

SEMI-AUTOMATIC MECHANIC CAPPING MACHINE

TSM-2005



USE AND MAINTENACE MANUAL

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DICHIARAZIONE DI CONFORMITA'
DECLARATION OF CONFORMITY
DECLARACIÓN DE CONFORMIDAD

PRODOTTO – PRODUCT - PRODUCTO
TAPPATORE - CAPPING MACHINE - TAPADORA

MODELLO - MACHINE MODEL - MODELO
TSM-2005

CARATTERISTICHE ELETTRICHE - ELECTRICAL FEATURES - CARACTERÍSTICAS ELÉCTRICAS
110 [V] – 50/60 [HZ] – 0,55 [Kw] – 1 Phase

TIPO – TYPE - TIPO
SEMI-AUTOMATICA MECCANICA / SEMI-AUTOMATIC MECHANIC / SEMIAUTOMATICA MECANICA

ANNO DI FABBRICAZIONE - YEAR OF MANUFACTURE / AÑO DE FABRICACIÓN
06/2020

NUMERO DI MATRICOLA – SERIAL NUMBER - NÚMERO DE SERIE
TCM-21-070

Sotto la nostra esclusiva responsabilità, dichiariamo che la tappatrice semiautomatica fornita a cui la presente dichiarazione si riferisce è costruita conforme alle seguenti prescrizioni:

- Direttiva 2006/42/CE (**Direttiva Macchine**)
- Direttiva 2014/35/UE (**Direttiva Bassa Tensione**)
- Direttiva 2014/30/UE (**Direttiva Compatibilità Elettromagnetica**)

La macchina è inoltre conforme alle Norme armonizzate CEI EN 60204-1 (Aprile 1998), UNI EN 292/1 e UNI EN 292/2 (Novembre 1992) e UNI EN 294 (1993).

Under our exclusive responsibility we declare that the semiautomatic machine supplied to which the present declaration refers it is built according with to the following prescriptions

- Directive 2006/42/CE (**Machine Directive**)
- Directive 2014/35/UE (**Low Tension Directive**)
- Directive 2014/30/UE (**Electromagnetic Compatibility Directive**)

The semiautomatic machine supplied is furthermore corresponding to the harmonized rules CEI EN 60204-1 (April 1998), UNI EN 292/1 and UNI EN 292/2 (November 1992) and UNI EN 294 (1993).

Y 'nuestra única responsabilidad, declaramos que la máquina que capsula semiautomática suministra a la que se refiere esta declaración está construido de acuerdo con los siguientes requisitos:

- Directiva 2006/42/CE (**Directiva de Máquinas**)
- Directiva 2014/35/UE (**Directiva de baja tensión**)
- Directiva 2014/30/UE (**Directiva de Compatibilidad Electromagnética**)

La máquina también cumple con las normas armonizadas CEI EN 60204-1 (abril de 1998), UNI EN 292/1 y 292/2 ES (noviembre de 1992) y EN 294 (1993).

1 Foreword

The Semiautomatic Mechanic Capping Machine which we have supplied, has been realized thanks to the experience accumulated over thirty years in the application of closures and after long study and planning.

The degree of functionality of this machine is first rate and in order not to impair its quality and functionality, our Company suggests that you follow with the utmost care the contents of this Manual of Use and Maintenance and declines all responsibilities given under guarantee for defects caused by the non-compliance to these instructions.

It is forbidden to reproduce all or parts of the contents and drawings of this Manual without the expressed written authorization of our Company.

The company will legally defend its own interests according to the existing laws.

2 Expected utilisation

This specific machine model has been designed, made and certified for the sole purpose of applying only aluminium or other metal closures.

The machine can be used only if all safety protections are in place according to existing CEE Norms.

The bottles must have the following characteristics:

Material	Diameter Min.	Height Min.	Diameter Max.	Height Max.	Capacity Min.	Capacity Max.
Glass	25 mm	80 mm	160 mm	350 mm	0.15 mm	5 litres
PET *	25 mm	80 mm	160 mm	350 mm	0.15 mm	5 litres

Important

Our Company declines all responsibilities derived from diverse utilisation which is not that specified or for the utilisation of material (caps and containers) with different dimensions (diameter/height) than those previously specified and confirmed during the ordering of the capping machine and its head.

Semiautomatic mechanic capping machine TSM-2005 particularly useful for professional use, laboratories, wine makers, and/or small scale productions.

3 Noise level

The measurements to establish the noise level of the machine have been carried out according to **UNI 7712** Norms.

The phonometric tests carried out on this specific machine model have ascertained a noise level of: **Lpa < 70db**

4 Technical data

Characteristics	TSM-2005	U.M.
Weight Max	100	[Kg]
Height Max	992	[Mm]
Width Max	285	[Mm]
Depth Max	425	[Mm]
Electric Power Supply	110/120	[V]
Frequency	50/60	[Hz]



Attention

This operation must be carried out only by a qualified electrical engineer

- Check that the electric motor does not heat up excessively.
- Check that all the machine components are correctly assembled and lined up with their own working axis, connected and securely fixed.
- Verify that the supply, electrical is correctly connected.
- Verify that there aren't any mechanical irregularities, foreign bodies in the working area, micro-switches and protections wrongly mounted.
- Verify all safety systems, protections against accidents, emergencies and control devices.
- Verify that the working area is not cluttered with cables, pipes etc which can be impede normal working operations and be of danger to personnel.
- Verify the correct working of the main switch board, of the warning lights and the relationship between controls and movements.



Attention

All electrical connections must be carried out by qualified personnel for the assembly and maintenance of the machine and individually equipped with the necessary protection equipment.

The setting up of the machine and its adjustments must be carried out with the machine switched off and all sources of power deactivated. Before proceeding with any manual movement, necessary for the setting up of the machine and its accessories, make sure that the working area is free of any tools and there aren't any irregularities, to avoid danger to people and damages to the machine.

6 Adjustments

6.1 Height

Measure the bottle (from the bottom to the upper rim) and position the top of the bottle carrier plate to the measured height through the following steps:

- Loosen the upper nut and/or lower shown in the figure
- Lift/lower the bottle carrier plate by turning it. (Clockwise to lower, anticlockwise to lift).
- Lock the safety nuts.
- Ensure that the nuts are fully tightened.

Example

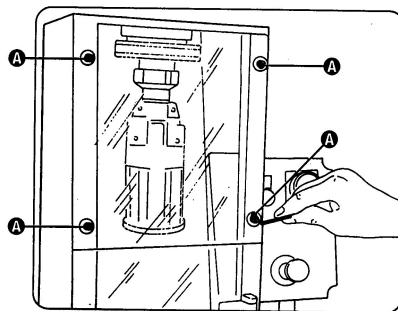
If the bottle o/all height is 300 mm bring the top of the bottle rest plate in line with 300 mm on the graduated scale.

7 Substitution of the capping head

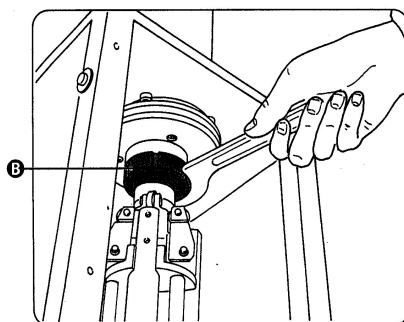
Each closure must be applied with the corresponding capping head.

To substitute the capping head it is necessary to:

- Set the main switch on "0" and unplug the machine from the mains.
- Loosen the four screws (A) and remove the plexiglass protection.



- With the appropriate key unblock the lever (B) and remove the capping head.
- Fix the new capping head and lock it in position by screwing the locking nut(B).
- Reset the plexiglass protection with the four screws previously removed.



8 Preliminaries and utilisation



Attention

The operator must ascertain that there aren't other persons, or animals in the working area.
Ensure that there aren't any foreign matters on the machine.



Attention

**Strictly use non-slip gloves and/or non-scratch against accidents.
Strictly use protective eye glasses against accidents.**

- Place the capping machine on its side on a table or solid base.
- Put under the base of the machine the supporting feet which have been supplied for this purpose.
- Lift the machine in its vertical position.
- Check that the voltage indicated on the machine tag corresponds to that of the supply mains.
- If it does not correspond, modify the electric motor connections.



Attention

All electrical connections must be carried out by qualified personnel charged with the setting up and maintenance of the machine.

This personnel will be equipped with the prescribed individual means of protection.

- Insert the plug in the mains and operate the main switch to give current to the machine
- Manually operate the starting switch (From 0 to 1)
- Check that the capping head rotation corresponds to that indicated by the arrow
- Position the bottle with the closure on the bottle support (check that the correct height has been set – note 6.1 refers)
- Press the push-buttons on the sides of the machine base and keep them pressed until the bottle support returns in the starting position.

9 Maintenance

Weekly Ordinary Maintenance

- Oil all threaded and tuck-under rollers.

Note

It is advisable to use lubricants for alimentary machinery according to existing FDA regulations.

Half-yearly Ordinary Maintenance

- Check driving belt tension.
- Tighten all screws and bolts.

Half-yearly Ordinary Maintenance

- Check all systems of protection installed on the machine.

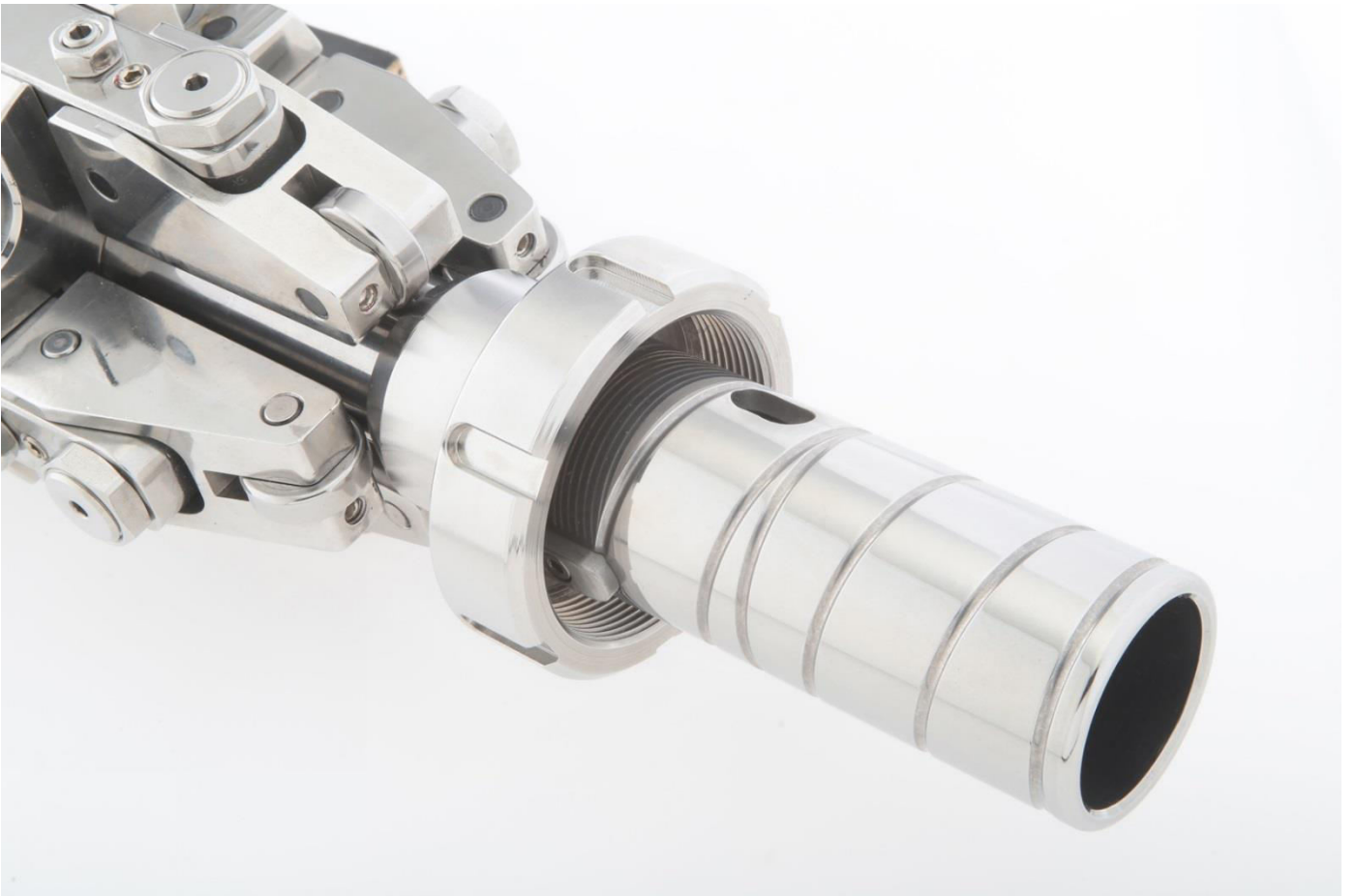
10 Guarantee

Our Company guarantees that the mechanic capping machine and /or all parts and components fabricated by the Company, have been designed, made and tested to warrant, besides the good function of the machine, also the required protection of the operators.

The guarantee of the machine is valid for twelve months from the date of delivery or invoice date; are excluded from the guarantee all damages caused by fall or bad operating conduction of the machine, non-observance of the ordinary preventive maintenance program and installation, as well as incorrect operating handling by qualified personnel.

Any modification and/or tampering of the product, particularly to the safety systems, will cause the guarantee to be null and will relieve the Constructor of all responsibilities.

The machine serial number and the model, impressed on the machine identification tag, are considered the primary references to identify the machine for whatever type of occurrence.



SETTING AND ADJUSTMENT CAPPING HEAD M14

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General

The capping head is a compact group entirely made from stainless steel and mountable on the capping machine turret.

The chuck diameter and ring nut to fix the capping head to the turret conform to the existing standards (M52x1.5)

Some elements of the capping head vary dimensionally according to the size and type of cap to be applied, so that the full range of caps from 18mm dia to 43mm dia can be applied as well as some special caps:

- Diameter 18÷25mm – Mignon Series
- Diameter 25÷35mm – Standard Series
- Diameter 38÷43mm – Large Series

To reduce to a minimum the maintenance operations, the idle shaft is mounted on radial and oblique stainless steel bearings.

The capping head is mounted at the end of a vertical shaft and is completed at its lower end by a particular pressure-block.

This pressure block is fitted with a "NO-CAP NO-ROLL" device which stops the threading and tuck-under operation in the absence of the cap.

On the vertical shaft is mounted the cross piece which carries the four arms: two for the threading rollers and two for the tuck-under rollers.

The arms which carry the rollers are centrally balanced between two springs and are fitted in the upper end with cam-followers.

The cam followers, under the push of a conical cam, transmit through the arms, the radial load to the threading and tuck-under rollers.

The pressure or radial load of the threading and tuck-under rollers is adjustable by acting by means of a threaded bush, on the load of the springs situated at the extremities of the threading and tuck-under arms.

The lower end of the capping head carries, fixed by four columns, a centering plate which guides the capped bottle under the pressure-block to execute the application of the cap on the bottle finish.

To achieve the correct performance of the capping head M2009 a periodic maintenance as well as its accurate setting is indispensable.

A first and complete setting is given at the time of the final test of the capping head according to the specific characteristics of the cap to be applied or according to specific Customer requirements.

Read this Manual accurately and carefully observe the instructions therein in order to guarantee the optimal efficiency of the equipment.

NOTE : The heads are delivered adjusted to the type of closure ordered by the customer and do not require further adjustments. In the case where it was necessary to proceed with a new adjustment (after periodic maintenance or for a format change) follow the following steps. The keys for removal are not provided.

WARNING : Any inconsistent changes to the following instructions could lead to serious problems. Tecnomax-Due srl disclaims any liability from the failure to follow the instructions below.



For spare parts request please provide :

- **Serial number of capping head**
- **Type of aluminum cap used**

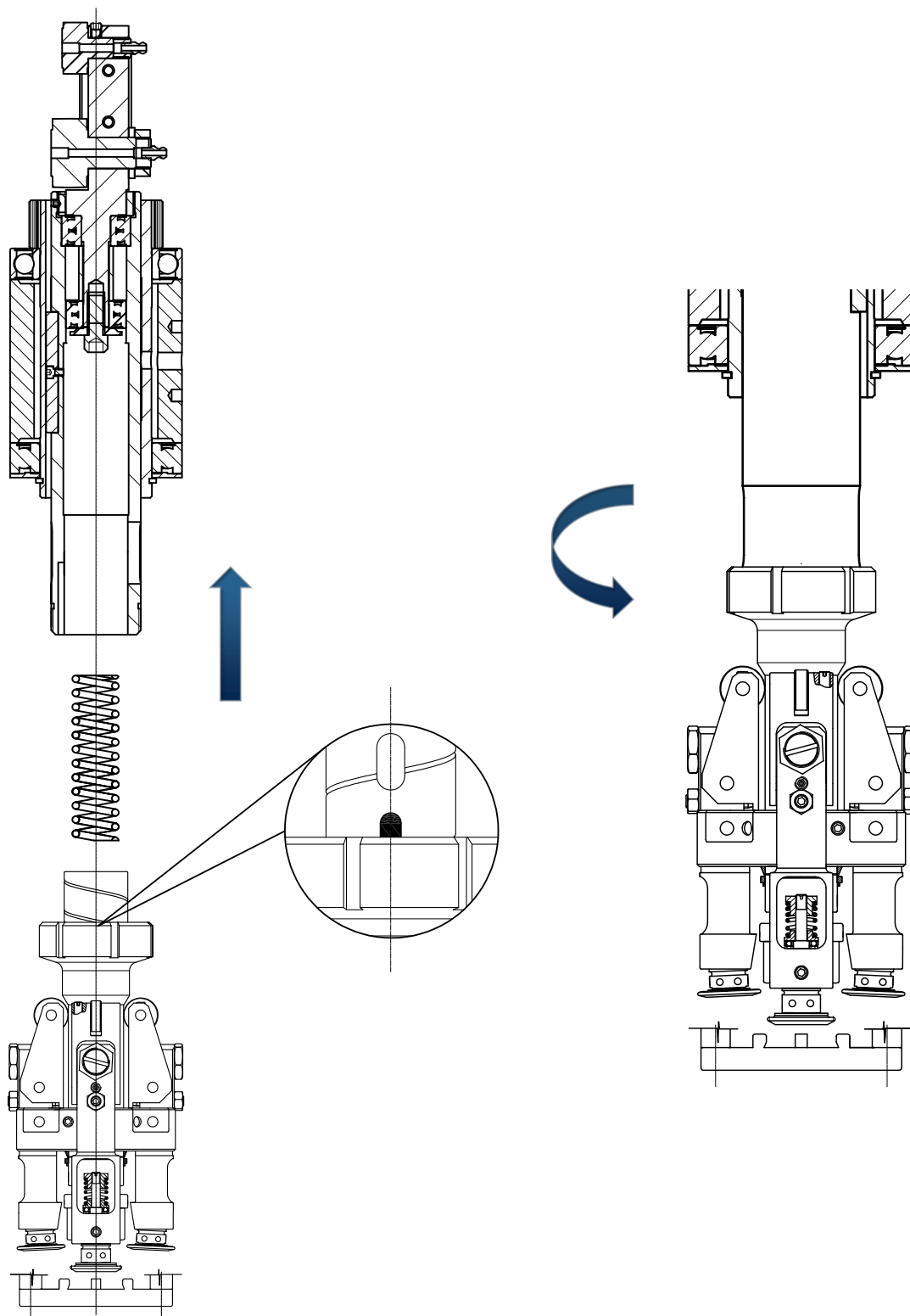
MOUNTING/DISMOUNTING THE HEAD ON THE CAPPING MACHINE

Mounting

- Place yourself with the capping head vertically in line with the head carrier shaft
- Thread the ring nut thus fixing the head to the head carrier shaft then using the special key supplied tighten and firmly lock the ring nut

Dismounting

- Loosen the ring nut with the key supplied
- Completely unscrew the ring nut by hand and remove the capping head.



HEIGHT ADJUSTMENT

Adjustment of rollers working diameter

Remove the centering plate by loosening the two screws

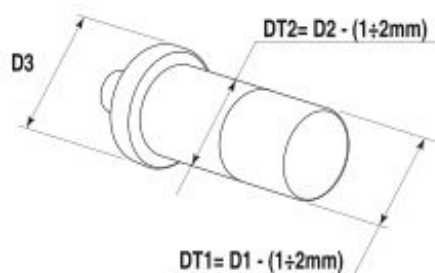
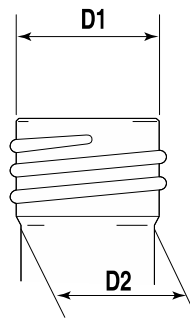
Measure the following diameters:

D1 = Diameter of the root of the thread

D2 = Diameter of the tuck-under (neck of the bottle)

D3 = Inner diameter of the pressure-block and diameter of the pressure-block DT3

With the above dimensions previously taken choose the round calibre which has the dimensions **(DT1, DT2)** $1 \div 2$ mm less than those taken.



Introduce the gauge/master inside the capping head and at the same time push cam downwards till you bring the arms in the closed position and the cam-roller to ride on the cylindrical portion of the cam as shown

With the capping head in this position, the threading rollers and the tuck-under rollers must touch the cylindrical part of the gauge/master as shown

If the rollers are too tight on the gauge/master (to the point of marking it) or they are too far away from touching it, it is necessary to adjust the load of the side spring of each arm by proceeding as follows:

- Release the lock nut on the side of each arm with key CH10
- Add the adjustment allen screw verifying that the roller rests on the cylindrical part of the gauge/master
- Tighten the lock nut

Repeat the same operations on all the remaining rollers.

Unlocking the cam bringing it back in the rest position (upward).

The arms in turn will widen as a result of a slight click, leaving the space necessary for the transition of the gauge/master

Once the adjustments remount the disc centering.



Height adjustment of the threading rollers

Fix the capping head on the capping machine.

Cut the upper part **A** of a cap making sure that the lining material does not fall out.

Mark with a marker the start of the thread **B** on the bottle finish.

Insert the bottle, with on top the part A of the cap previously cut, under the capping head and turn the bottle to make

sure that the reference mark on the start of the thread on the bottle finish is in line with the axis of the threading roller **C**.

Lower the machine so that the roller arms close. In this position the cam follower **D** must be 2[mm] upward on the

cylindrical profile of the cam. At this point the capping inner spring is completely loaded and its load should not allow

the bottle to rotate or even be removed.

Also at this point, verify that the threading roller is in line with the start of the thread **E** on the bottle and centered within the first two threads.

To carry out any adjustment it will be necessary to loosen the safety grub screw **F** thus freeing the bush of the threading rollers.

Screw (clockwise) or unscrew (anti-clockwise) this bush by introducing a long pin in the cavities **G**.

Once the adjustments are completed firmly lock the safety grub screw **F**.

Lift the machine so that the load on the capping inner spring is now released.

By operating intermittently the machine, turn the capping head intermittently and turning by hand the bottle bring the second thread rollers in line with the reference mark on the bottle.

Lower the machine thus bringing the arms in the closed position and repeat the above described operations.

Height adjustment of the tuck-under rollers

With the capping head mounted on the machine, insert the bottle with on top the part of the cap **A** previously cut and bring the center **C** of the tuck-under roller in line with the the reference mark on the bottle

Lower the machine so that the roller arms close. In this position the cam follower **D** must be 2[mm] upward on the cylindrical profile of the cam.

At this point the capping inner spring is completely loaded and its load should not allow the bottle to rotate or even be removed.

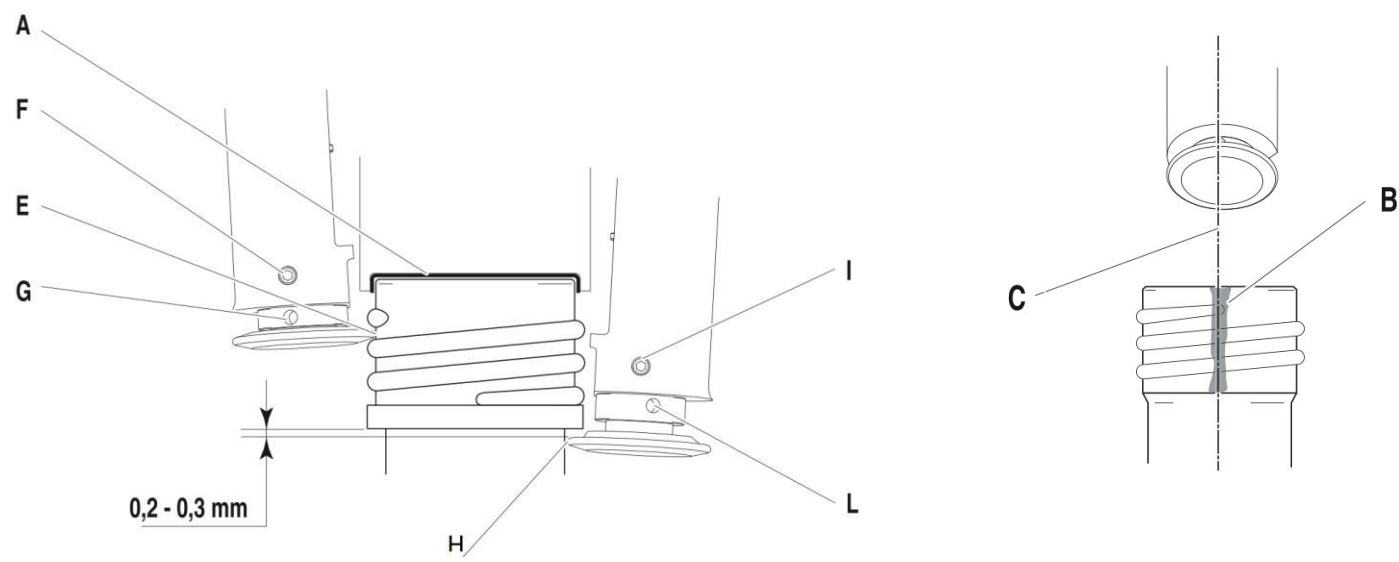
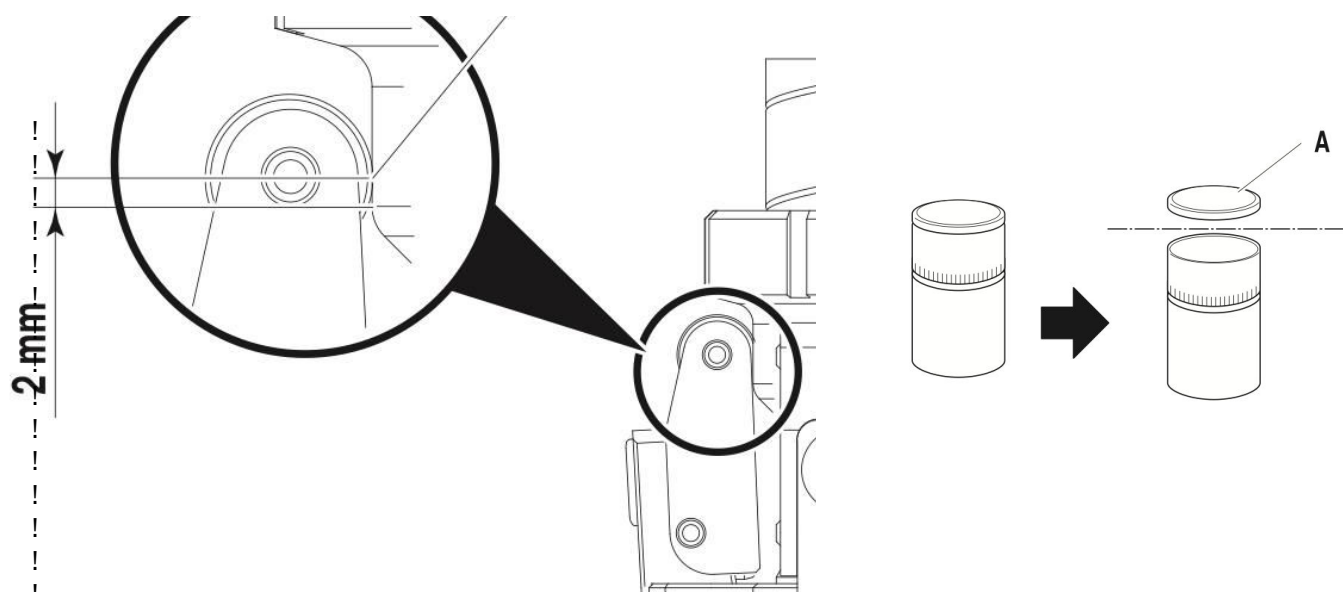
Also at this point, verify that the tuck-under roller is $0.2 \div 0.3$ [mm] below the neck of the bottle finish **H** (tuck-under line). Actually, this gap is the thickness of the skirt of the cap and therefore can vary according to the type of the cap to be applied.

In the case of caps with a shaped skirt or with particular metal thickness, it is in any case necessary to check this dimension by trial and error (capping a few bottles and observing the final tuck-under results).

To carry out any adjustments it will be necessary to loosen the safety grub screw **I** thus freeing the bush of the tuck-under rollers. Screw (clockwise) or unscrew (anti-clockwise) by introducing a long pin in the cavities **L**.

Once the adjustments are completed firmly lock the safety grub screw **I**.

Pictures for the adjustment of rollers



ADJUSTMENT OF ARMS RADIAL LOAD (SIDE PRESSURE)

Normally the radial loads of the arms are set according to the technical datas supplied by the manufacturers of the caps. However, if there should be anomalies in the formation of the thread on the cap on application, it is possible to carry out further adjustments.

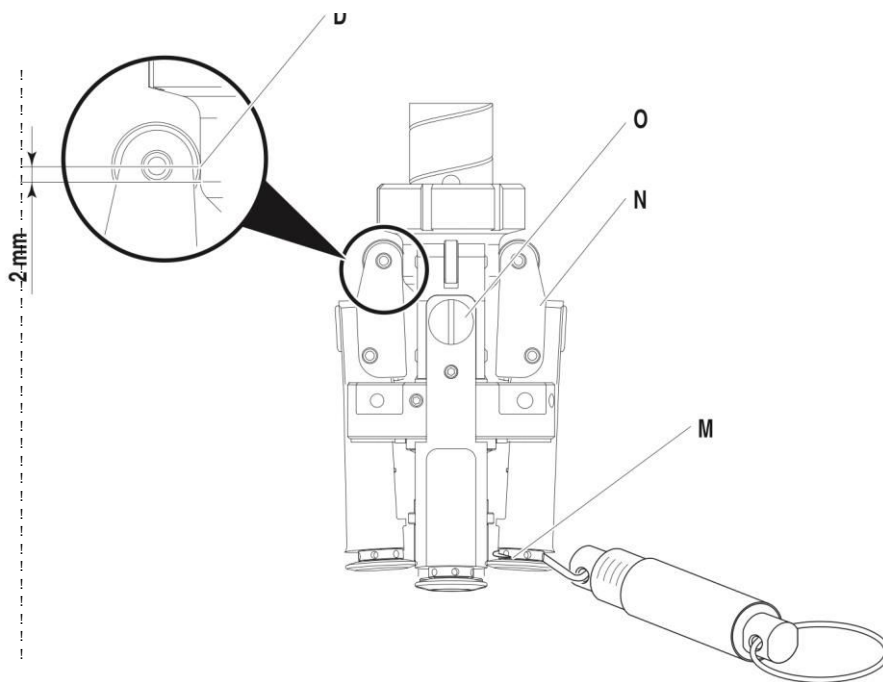
First of all it is necessary to check that the load on the spring of each arm is the same.

To measure this load it is necessary to hook the dynamometer to the arm at **M** and putting one hand on the fulcrum **N** of the lever to detect any small movement of the arm itself.

Pull hard on the dynamometer thus moving the arm towards yourself and read on the dynamometer the load of the spring the moment you feel any movement of the arm.

To adjust the radial load act on the screw **O**. Pay particular attention when screwing or unscrewing this screw because any little variation means a big load variation of the spring.

After verifying that all the arms are adjusted to the same load, carry out a few applications of the cap on the bottle thus verifying that it conforms to the technical specification.



If the quality of the application is acceptable, then it means that the loads on the arms are correct. If negative, repeat the above described adjustments. At this stage, by means of a "torquetester" verify that the effort to unscrew the cap is according to one's own requirements.



If this does not correspond modify the radial load of the arms bearing in mind that too much load can deform the cap (cut thread and/or irregular tuck-under) during the application of the cap on the bottle.

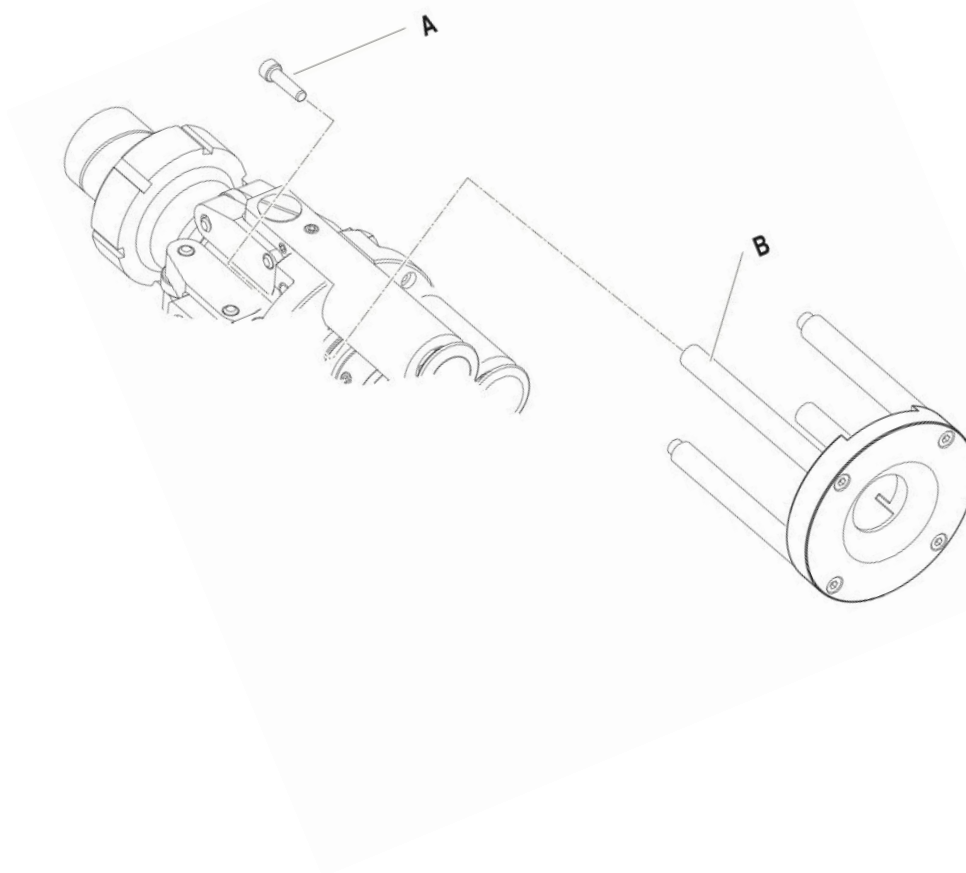
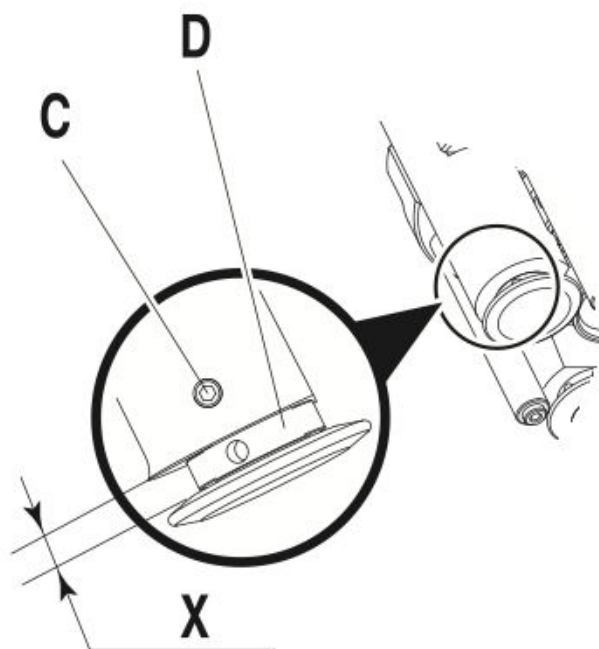
It is therefore necessary to carry out several trial and error applications until the right compromise is obtained which agrees with Customer's requirements.

Replacement of the roller

Prior to removing the roller to be replaced check with a caliber the dimension **X** between the arm and the flat part of the roller to be replaced.

Remove the centring plate by unscrewing the two screws.

Remove the safety grub screw **C** and completely unscrew the bush **D** thus freeing completely from the arm the whole roller group



MAIN SPRING AXIAL PRESSURE

- **Non-Carbonated liquids** - 80÷120 Kg (Closure Ø= 22 ÷ 25 mm) or 110÷140 Kg (Closure Ø= 28÷31,5 mm)
- **Carbonated liquids or wine application** - 180÷280 Kg (Closure Ø= 25÷35 mm)

Notes:

These values are indicative and theoretical and can be changed depending on the results obtained but above these values are given in the technical specifications for the implementation of cap issued by the manufacturer.

AXIAL PRESSURE (SHORT CONNECTION SINGLE HEAD CAPPER)

PAINT	SPRING HEIGHT [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 3 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 5 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 7 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 10 [mm]
VERDE	89 [mm]	50 [kg]	60 [kg]	70 [kg]	80 [kg]
BLU	89 [mm]	75 [kg]	85 [kg]	100 [kg]	110 [kg]
ROSSO	89 [mm]	160 [kg]	180 [kg]	205 [kg]	228 [kg]
GIALLO	89 [mm]	195 [kg]	220 [kg]	250 [kg]	280 [kg]

AXIAL PRESSURE (STANDARD/LONG CONNECTION MULTI-HEADS CAPPER)

WIRE DIAMETER [mm]	SPRING HEIGHT [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 3 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 5 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 7 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 10 [mm]
4	186 [mm]	30 [kg]	35 [kg]	40 [kg]	45 [kg]
4,5	186 [mm]	50 [kg]	55 [kg]	65 [kg]	70 [kg]
5	186 [mm]	80 [kg]	85 [kg]	105 [kg]	115 [kg]
5,5	186 [mm]	110 [kg]	120 [kg]	130 [kg]	150 [kg]
6	186 [mm]	160 [kg]	180 [kg]	195 [kg]	205 [kg]
6,2	186 [mm]	195 [kg]	220 [kg]	240 [kg]	260 [kg]

WIRE DIAMETER [mm]	SPRING HEIGHT [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 5 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 7 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 10 [mm]
4,5	145 [mm]	57 [kg]	64 [kg]	70 [kg]
5	145 [mm]	104 [kg]	112 [kg]	125 [kg]
5,5	145 [mm]	139 [kg]	154 [kg]	170 [kg]
6	145 [mm]	168 [kg]	192 [kg]	220 [kg]
6,2	145 [mm]	192 [kg]	220 [kg]	242 [kg]

WIRE DIAMETER [mm]	SPRING HEIGHT [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 5 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 7 [mm]	AXIAL PRESSURE ASSEMBLING PRE-LOAD 10 [mm]
4,5	172 [mm]	60 [kg]	72 [kg]	80 [kg]
5	172 [mm]	83 [kg]	102 [kg]	112 [kg]
5,5	172 [mm]	118 [kg]	129 [kg]	147 [kg]
6	172 [mm]	178 [kg]	194 [kg]	203 [kg]
6,2	172 [mm]	222 [kg]	235 [kg]	260 [kg]

Notes:

The choice of the type of spring axial load is based on the specifications of axial load required by the manufacturer of the cap, while the length of the spring of axial load depends on the type of capper.

The data shown in the table are to be considered theoretical and you may want to check this value using the proper equipment (load cell)

ROLLERS

Roller radial low

- Thread rollers - $7 \div 13$ [Kg]
- Tuck-Under rollers - $6 \div 13$ [Kg]

These values are indicative and theoretical and can be changed depending on the results obtained but above these values are given in the technical specifications for the implementation of cap issued by the manufacturer.

PRESSURE BLOCK

The pressure block are divided into two categories:

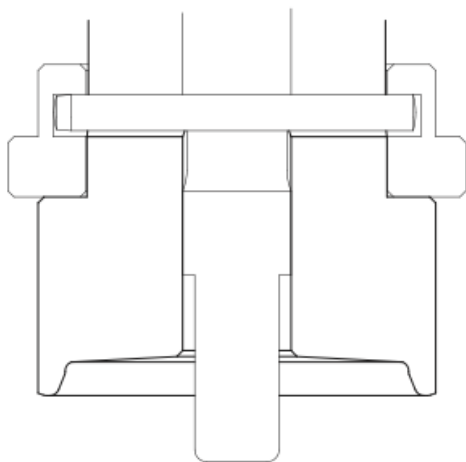
Fixed pressure-block

This is used to apply caps to seal flat liquids -non carbonated, the shape of the inner profile can be flat or concave. Normally a concave profile of 5° is used.

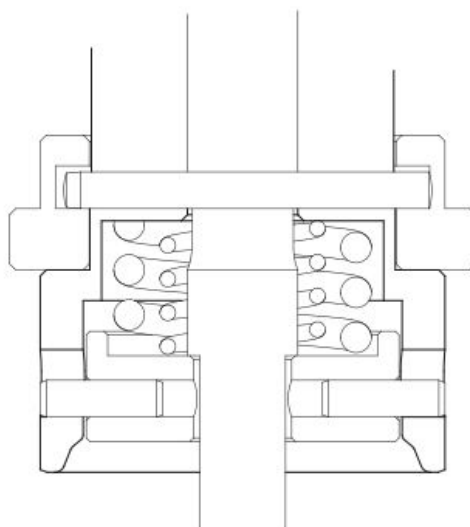
Mobile pressure-block

This is used to apply caps to seal carbonated liquids or with STELVIN caps (wine application) Each individual cap manufacturer tests the cap's inner liner pressure holding characteristics on the bottle with its own pressure-block profile. With equal characteristics of the cap, a change of cap supplier lack of holding pressure can be experienced. To a different type of inner liner corresponds a different profile of application. It is therefore necessary to know the profile details of the pressure block used by the cap supplier when testing the cap to assess its pressure holding characteristics.

FIXED – FLAT PRESSURE BLOCK

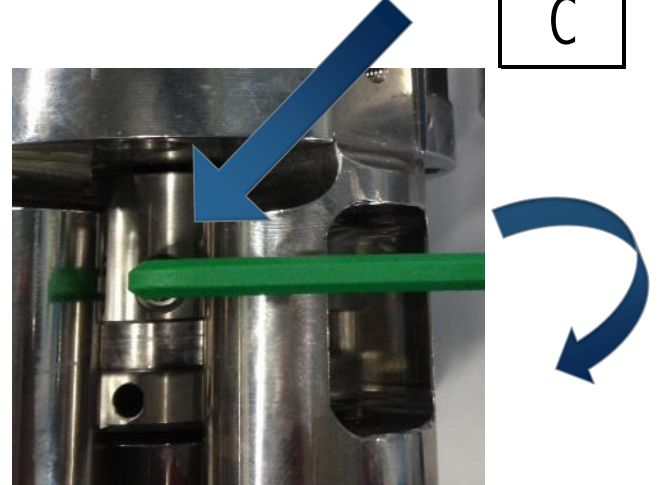
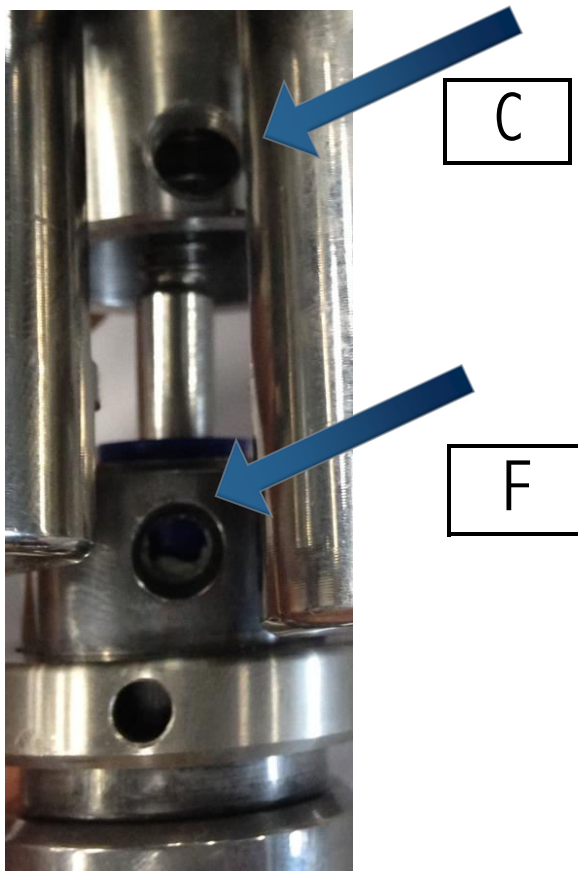
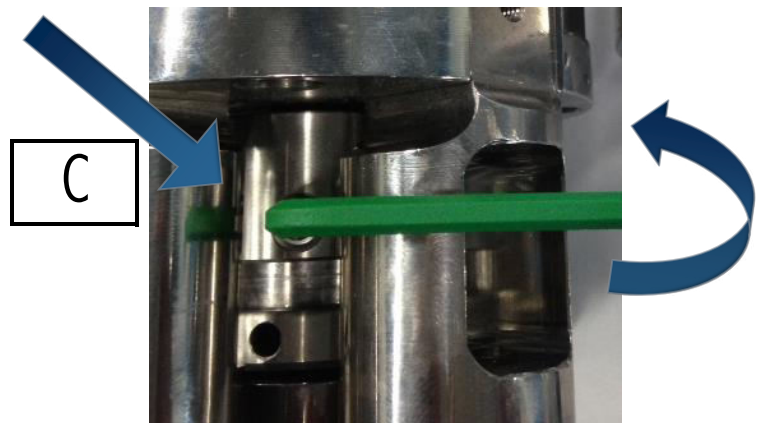


MOBILE PRESSURE BLOCK



Mounting/dismounting pressure-block

- Disengage the head by capping turret.
- Remove the two screws securing the centering device placed on the arm holding lever and remove the disc centering complete of columns pushing down.
- Put the key in the hexagonal seat of the grain security C
- Completely remove the grain security C.
- Remove the pressure-block manually down.
- Enter the new pressure-block manually up being careful to match the F for the premicapsula with the seat of wheat C.
- Screw the grain security C.
- Mount the centering disc, paying attention to the direction of application, pushing it slightly upward, and then tighten the two fixing screws on the arm holding lever.



POSSIBLE TROUBLES – CAUSES AND SOLUTIONS

Insufficient step on top of cap

- Not enough axial load.
- Diameter of the pressure-block not adequate for the type of cap. (too big)

Cut on the upper part of the cap

- Step on top of the cap too deep.
- Diameter of the pressure-block too small, making sure that the axial load is the right one to form the step.

Irregular step on top of cap

- Incorrect adjustment of the pressure-block.
- Inclined bottle or inclined bottle neck.
- Bottle too tight in the center star of the capping machine.
- Center star of the capping machine too low.

Scarce depth of thread

- Verify the radial load of the rollers.
- Roller arms incorrectly adjusted.
- Rollers too wide apart.

The thread rollers make a groove on the cap without entering the start of the thread of the glass finish.

- Grippped rollers.
- Rollers adjusted too high.
- Pressure-block incorrectly adjusted (unscrewed).
- Cap material of poor quality.

The thread rollers cut the cap at the start of thread.

- Rollers set too high.

The thread rollers cut the cap after the start of thread

- Rollers set too low.
- Rollers radial load too high.
- Partially gripped rollers.

The thread rollers start to thread the cap too low thus downward deforming it

- Roller springs worn out or broken.
- Rollers out of phase.
- Tendency of the rollers to grip.
- Bushes locking grub screws loosened.

Thread too weak

- Not enough radial load.

Tuck-under not formed

- Insufficient tuck-under bead on the cap.

Breakage of the cap bridges

- Grippped rollers.
- Rollers set too high.
- Very high radial load.
- Bridges too weak.
- Diameter of the tuck-under bead too small.
- Tuck-under bead too low.
- Bottle finish too high or too low.

Dented or marked cap below the knurl.

- Thread rollers too low.
- Very high radial load.

Cut cap

- Very high radial load
- Thread rollers too high.

SERVICE MAINTENANCE

The capping heads will become more efficient washing line and heads from residues of product and/or powder with subsequent aluminum / glass "blowing" of the moving parts with compressed air (slingbars of bearings, thread rollers and tuck-under rollers) at each end of the bottling cycle.

Ordinary service maintenance

For proper operation of the capping heads is recommended to follow these guidelines:

- Wash with warm water the thread rollers and the tuck-under rollers. The capping head is provided free of lubrication and greasing
- Check tightness of grain: First Half
- Control calibration of the rollers working diameter through gauge/master (Optional): First Half

Extraordinary service maintenance

Obviously wear depends of the actual production of each single head.

Normally the head's efficiency (first to perform overhaul / maintenance) is calculated with the following formula:

Break point (B) = P x H x G

Production per head (P) – 1500 (bottles/hour).

Hours worked (H) – 8 hours (1 work shift).

Working days (G) – 200 days approximately.

Break point (B) = P x H x G = 1500 x 8 x 200 = 2.400.000 locks.

This calculation is considered almost real but it depends on the use and maintenance of the heads.

Tecnomax-Due S.r.l.

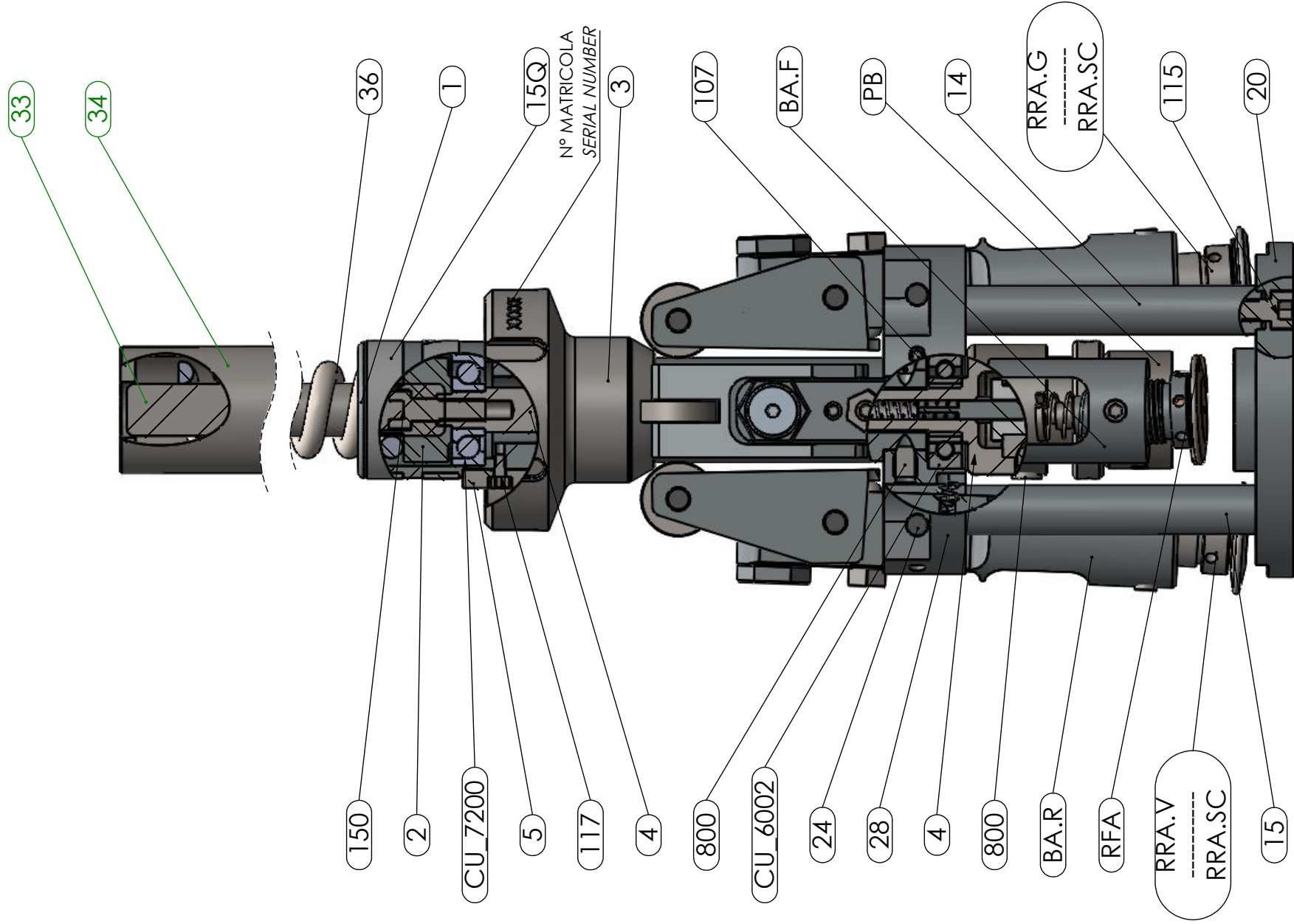
Via Vigentina 138-140 - 27100 Pavia (PV) – Italia

P.IVA/Codice fiscale e Registro imprese 02161350182 - Cap. Soc. Euro 10.000,00 i.v.

phone: (0039) 0382 577378 - fax (0039) 0382 467084

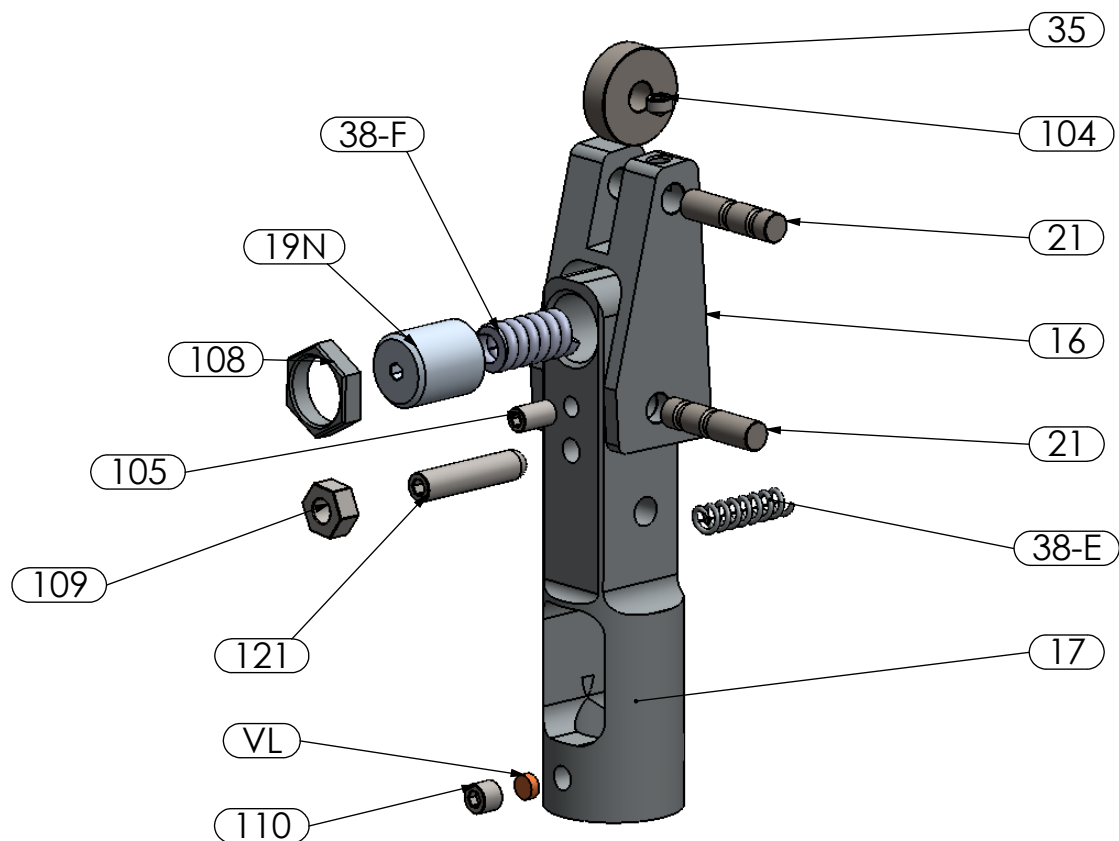
info@tecnomax-due.it www.tecnomax-due.it

PER LA RICHIESTA DI PARTI DI RICAMBIO SI PREGA DI FORNIRE IL
NUMERO DI MATRICOLA DELLA TESTA (XXXXX) ED IL TIPO DI
CAPSULA LAVORATA
FOR SPARE PARTS REQUEST WE WOULD LIKE TO ASK YOU TO GIVE US THE
SERIAL NUMBER (XXXXX) AND THE TYPE OF ALUMINIUM CAP USED



Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
1	M14.10.20.XX	Cannotto	Head Shaft	1
2	M14.10.50.XX	Scontrino	Safety Ring	1
3	TV.10.10.01	Camma	Cam	1
4	M14.10.40.00	Albero Folle M14	Idel Shaft	1
5	TV.10.60.01	Linguetta	Togue	1
14	TV.60.40.XX	Colonnina centratore con Guida	Column With Guide For Cap Guide	2
15	TV.60.30.XX	Colonnina Centratore a Doppio filetto	Column with two thread	2
15M	BO.28.32.20	Boccola Autolubrificante	Auto-Lube Bush	1
15Q	M14.10.ANELLO.PTFE	Anello PTFE	PTFE Ring	2
20	TV.60.10.XX	Centratore	Cap Guide	1
24	M14.20.60.02	Spina Crocera 6x40 M14	Pin 6X40	4
28	M14.10.30.XX	Corpo Porta Bracci	Arm Holding Body	1
36	TV.70.XX.XX	Molla Carico Assiale	Axial Load Spring	1
107	G_5X8	Grano Piatto M5X8	Allen Screw M5X8	4
115	TCCE_M6X10	Brugola Esa Incassato	Screw	4
117	TCCE_M3X6	Brugola Esa Incassato x Linguetta	Screw for Fixing Tounge	1
150	TCCE_M6X20.L	Brugola Esa Incassato	Lock Screw	1
800	M14.50.G.8,2	Grano M8x1 - M14	Allen Screw M8x1 M14	3
BA.F	BA.F	Braccio Filettatore Assemblato	Thread Arm	2
BA.R	BA.R	Braccio Ribattitore Assemblato	Assembled Tuck-Under Roller Arm	2
CU_6002	CU_6002	cuscinetto radiale sfere inox	Stainless Steel Bearing	1
CU_7200	CU_7200	Cuscinetto Contatto Obliquo SS	Stainless Steel Bearing	1
PB	M14.GPA.XX.XX	Gruppo Premicapsula Assemblato	Pressure Block	1
RFA	M14.RFA	Rullo Filettatore Assemblato	Assembled Thread Roller	2
RRA.G	M14.RRA.G	Rullo Ribattitore Gradino Assemblato "Finitore"	Assembled Finishing Tuck-Under Roller	1
RRA.SC	M14.RRA.SC	Rullo Stelcap Assemblato	Assembled Stelcap Tuck-Under Roller	2
RRA.V	M14.RRA.V	Rullo Ribattitore "v" Assemblato "Sgrossatore"	Assembled Roughing	1
		OPTIONAL		
33	TV.70.10.XX	Asta Guida Molla	Guide Shaft Spring	1
34	TV.70.10.00	Bussola Guida Molla Carico Assiale	Busch Axial Load Spring	1

 TECNOMAXQUE ADVANCED CLASSIC TECHNOLOGY	TITOLO:			
	N. DISEGNO	M14_ASSIEME		
		09/11/2016	A3	SCALA:1:5
		Foglio 1 di 1		



Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
16	TV.20.20.03	Bilancino Braccio	<i>Wheel Holding Lever</i>	1
17	TV.20.10.02	Braccio Filettatore	<i>Thread Arm</i>	1
19N	TV.20.40.03	Bussola Regolazione Pressione Laterale	<i>Threaded Side Pressure Bush</i>	1
21	TV.20.60.01	Spina 6X25 (Bilancino-Braccio)	<i>Pin 6X25</i>	2
35	TV.20.30.01	Rotella	<i>Wheel for Holding Lever</i>	1
38-E	TV.70.1,0.36	Molla Ritorno Bracci 38E	<i>Back Lever Spring</i>	1
38-F	TV.70.2.25.27,5	Molla Pressione Laterale 38F	<i>Side Pressure Spring</i>	1
104	GP_5X4	Grano Punta Conica M5X4	<i>Allen Screw M5X4</i>	1
105	GP_5X10	Grano Punta Conica M5X10	<i>Allen Screw M5X10</i>	1
108	TV.20.40.01	Dado Bloccaggio Pressione Laterale	<i>Die for Side Pressure Bush</i>	1
109	DE_6	Dado Medio M6 UNI5588	<i>Die M6</i>	1
110	G_6X5	Grano Punta Piatta M6X5	<i>Allen Screw M6X5</i>	1
121	GTS_6X28	Grano Regolazione Diametro 6X28	<i>Allen Screw M6X28 Adjustable Closure</i>	1
VL	PASTIGLIA VUL	Pastiglia Vulkolan	<i>Vulkolan tablet</i>	1

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TITOLO:

Braccio Filettatore Assemblato

N. DISEGNO

BA.F

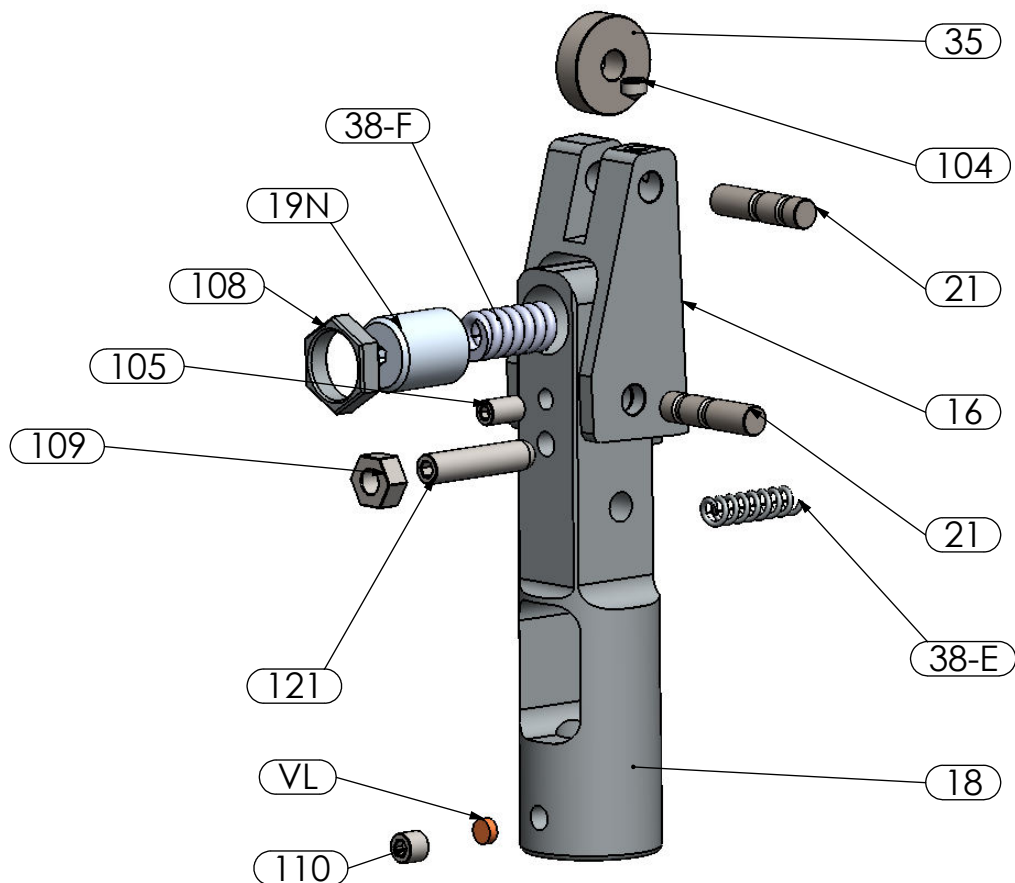
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FOGLIO 1 DI 1

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SCALA:1:2



Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
16	TV.20.20.03	Bilancino Braccio	<i>Wheel Holding Lever</i>	1
18	TV.20.10.01	Braccio Ribattitore	<i>Tuck-Under Roller Arm</i>	1
19N	TV.20.40.03	Bussola Regolazione Pressione Laterale	<i>Threaded Side Pressure Bush</i>	1
21	TV.20.60.01	Spina 6X25 (Bilancino-Braccio)	<i>Pin 6X25</i>	2
35	TV.20.30.01	Rotella	<i>Wheel for Holding Lever</i>	1
38-E	TV.70.1,0.36	Molla Ritorno Bracci 38E	<i>Back Lever Spring</i>	1
38-F	TV.70.2.25.27,5	Molla Pressione Laterale 38F	<i>Side Pressure Spring</i>	1
104	GP_5X4	Grano Punta Conica M5X4	<i>Allen Screw M5X4</i>	1
105	GP_5X10	Grano Punta Conica M5X10	<i>Allen Screw M5X10</i>	1
108	TV.20.40.01	Dado Bloccaggio Pressione Laterale	<i>Die for Side Pressure Bush</i>	1
109	DE_6	Dado Medio M6 UNI5588	<i>Die M6</i>	1
110	G_6X5	Grano Punta Piatte M6X5	<i>Allen Screw M6X5</i>	1
121	GTS_6X28	Grano Regolazione Diametro 6X28	<i>Allen Screw M6X28 Adjustable Closure</i>	1
VL	PASTIGLIA VUL	Pastiglia Vulkolan	<i>Vulkolan tablet</i>	1

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TITOLO:

Braccio Ribattitore Assemblato

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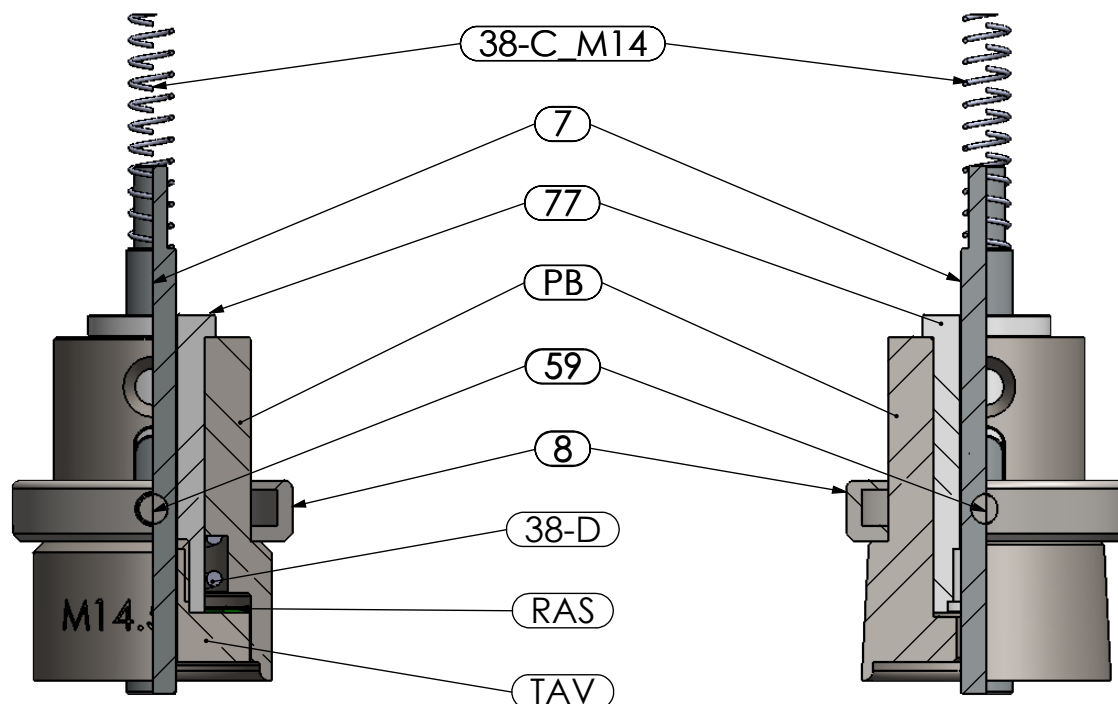
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SCALA:1:2



PREMICALPSULA MOBILE
MOBILE BRESSURE BLOCK

PREMICALPSULA FISSO
FIXED PRESSURE BLOCK

Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
7	M14.50.60.XX	Tastatore NCNR	Cap Presence Shaft	1
8	M14.50.50.XX	Ghiera NCNR	No-cap No-Roll Safety Disk	1
38-C_M14	TVM.70.0,6.35	Molla Tastatore NCNR	Cap Presence Shaft Spring	1
38-D	M14.70.2,0.14,5.16,5	Molla Premicapsula F.2,0 38D	Pressure Block Spring	1
59	TV.50.40.XX	Spina Cilindrica NCNR	Inox Pin NCNR	1
77	M14.55.00.00	Guida Astina NCNR	Cap Presence Shaft Guide	1
PB	M14.50.XX.XX	Premicapsula D28-IMP26	Pressure Block	1
RAS	rasamento26_0,4	Spessore Regolazione Impronta	Adapter Washer	X
TAV	M14.55.XX.XX	Tavolino Premicapsula Impronta	Gauge Block	1

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TITOLO:

PREMICALPSULA ASSEMBLATO

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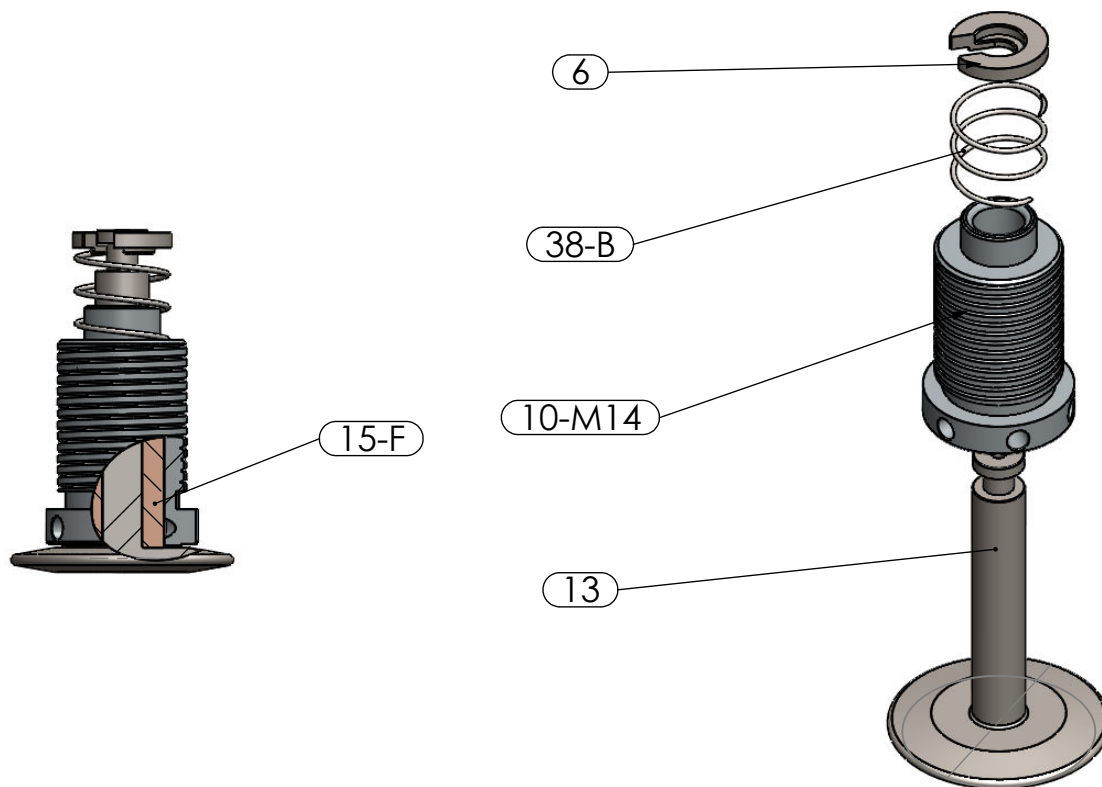
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SCALA:1:1



Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
6	TV.30.20.01	Fermo Molla Filettatore	Thread spring Holder	1
10-M14	M14.30.10.01	Bussola Filettatore M14	Thread Roller Bush M14	1
13	TV.30.XX.XX	Rullo Filettatore	Thread Roller	1
15-F	VSOB7-12-24	Boccola VSOB7-12-24	VSOB7-12-24 Bush	1
38-B	TV.70.0,6.20	Molla Filettatore 38B	Thread Roller Spring	1

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TITOLO:

Rullo Filettatore Assemblato

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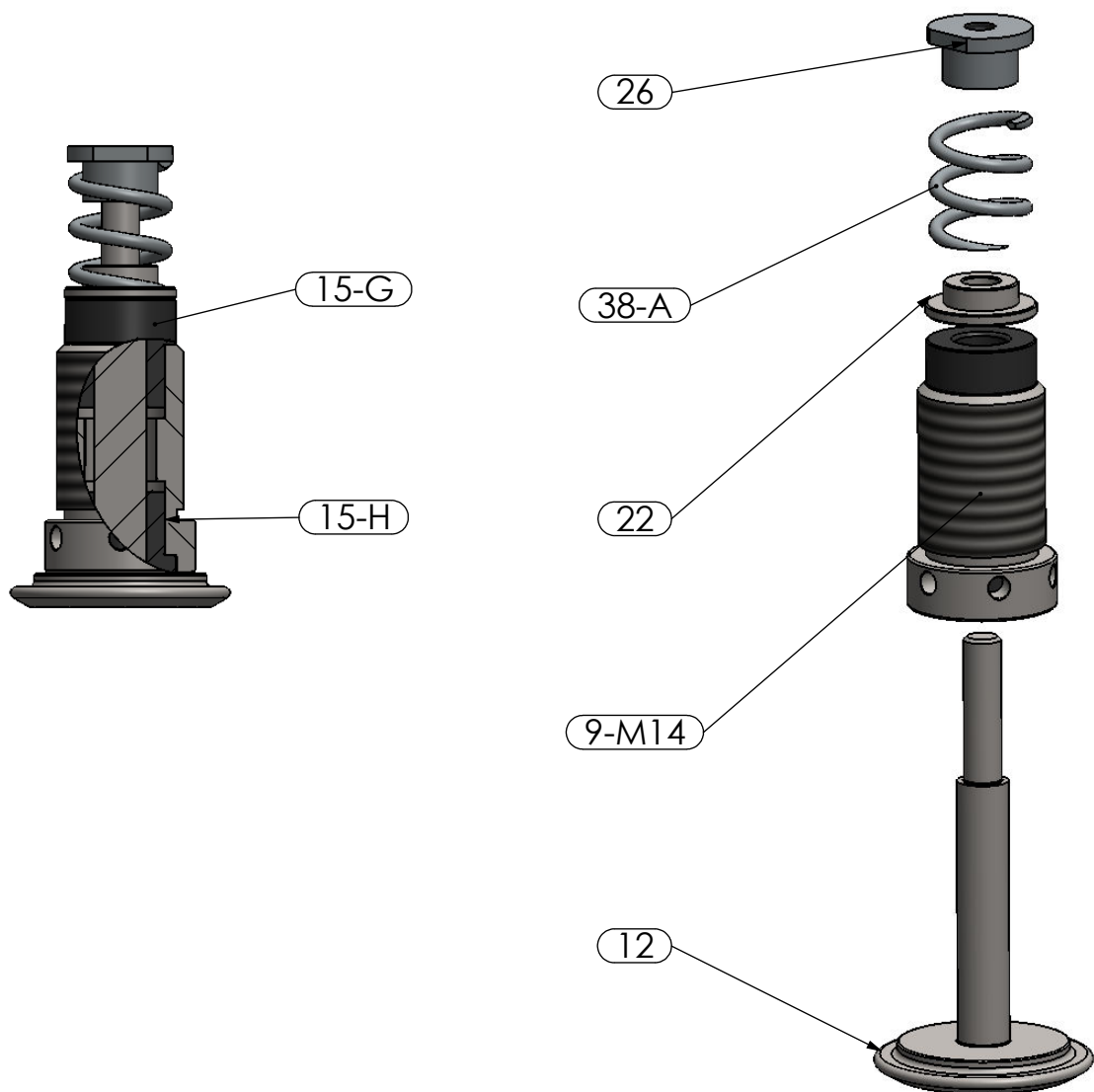
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SCALA:1:1



Articolo N°	Num. parte	Descrizione	EN.Description	Quantità
9-M14	M14.40.10.01	Bussola Ribattitore M14	<i>Tuck-Under Roller Bush</i>	1
15-G	M14.40.BO.VG	Boccola Ribattitore "V-G"	<i>Auto-Lube Bush "V-G"</i>	1
15-H	M14.40.BO.STD	Boccola Ribattitore STD	<i>Auto-Lube Bush STD</i>	1
22	TV.40.20.02	Guida Molla Ribattitore	<i>Upper Pivot</i>	1
26	TV.40.20.01	Fermo Molla Ribattitore	<i>Tuck-Under Roller Holder</i>	1
38-A	TV.70.1,8.21,5.A	Molla Ribattitore 38A	<i>Tuck-Under Roller Spring 38A</i>	1
12	TV.40.30.XXG	Rullo Ribattitore Gradino	<i>Finishing Tuck-Under Roller</i>	1

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TITOLO:

Rullo Ribattitore Gradino Assemblato "Finitore"

N. DISEGNO

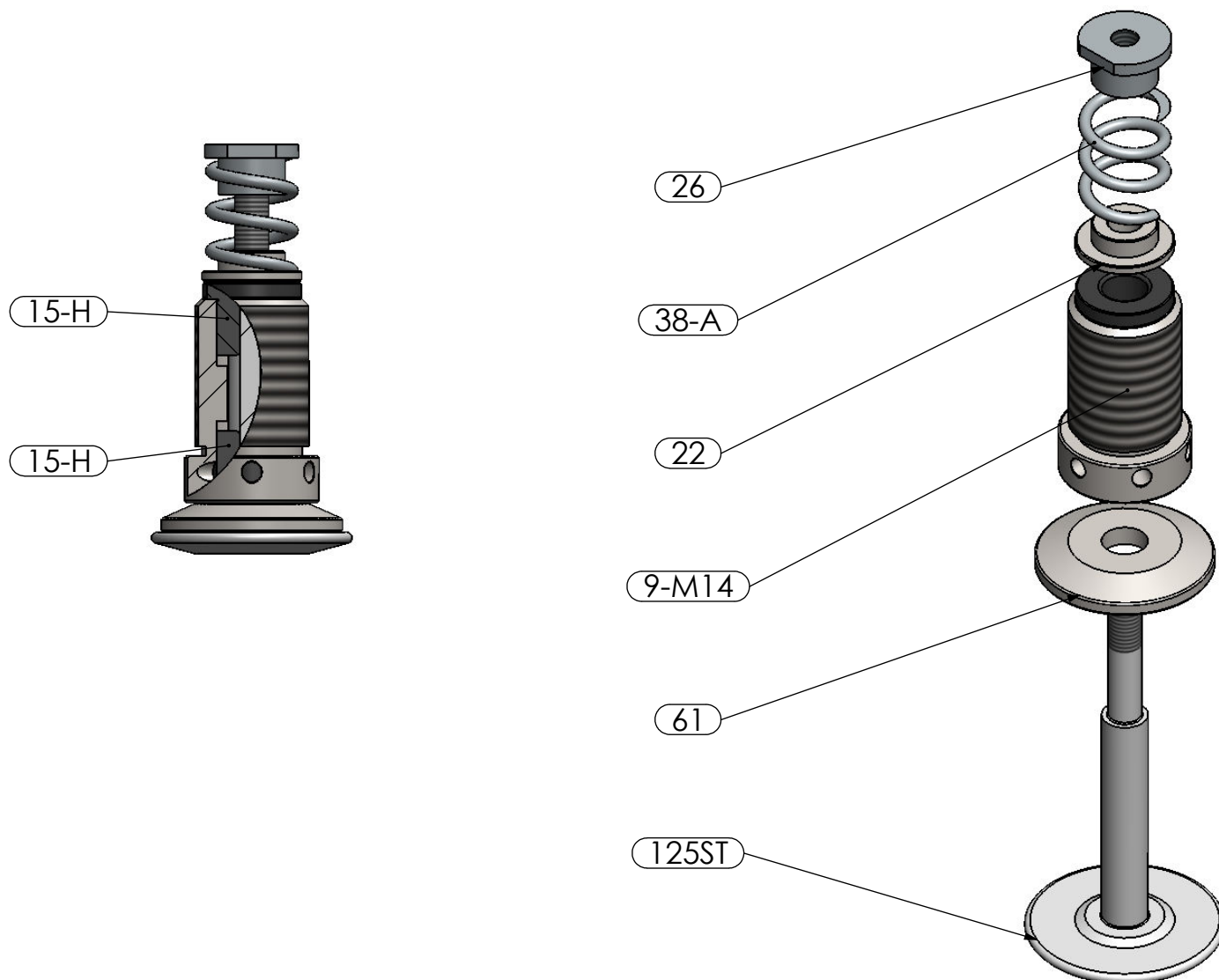
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SCALA:1:1



Articolo N°	Num. parte	Descrizione	Description	Quantità
9-M14	M14.40.10.01	Bussola Ribattitore M14	<i>Tuck-Under Roller Bush</i>	1
125ST	TV.40.XX.XXSC	Rullo Stelcap r XX	<i>Stelcap Tuck-Under Roller</i>	1
15-H	M14.40.BO.STD	Boccola Ribattitore STD	<i>Auto Lube Bush</i>	2
22	TV.40.20.02	Guida Molla Ribattitore	<i>Upper Pivot</i>	1
26	TV.40.20.01	Fermo Molla Ribattitore	<i>Tuck-Under Spring Holder</i>	1
38-A	TV.70.1,8.21,5.A	Molla Ribattitore 38A	<i>Tuck-Under Roller Spring</i>	1
61	TV.40.XX.XX	GHIERA STELCAP	<i>Step Stelcap</i>	1

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TITOLO:

RULLO STELCAP ASSEMBLATO

N. DISEGNO

M14.RRA.SC

27/10/2016

FOGLIO 1 DI 1

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SCALA:1:1

SCHEMA PRODOTTO - PRODUCT'S TECHNICAL DATA

Cliente / Customer 001966 TECNOMAX USA

Ordine di Lavoro 34.875 **Impegno Cliente** 845 **Del** 25/05/2021

MODELLO MODEL	SAM2005+M14_-004267	Matricola/Lotto Serial Number	31933
Quantità Quantity	1,00	Tipo Capsula Closure Type	30X60
Numero D'ordine Order Number	21-041 /	Data Ordine Cli. Order Date by Cli.	10/05/2021
Data di evasione Expiration Date	25/05/2021	Evaso II Delivered	
Riferimento reference		Riferimento Mach. Machine reference	
Campionatura Capsule Ricevute Samples of Caps Received	No	Campionatura Bottiglie Ricevute Samples of Bottle Received	No

Scheda Tecnica Prodotto - Product's technical data

Cannotto / Flangia - Head joining shaft code	M14.10.20.50	CANNOTTO M14 H50 MM
Crocera	M14.10.30.04	CROCERA CORPO PORTABRACCI M14 D89MM 4 SCARICHI
Scontrino - Ring	M14.10.50.13	SCONTRINO M14 H13 PER CANNOTTO CORTO
Premicapsula - Pressure Block	M14.50.30.27,5	PREMICAPSULA M14 30 - 27,5
		Impronta 1,50 (mm)
Camma / Cam	TV.10.10.01	CAMMA STANDARD
Rullo Filettatore - Threading Roller	TV.30.30.08	RULLO FILETTATORE D30 MM - R0,8 MM
RAGGIO PROFILO	0,8 mm	DIAM. 30 mm
		Pres. Laterale. 10,00 (Kg)
Rullo Ribattitore - Tuck-Under Roller	TV.40.30.09SC	RULLO RIBATTITORE "STELCAP" D30 MM - R0,9 MM - CH.28/35
RAGGIO	0,9 mm	DIAM. 30 mm
		Pres. Lat. 8,00 (Kg)
Ghiera Stelcap	TV.40.30.27,3	GHIERA RULLO STELCAP STEP 1,35 MM
Centratore Capsula - Cap Guide	TV.60.10.30	CENTRATORE CAPSULA D30 MM
Colonnina - Columns	TV.60.30.78	COLONNINA CENTRATORE DOPPIO FILETTO H78 MM
Colonnina - Columns	TV.60.30.78	COLONNINA CENTRATORE DOPPIO FILETTO H78 MM
Colonnina - Columns	TV.60.40.78	COLONNINA CENTRATORE CON GUIDA H78
Molla di carico assiale - Axial Load Spring	TV.70.R.89	MOLLA ROSSA D25 H89 COD 1HR25089
PRECARICO INIZIALE	5,00 mm	CARICO ASSIALE
		180,00 Kg

NOTE: