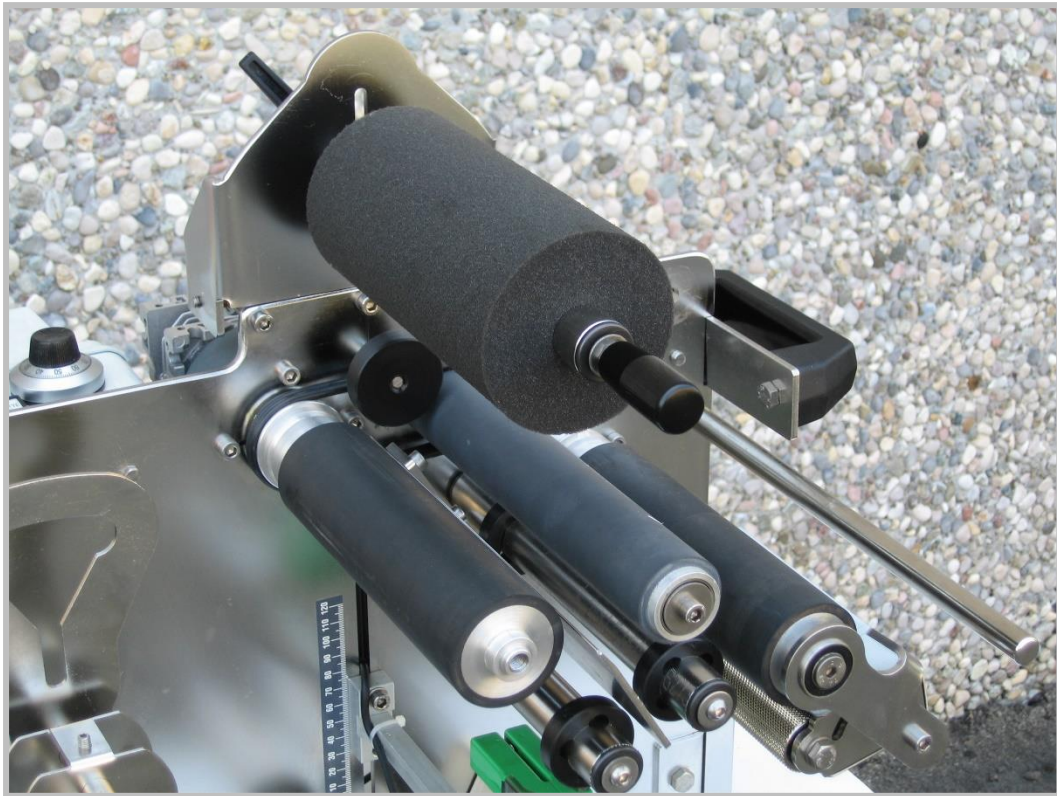


Photo 7.5 Labelling side



Photo 7.6 Labels' reel installed

7.04 Control panel

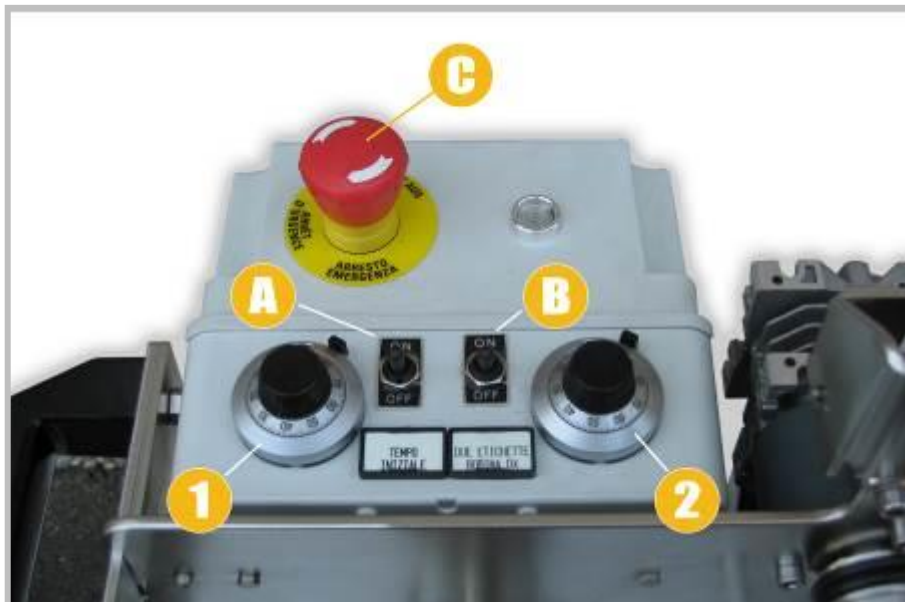


Photo 7.7 Control panel

01	Potentiometer DELAY OF LABELLING START-UP
02	Potentiometer for LABEL vs. BACKLABEL CENTERING
A	Switch to ENABLE INITIAL DELAY OF LABELLING START-UP
B	Switch to ENABLE 2 LABELS PACKAGING WITH COMBO REEL
C	Emergency push button

Table 7.1 Buttons and switches on control panel

START-UP

After having installed the machine as described in chapter 6, you can proceed with start-up.

8.01 Turning the machine on and off

8.01.01 PRELIMINARY OPERATIONS BEFORE TURNING THE MACHINE ON

To turn on the machine, you must:

- Trip the main circuit breaker photo 7.1 on the position 1.
- Disengage the emergency push-button C photo 7.7 on the upper side of the control panel.

8.01.02 STOPPING THE MACHINE

It is possible to stop the machine while it's working by acting on the emergency push button: in this case all machine movement is stopped regardless of the work cycle progress status. It is not possible to know exactly the work cycle phase when the machine has stopped, therefore, before turning on the machine, it is necessary to raise the pressing roll, take the bottle off and re-position the label in order to make it stick 3-4 mm out of the blade (fig. 9.10 page 28).

WORK CYCLE

The work phases for the labelling machine mod. M2R are listed below:

- Container loading
- Labelling
- Container discharge

9.01 Container loading



Photo 9.1 Container loading

- Open the pressing roll 1 and keep it opened
- Insert the container in the labelling position
- Pull the pressing roll down on the container: the labelling phase starts automatically.

9.02 Labelling

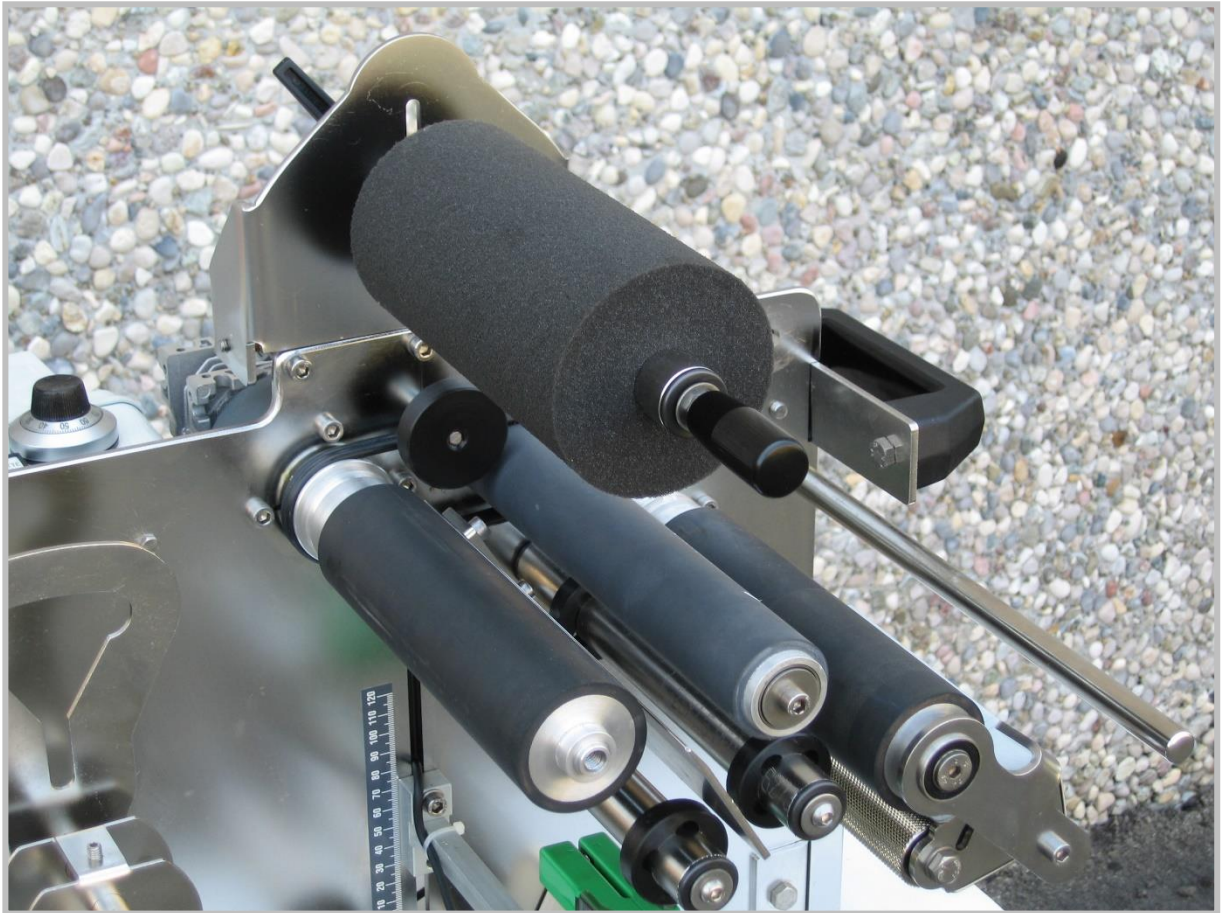


Photo 9.2 Labelling side

Once you have inserted the container and pull the pressing roll down on it, the packaging goes ahead:

- The container starts rotating and the selected labels are applied on it.
- After all the labels have been applied, the container stops rotating to allow its discharge and the insertion of a new container to be labelled.

9.03 Container discharge



Photo 9.3 Container discharge

Completed the labelling phase, put the pressing roll up to remove the labelled container.

Warning: do not lift the pressing roll up to its end run because it causes a new labelling cycle to start, with consequent waste of labels.

9.04 Adjustments

9.04.01 HOW TO ADJUST THE CONTAINER'S DIAMETER



Photo 9.4 Adjustment of the container's diameter

To adjust the container diameter, loosen the handle B, move the pressing roll C in the desired position by referring to the ruler A beside and lock again the handle.

9.04.02 HOW TO ADJUST LABEL PHOTOCELL



Photo 9.7 Adjustment of the label photocell

The machine is fully-adjusted when it leaves the factory.

However, should it prove necessary to adjust the photocell because a type of paper other than that for which it was originally set is used, proceed as follows:

For TELEMECANIQUE model

- 1) Power on the photocell: the LED 1 green turns on;
- 2) Position one label right by the reading head of the photocell;
- 3) Push SET button (the LED 1 green turns off) and keep it pressed until the LED 1 green starts flashing;
- 4) Scroll the paper band in order to make the photocell detect the paper support within one label and the next one;
- 5) Push SET button and wait the photocell to auto-calibrate; at the end only the green LED 1 is turned on;
- 6) The calibration is complete: when one label is detected, the LED 2 yellow lights on.

9.04.03 HOW TO ADJUST LABEL'S POSITION FROM THE BOTTOM OF THE CONTAINER

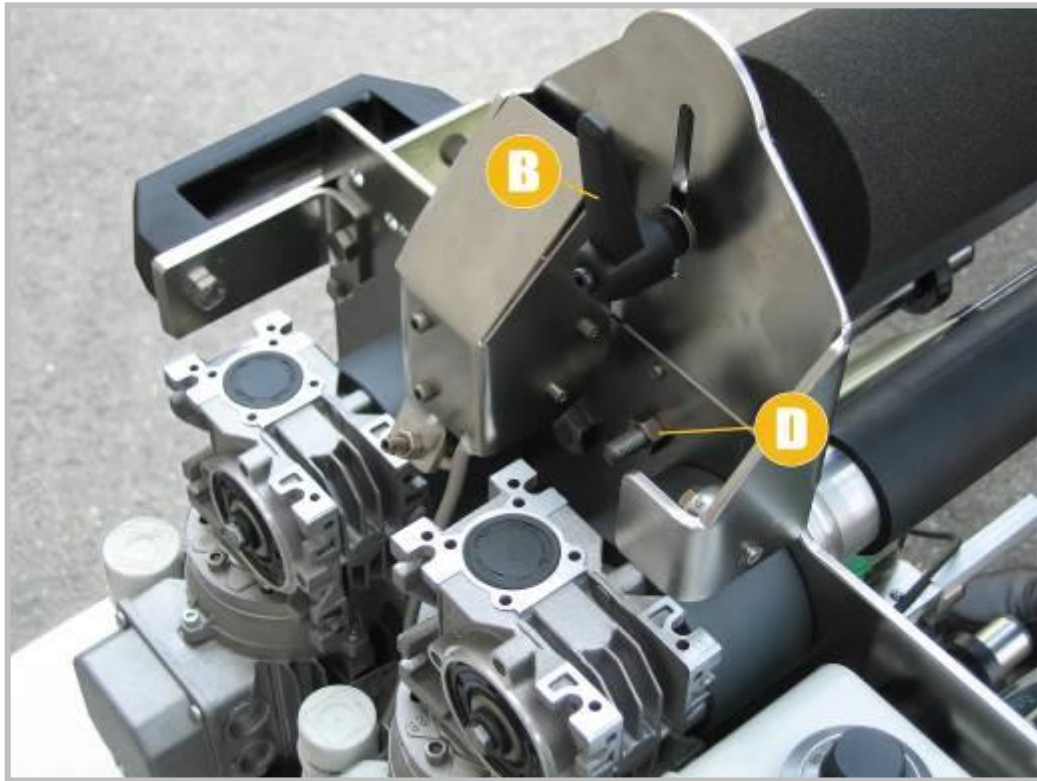
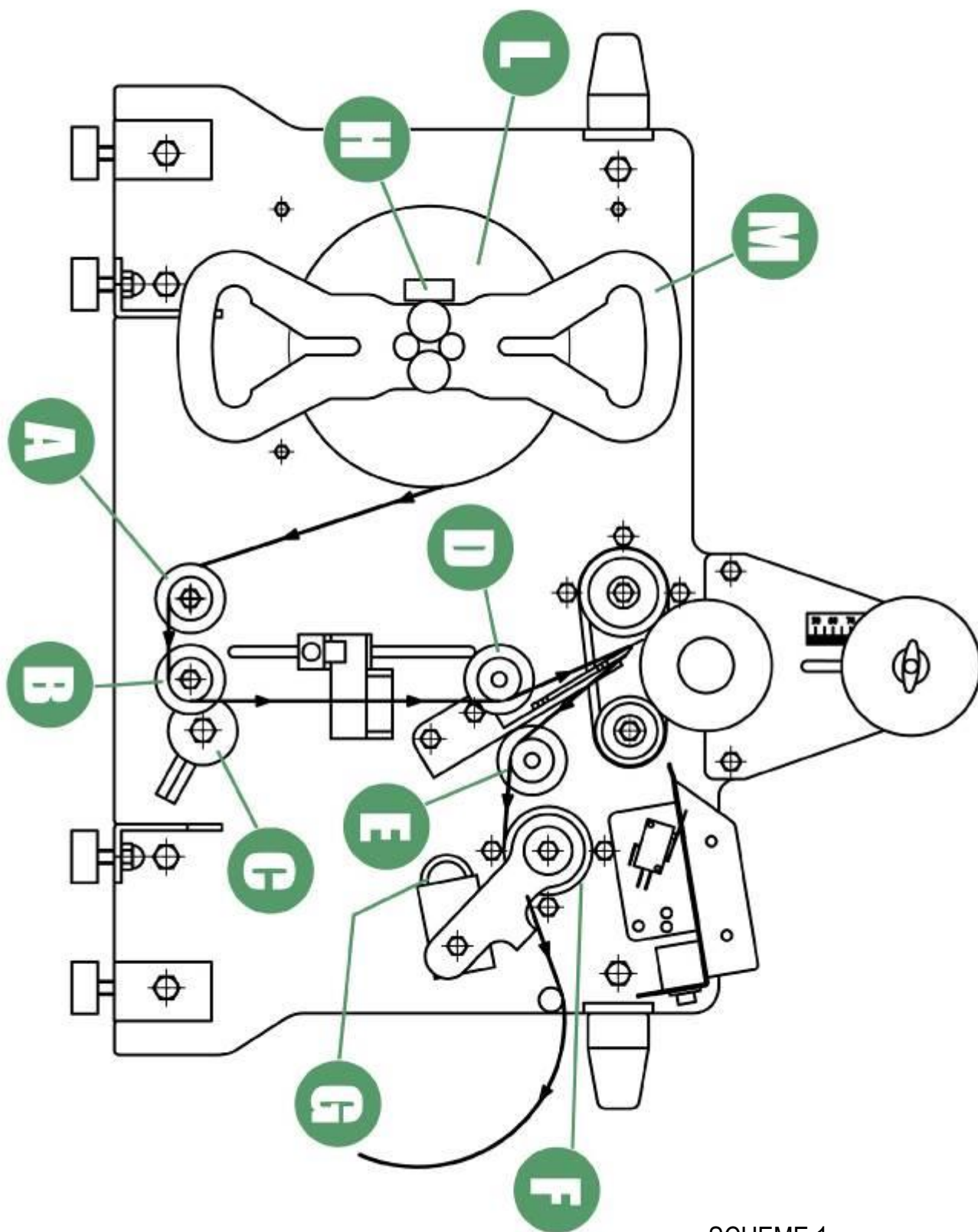


Foto 9.8 Adjustment of the label's height from the bottom

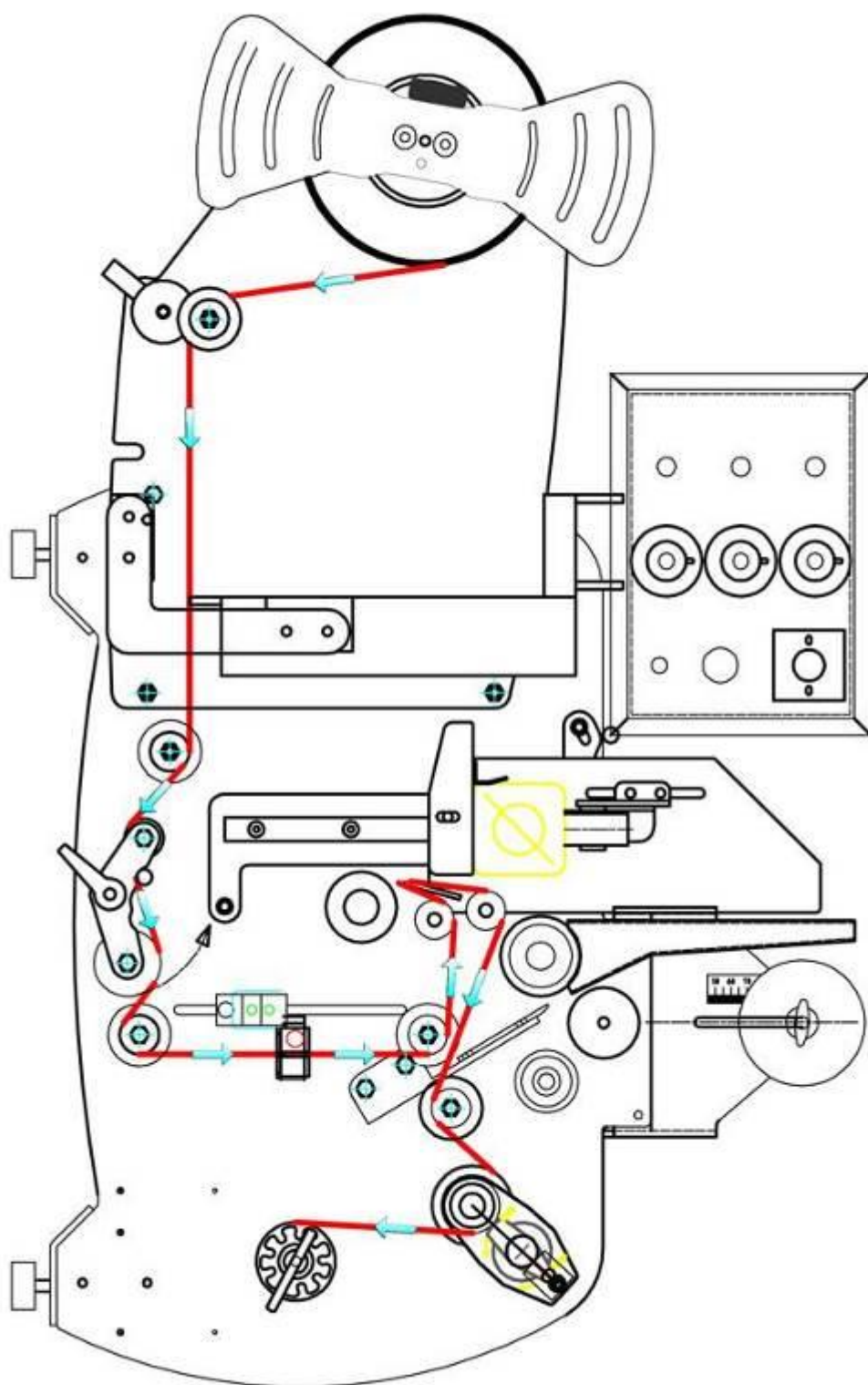
To change the height of the label from the bottom of the container, loosen the nut D, screw the lock 1 on or off until it reaches the right position, then tighten again the nut D.



Photo 9.9 Detail of the bottom lock



SCHEME 1



SCHEME 2
(paper path with square bottle)

9.04.04 INSERTING LABEL'S REELS

To insert the paper roll in the labelling station, see layout SCHEME 1 page 26.

- a) Loosen the knob H, remove the reel retaining plate M.
- b) Open the tensioning roller C and the knurled driving roller G.
- c) Insert paper roll and scroll the band following the paper path as shown in SCHEME 1.
- d) Re-assemble the reel retaining plate M by leaning it against the paper roll and by pressing 3-4 mm on the compression springs. Warning: do not press completely the springs to avoid the paper roll being blocked and the scrolling of the paper being hard.
- e) Scroll the paper to position one label out 3-4 mm from the blade as shown in photo 9.10
- f) Retain the paper and press the knurled driving roller G against the rubber drive roller.
- g) Close the tensioning roller C.

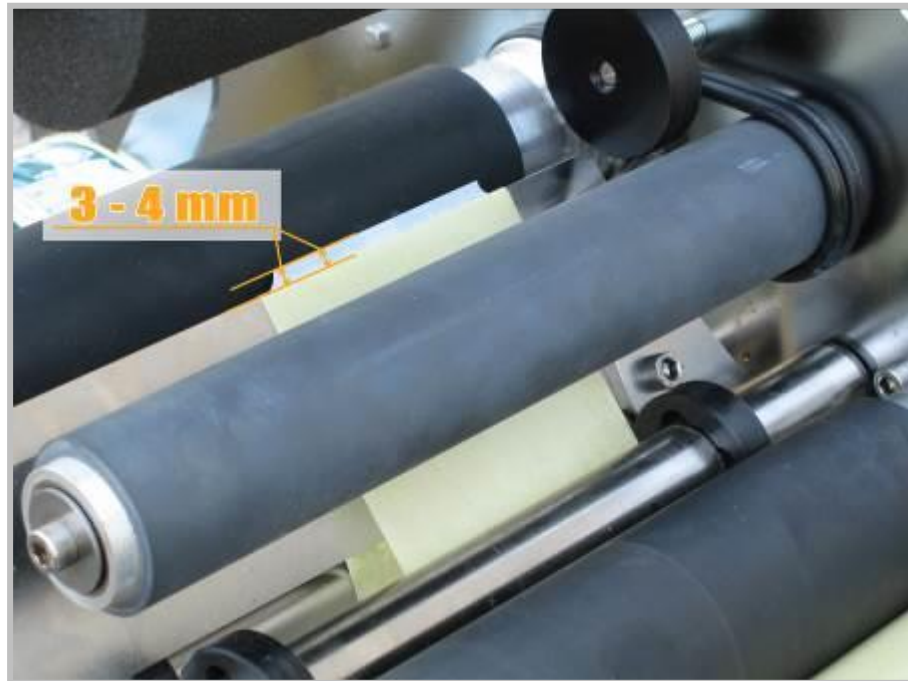


Photo 9.10 Label output from blade

9.04.05 LABEL POSITIONING ON THE BLADE

Warning: This adjustment must be performed after turning the machine off.

The labels must be positioned 3-4 mm out of the blade as in picture 9.10. If not, scroll **manually** the paper to position the label 3-4 mm out of the blade, then adjust the label photocell as in picture 9.7 by moving the photocell support.

Important: in case of combo reels, make sure that the label photocell is reading the same label as that being positioned 3-4 mm out of the blade.

9.04.06 FINAL CHECK (BEFORE INSERTING THE FIRST CONTAINER)

1. Do not insert any container
2. Open completely the pressing roll
3. Close completely the pressing roll
4. The machine starts working and completes a whole work cycle.
5. Remove the label that has been flipped out and check that the next label is positioned 3-4 mm out of the blade. If not, refer to par. 9.04.05 to adjust the label output.

9.04.07 KIT FOR SQUARE OR SHAPED BOTTLES (ONLY FOR MODEL M2R)

By installing the proper optional kit, the labeller can apply up to 2 labels on square and shaped containers (label and back label on the same paper reel) in two different work cycles by manual overturning of the container.



Photo 9.12 Control panel with selector for square bottles.

The control panel has an additional switch to select the type of packaging (square bottle active or not). Before labelling, some preliminary adjustments are required, as listed below. **Important:** they must be performed with the machine turned off and by deselecting the square bottle:



Photo 9.13 Label photocell

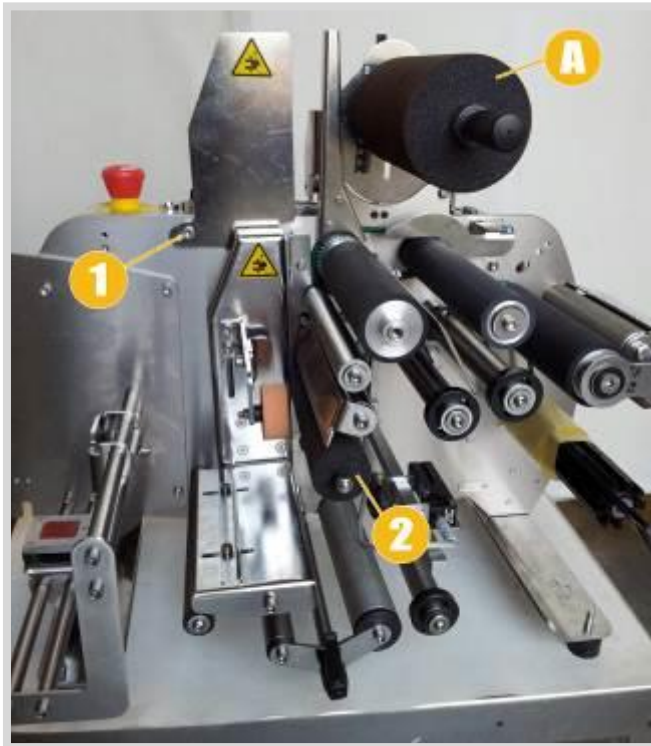


Photo 9.14 The carriage is disengaged from the driving gear

Step 1) Remove the paper and re-insert it following the paper path SCHEME 2 page 27.

Step 2) Check that the label is 1-2 mm out of the label and that the label photocell is in reading condition, as shown in photo 9.13;

Step 3) Now turn the machine on and check the label output on the blade and the label photocell positioning (don't select the SQUARE mode yet): simply open the pressing roll A to start the work cycle and perform all the required tests. If necessary adjust the label output on the blade, ref. par. 9.04.05.

Step 4) Loosen the screw 1, move the carriage up to its upper end, push it totally on the right, then tighten the screw 1 photo 9.14 and release the carriage: the rack automatically engages in the gear that makes the carriage move (photo 9.16).

Step 5) Put the container on the carriage and place it flush with the bottom platform by adjusting the screws B and C photo 9.15.

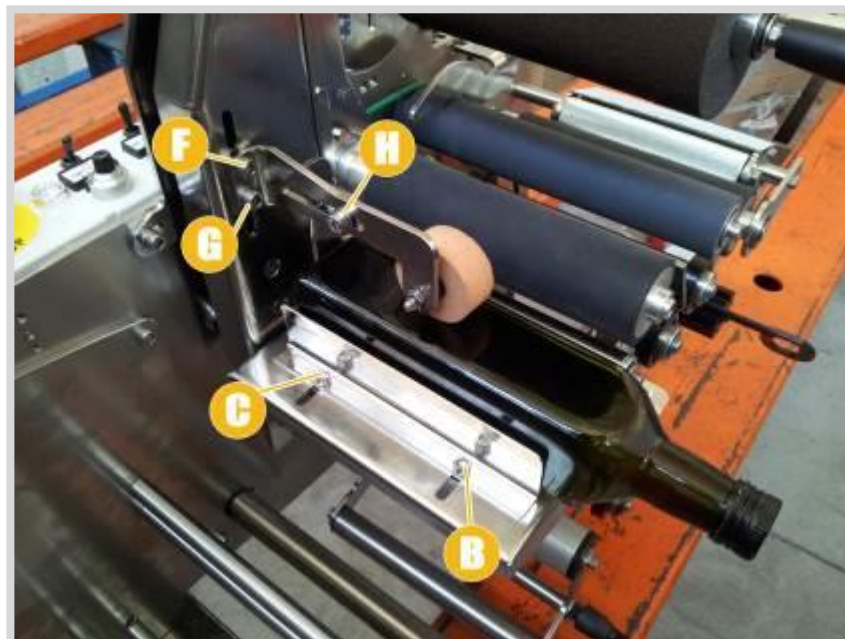


Photo 9.15 Adjustments for square/shaped containers

Step 6) Adjust the upper pressing roll by acting on the screws F and G photo 9.15 in order to make it press for 2-3 mm, as shown in the picture.

Step 7) Adjust the label's height from the bottom by acting on the screws H photo 9.15 in order to slide the bottom-support along its ring.

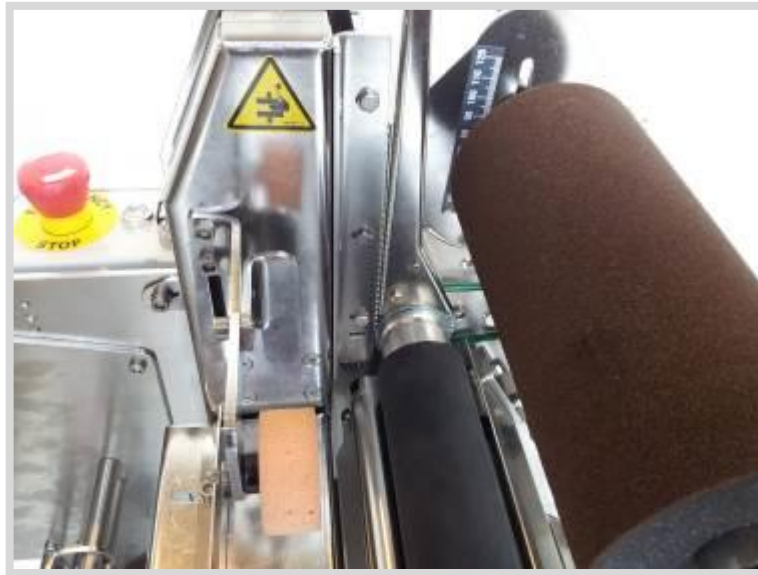


Photo 9.16 Square bottle carriage engaged

Step 8) When all adjustments are completed, you can start labelling square bottles:

- Enable the square packaging function by acting on the switch H on the control panel (move the lever downwards the ON label).
- Put the container on the carriage which must be placed to its upper end engaged in the gear (ref. photo 9.16).
- Raise the pressing roll A photo 9.16 to make the work cycle start.
- The carriage lowers itself to perform the labelling.
- Once labelled the container, the carriage raises to its upper end and the machine stops, waiting for a new cycle.

To center the label on the container-front, use the potentiometer P placed under the switch H that enables the square packaging (ref. photo 9.12).

After the labelling phase, the carriage moves to its upper end: you can take the container off and insert a new one or re-insert the same overturned to apply the back label (it is necessary to raise the pressing roll A again to make the work cycle start).

Check the position of the label and neck label

MAIN CORRECTIONS ON CYLINDRICAL CONTAINERS

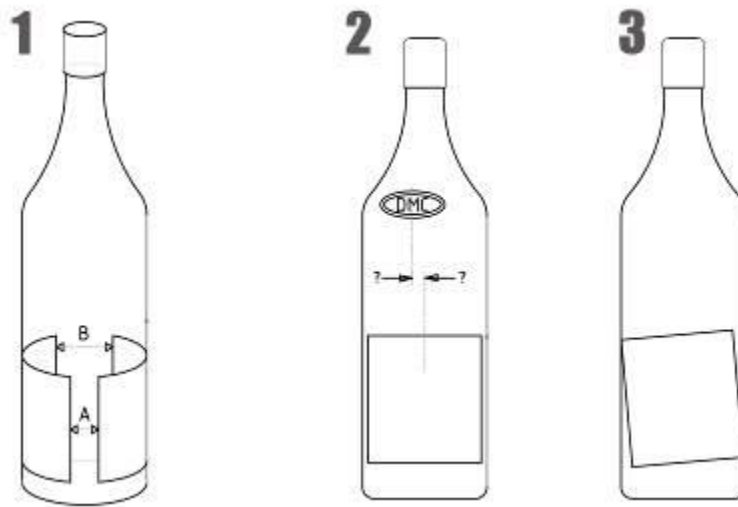


Figure 9.1 Corrections on cylindrical containers - Caption: 1) centering between front and back label
2) centering between label and spot 3) label alignment

Case 1) To adjust the centering between front and back label use the potentiometer 2 on the control panel (photo 7.7).

Case 2) To adjust the centering between label and spot use the potentiometer 1 on the control panel (photo 7.7).

Case 3) To adjust the label alignment loosen the screw photo 9.17 and incline the peeling blade.

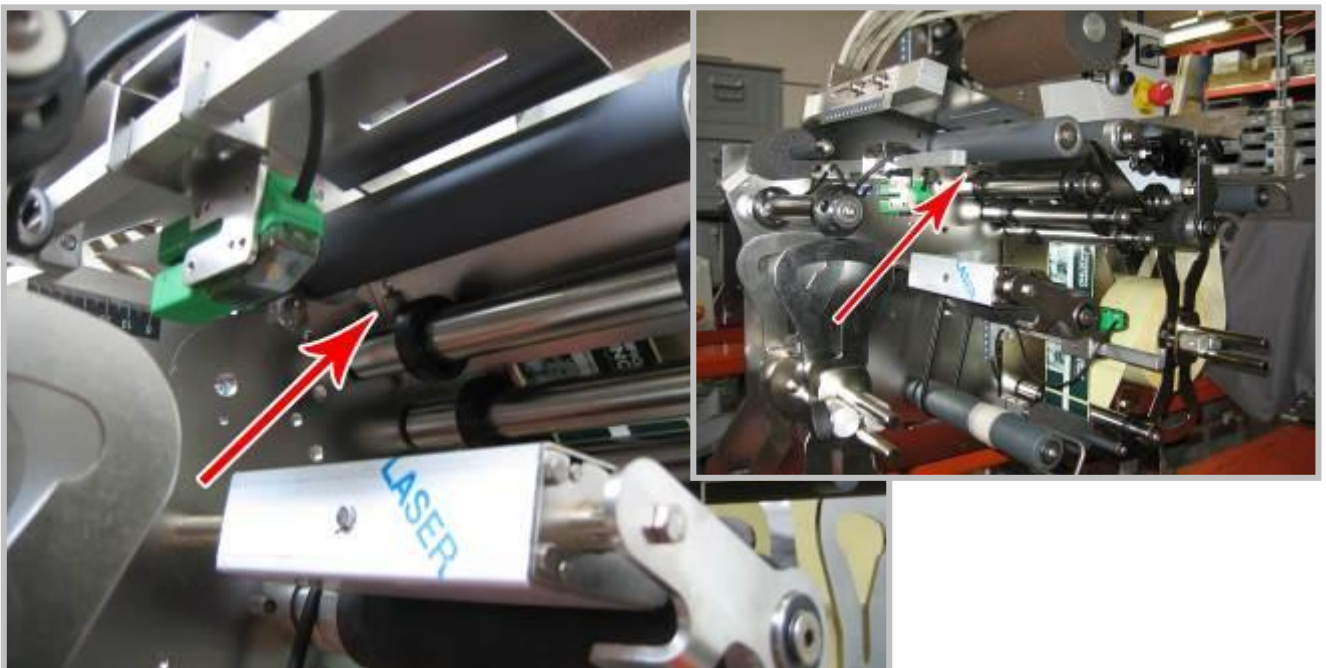


Photo 9.17 Adjustment of the blade slope

MACHINE MAINTENANCE

10.01 Schedule checks and maintenance

- a. Cleaning of the rubber driving roller G (scheme 1 and 2). Depending on the type of paper, every 5.000/10.000 labels, clean using a nitre diluent or acetone and a clean cloth.
- b. Clean the label application rollers every 5.000/10.000 labels using a nitre diluent or acetone and a clean cloth.
- c. Replace the teflon adhesive, if present, on the peeler blade every 5.000 labels.
- d. Replace the paper tensioning sponge rollers C every 5.000 labels

TROUBLESHOOTING

01. THE LABEL IS NOT CENTERED VS. SPOT ON THE CONTAINER

- Use the potentiometer 1 on the control panel, ref. photo 7.7

02. AS IT MOVES OVER THE PATH, THE PAPER TENDS TO LOOSEN

- Check that the tensioning sponge C scheme 1 is set against the path bushing.
- Check that the label is 3-4 mm out of the blade (photo 9.10)

03. THE PAPER BREAKS AS IT WINDS ALONG ITS PATH

- Check that the plastic paper driving bushing doesn't fray the paper
- Check the paper winding path (scheme 1)

04. WRINKLES ON THE RIGHT SIDE OF THE LABEL

- The most likely cause is that the glass in the container is warped; replace the pressing roller C (photo 9.1) with a roller of a more solid material (rubber).

SCHEMES

