INSTRUCTIONS FOR V2220 UNIT MAINTENANCE OPERATORS





ORIGINAL INSTRUCTIONS

Thank you for choosing a machine manufactured by VI.BE.MAC. S.p.A.

This machine has been designed and built using state-of-the-art technologies and procedures to ensure the best reliability over time and, at the same time, to ensure maximum operator safety.

Carefully read and comply with all information in this manual for proper and safe operation of the machine. All documentation supplied with the machine - and in particular this manual - must be carefully preserved for future reference.



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The original instructions manual was drafted in Italian.





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CE Declaration of Conformity

Translated Version

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In quality of manufacturer, declares under its responsability that the product:

| COMPANY: | VIBEMAC | MODEL: <u>V2220</u> |
|-----------------|--------------------|---|
| SERIAL NUMBER : | XXXXXXXX | MANUFACTURED IN YEAR: 2018 two thousand and eighteen |
| DESCRIPTION: | Pneumatic tape co | atter cylinder which automatically cuts the tape at the beginning and |
| | the end of the fro | nt pocket. |

The present declaration has been issued according to machinery directive 2006/42/CE dated 17 May 2006 and to the following directive:

- Electromagnetic Compatibility 2004/108/CE

As required, the CE mark is applied on the machine

The person authorized to compile the technical file is: VI.BE.MAC. Spa Via Monte Patello 7/i - 37057 San Giovanni Lupatoto (VR) ITALY

> PLACE AND DATE SAN GIOVANNI LUPATOTO, 19/07/2017

CEO Alberto Guerreschi

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SAFETY SIGNALS

| | MECHANISM MOVING: BEFORE DOING THE OPERATION BE SURE THAT THE MACHINE IS STOPPED AND DISCONNECTED FROM MAIN SWITCH. |
|----|---|
| | DANGER: BE SURE TO FOLLOW THE ISTRUCTION. |
| | DANGER: THE TEMPERATURE WILL BE OVER 70C°-160F°. |
| | DON'T REMOVE SAFETY PROTECTIONS. |
| | DON'T LUBRIFICATE OR ADJUST WHILE MOVING. |
| | TURN OFF THE MAIN SWITCH BEFORE WORKING ON THE MACHINE. |
| | THE USE OF EAR PROTECTION IS MANDATORY. |
| 00 | THE USE OF GOGGLES IS MANDATORY. |

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1. INTRODUCTION

Proper and safe operation of the machine is only ensured if used in accordance with the information stated in this manual and, in general, in the documentation accompanying the machine. It is therefore imperative to carefully read and store all relevant documentation.

It is always necessary to ensure that all operators have fully understood the rules of use. The company is not responsible for any damages to persons or property arising from improper use of the machine.

Do not remove or damage labels, writing, and warnings on parts of the machine. Should it be necessary to restore them, contact VI.BE.MAC. S.p.A.

VI.BE.MAC. S.p.A. disclaims any and all liability for a failure to observe the safety and prevention rules outlined in the various sections of this manual and for any damage caused by improper use.

The machine covered by this manual has been designed and manufactured in accordance with applicable laws and the state of the art valid at the time of delivery. It is the responsibility of the customer to make continuous adjustments to enable its constant compliance with the legal requirements and regulations in place at the installation site.

Any modification to the machine must be previously authorised by VI.BE.MAC. S.p.A.

All work on the machine (maintenance, adjustments, repairs, cleaning) must be carried out by appropriately trained personnel and as indicated in this manual.

1.1- Storing the manual

This instructions manual is an integral part of the machine and must be stored for any future reference. It is advisable to:

- Store the manual in an accessible place known to all operators which is protected from moisture and heat and protected from direct sunlight.
- Utilize the manual so as to avoid damaging all or part of its contents: do not remove, tear or modify parts of the manual for any reason.

In the event of sale or transfer of the machine to another person, this manual and its attachments must be delivered to the new user



Please read this instruction manual carefully before using the machine. Anyone using the machine must be adequately informed about the parts of this instruction manual For the operations to be carried out.



2. CONDITIONS FOR USE

All operations that comply with the following conditions are considered "normal":

- the user applies all instructions in this manual and CE directives
- all safety standards are respected, not removing the casing or safety catches installed by the manufacturer
- the power supply is constant and does not fluctuate by more than 10%
- the unit has to be connected under an automatic cut-out switch of 30mA
- the machine is connected to an earthing system in order to prevent disturbances or electric shocks
- the machine is connected to an electric circuit with separate NEUTRAL and EARTH wires
- the machine is not used at high temperatures (over 40°C) or low temperatures (below 10°C)
- water or other fluids are not permitted to enter the motor
- water or other fluids are not permitted to come into contact with the control card, the solenoid valves and the cylinders
- the machine is not used in the presence of explosive gases, dust or oil fumes
- the machine is not connected to a compressed air system containing water or other fluids in the pressurized circuit
- the machine is connected to a compressed air system with minimum constant internal pressure of 5.5 bar
- the machine is installed in a factory not over 1000 mt from sea level
- the machine is installed on a flat service with no inclination
- only qualified personnel are permitted to commission the machine and carry out extraordinary maintenance work

The manufacturer declines all responsibility for damage caused to people or things by the machine if:

- the machine was not commissioned by qualified personnel
- any repairs to the machine were not made by qualified personnel
- the power supply is not constant or does not correspond to requirements
- the machine is not earthed, or there are electronic problems in the electrical system
- the motor has not been subjected to the scheduled maintenance operations
- original or model-specific spare parts have not been used
- the user demonstrates total or partial failure to observe the instructions
- rain or snow get in contact with the unit

It is absolutely prohibited to:

- remove the casing and safety devices from their positions, thereby posing a risk to the user
- remove the eye protection mirror without equipping the user with special eye protection glasses in compliance with the law
- deactivate the safety catches installed by the manufacturer, thereby posing a risk to the user
- make changes to the machine without authorization from the manufacturer, thereby posing a risk to the user
- exceptional circumstances

2.1- Guarante conditions

All unit components have a 1 (ONE) year guarantee and should be send to the manufacturer for inspection if found to be defective.

All pieces damaged due to negligence of the end user and/or incorrect adjustments to the unit, carried out by unqualified personnel, will NOT be recognized as defective and will not be covered by the guarantee. These will be charged at the normal price, including consequent delivery and/or installation costs.

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3. LIFTING AND TRANSPORT





Make sure that during lifting the whole machine rests on the forklift forks.

Position the machine on the truck surly fixed with straps or balts that will insure the stability during the transport.



Make sure that during unloading the whole machine rests on the forklift forks. Place it on a hard flat surface repaired from weather. Remove straps, and loosen the fixing screws, remove the top part of the packing box by pulling it upwards.



!CAUTION!

The unit must be unpacked on a flat surface and free from roughness.

4. GENERAL DESCRIPTION

4.1- General features

The V2220 is a double needle lock stitch unit with Mitsubishi or Vi.Be.Mac. sewing head. This machine considerably simplifies the hemming and sewing of front pockets, at the same time facilitating the insertion of a reinforcing/branded tape. Above all, this unit guarantees a high sewing quality and does not require manual cutting of the excessive tape which is normally done by an assistant. Once you set the required stitching length on the control panel, the knife controlled by a pneumatic cylinder will automatically cut the tape and the thread at the beginning and at the end of the front pocket. The latest innovations that characterise the unit are its stand design and a special cylinder inside the support column that allows effortless height adjustment of the worktop.

4.2- Dimensions and weight

| With packaging | | | | |
|----------------|--------|--|--|--|
| Width | 75 cm | | | |
| Length | 99 cm | | | |
| Height | 110 cm | | | |
| Weight | 128 Kg | | | |

| Without packaging | | | |
|-------------------|--------|--|--|
| Width | 55 cm | | |
| Length | 75 cm | | |
| Height | 145 cm | | |
| Weight | 94 Kg | | |

4.3- Electrical power

Power voltage is 220Volt single-phase 50/60 Hz. (maximum oscillations of \pm 10% are permitted) Maximum consumption is equal to approximately 600 Watt.

| ELECTRICAL POWER | | | |
|-----------------------|-----------------|--|--|
| Voltage | $220V \pm 10\%$ | | |
| Frequency | 50/60 Hz ±2% | | |
| Total installed power | 600 W | | |

4.4- Pneumatic power

Consumption is approximately 2 litres per minute at maximum productivity. The unit must be powered pneumatically with a pressure of at least 5.5 bar. The internal pressure, adjustable via the corresponding regulator (1), must be 4.5 bar. Simply slide the slide valve (2) forward to pneumatically supply/discharge the unit.





4.5- Working position

The user works seated in front of the unit with:

- The speed control foot pedal (1) set at the user's feet, fixed to the table
- The main power supply switch (2) to the right below the worktop





5. Installation



The user must prepare the location where installation is to be carried out in accordance with machine requirements as illustrated in this manual, in accordance with the technical specifications of the unit and the need for suitable space for maintenance/adjustment.

Machine installation must be carried out by personnel from VI.BE.MAC. S.p.A. or authorised by them.

5.1- Flooring

The user must provide compact, smooth and horizontal concrete floor for unit housing, suitable to support the weight of the machine and to ensure its stability.

5.2- Unit placement

The area available for installation must be chosen taking into account the overall size (width 55 cm, length 75 cm, height 145 cm) and space required for use and maintenance of the unit. Its position with respect to fixed obstacles must be such as to permit easy passage for use and maintenance. In particular, the minimum clearance for the passage of persons must be 650 mm. The minimum distance between moving parts and fixed obstacles must be minimum 500 mm to avoid crushing of the entire body.

!CAUTION!

When preparing where the unit will be housed, the user must also take into consideration the overall dimensions of the machine, in all the positions it assumes when its parts are moving.

5.3- Unit assembly

The unit is delivered to the customer pre-assembled in its core parts. During transport and handling, it is disconnected from electrical and pneumatic power supplies. These are connected during installation by VI.BE.MAC. S.p.A. personnel or persons authorised by them.

The securing and levelling of components making up the unit are carried out by persons authorised by VI.BE. MAC. S.p.A.. In particular:

• The unit is equipped with support points for positioning and levelling it on the floor, as shown in figure (A).





5.4- Height



The height of the unit worktop can be changed and depends on the height of the operator (the taller the operator, the higher the worktop will need to be raised). Loosen the wing screw (1) and push the worktop downward or pull it upward to adjust the desired height. Remember to then re-tighten the previously loosened wing screw (1).



5.5- Lighting

The user must ensure that lighting in the work areas is sufficient to allow a good view of operations and all machine components. In particular shadowed areas, annoying glares and stroboscopic effects must be avoided. The unit is also equipped with an extra spotlight that can be turned on via the corresponding switch when the operator is working.



!CAUTION!

IN THE EVENT OF REPLACEMENT, THE SPOTLIGHT IS NOT POWERED BY THE UNIT'S MAIN SWITCH, SO IT WILL NOT BE ENOUGH TO SIMPLY TURN THE SWITCH OFF TO CUT OFF POWER FROM THE SPOTLIGHT, BUT YOU ABSOLUTELY MUST UNPLUG THE GENERAL SUPPLY CABLE.



6. DESCRIPTION OF CONTROLS



The following controls are present on the V2220:

6.1- Pedal controls

The pedal is positioned at the base of the unit and has three positions:

- 1. Press forward to increase sewing speed
- 2. Neutral
- 3. Press backward to:
 - Raise the foot



6.2- Main switch

This switch is positioned under the worktop and has two buttons:

- 1. The RED button on the left is used to cut off electrical power from the unit.
- 2. The BLACK button on the right is used to electrically power the unit.





7. SETTINGS

Before proceeding, some settings must be made following the procedures described below.



7.1- Setting sewing speed

The following will be shown on the control panel display:



Press the up arrow **A** and down arrow **Y** simultaneously. The following message will appear on the display:



Press the two buttons at the same time until the following message appears on the display:



Use button "D" to change the units, button "C" to change the tenths, button "B" to change the hundredths, and button "A" to change the thousandths.

Press the down arrow **•**. The following message will appear on the display:



Use button "D" to change the units, button "C" to change the tenths, button "B" to change the hundredths, and button "A" to change the thousandths.

Adjust to value 220.

Press the up arrow \blacktriangle and down arrow \heartsuit simultaneously to exit.



7.2- Setting slow initial start



The following will be shown on the control panel display:



If slow start is ON, the following symbol will appear:

If slow start is OFF, the following symbol will appear:

Press button "B" to change the value from "ON" and "OFF".

7.3- Setting cutting parameters

The following will be shown on the control panel display:

|--|

Press and hold the up arrow \blacktriangle , the down arrow \heartsuit and button "B" simultaneously.

The following message will appear on the display:



(F MODE)

Press and hold until the message changes and becomes:

| C O A. X X |
|------------|
|------------|

Setting the number of stitches TAPE CUTTING START

Use buttons C and D to enter the desired number of stitches, from when the material start is detected by the photocell. Press the down arrow \checkmark and the following will appear on the display:

| С | 0 | C. | X | x |
|---|---|----------|---|---|
| Ũ | Ű | <u> </u> | | |

Setting number of stitches in the TAPE CUTTING END

Use buttons C and D to enter the desired number of stitches, from when the material end is detected by the photocell. Press the up arrow \blacktriangle and down arrow \checkmark at the same time to exit.











foot is lowered. The counting time is changed by means of the FCT value. Press the down arrow and set the desired time.





After the end of the machine cycle is stopped with the pedal, the foot is lifted and is kept up until a new signal is given with the pedal to lower it.

Press the up arrow \blacktriangle and down arrow \checkmark simultaneously to exit.

10. TESTS

The following will be shown on the control panel display:



Press the three following buttons: the up arrow \blacktriangle and the down arrow \heartsuit and button A simultaneously. The following message will appear on the display:

| P - E | (E MODE) |
|-------|----------|
|-------|----------|

Press and hold the two buttons until the message changes to:

| Γ | | | | |
|---|---|---|---|---|
| | 1 | Е | - | - |
| | | | | |



10.1- Input Tests



There are two inputs used:

| FUNCTION | PARAMETER |
|-----------|-----------|
| Photocell | I1 |
| Photocell | I2 |

To test these inputs, press the down arrow repeatedly until the message that identified the desired input is reached (i1 or i2). When the photocell detects any type of material, the value changes from "ON" to "OFF".



Press the down arrow **Y**. The following will appear on the display:

E Х

Phase A Motor Encoder input parameter

The INPUT (ON/OFF) value of the parameter E C A is displayed. To change its status (from ON to OFF and vice-versa), turn the hand wheel manually (just a few mm) to simulate a short seam.

Press the down arrow $[\bullet]$. The following will appear on the display:



Phase B Motor Encoder input parameter

The INPUT (ON/OFF) value of the parameter E C B is displayed. To change its status (from ON to OFF and vice-versa), turn the hand wheel manually (just a few mm) to simulate a short seam. Press the down arrow **Y**. The following will appear on the display:

| UP | 0 | n |
|----|---|---|
|----|---|---|

Thread trimmer UP position sensor reading input parameter

The INPUT (ON/OFF) value of the parameter U P is displayed.

Manually turn the machine hand wheel to change from "on" to "off" or vice-versa.

Press the down arrow $[\bullet]$. The following will appear on the display:

| | | d | n | | | | 0 | | f | |
|--|--|---|---|--|--|--|---|--|---|--|
|--|--|---|---|--|--|--|---|--|---|--|

Needle DOWN position sensor reading input parameter

The INPUT (ON/OFF) value of the parameter "dn" is displayed.

Manually turn the machine synchroniser to change from "on" to "off" or vice-versa.



10.2- Output tests



Only one output (o2) is used on this model. Press the down arrow to select the desired output.

| FUNCTION | OUTPUT |
|---------------------|--------|
| Tape Cutting Signal | o 2 |

This output can be tried in two ways:

1. TO MANUALLY TEST THE OUTPUT.

Repeatedly press the down arrow until the following appears on the display:

| 0 | 2 | 0. | $\left(\right)$ | 0 | f |) |
|---|---|----|------------------|---|---|---|
| | | | | | | ſ |

of= segnale assente - on=segnale presente

(the letters to the right of the period identify the output status; to test the output and change it from "of" to "on" press button D)

2. TO VIEW THE OUTPUT STATUS DURING THE OPERATING CYCLE.

Press the down arrow until the following appears on the display:



of=pistone a riposo.....on=pistone attivo

(the letters to the right of the period identify how is the piston is set at that moment)



CAUTION! STATUS CHANGES DURING THE OPERATING CYCLE

Press the up arrow \blacktriangle and down arrow \checkmark simultaneously to exit.

RESTORING FACTORY PARAMETERS (RESET) 11.

The following will be shown on the control panel display:



Simultaneously press and hold the down arrow **Y** and buttons B and C.

The following message will appear on the display:

R

(R MODE)

Press and hold the two buttons until the message changes to:

| R E S E T | |
|-----------|--|
|-----------|--|

Press and hold button D to start the reset cycle and keep it pressed until the message flashes three times.

As confirmation that the procedure has been performed successfully, the following will be shown on the control panel display:





| 12. ER | ROR LIST |
|--------|---|
| E-1 | Control that the motor power supply connector is correctly inserted. |
| E-2 | Control the line tension (OVERVOLTAGE). |
| E-3 | Control if the connector ENCODER on the control box connected. Control if the ENCODER is working correctly using the control box test parameters. |
| E-4 | Control if there are any burned pins between the control box and the motor connector. |
| E-6 | This problem is caused by a disturb on the INPUTS. Control if there are any disturbs on the inputs. |
| E-8 | Control that the machine is not locked by turning the hand well. Control the connection of the synchronizer. Control that the belt is correctly tensioned and that it doesn't slid. |

13. PARAMETER LIST

| Function Number | Mode | <u>Digital</u> | Function Name | <u>Unit</u> | Value |
|--------------------|------|----------------|--|-------------|-------|
| 0000 | Р | H. | Maximum Speed | rpm | 2999 |
| 0047 | Р | K8. | Reverse Run Angle From Down Position To Up W Position | Degree | 0 |
| 0050 | Р | SNM. | Setting Sensor "Sen" Input Function | - | OF |
| 0051 | Р | KD. | Virtual Down Setting | - | ON |
| 0055 | Р | U8. | Needle Up Position Stop Angle | Degree | 90 |
| 0101 | Α | PDC. | Pedal Curve | - | 90 |
| 0102 | Α | AC. | Acceleration Time Simple Setting | - | Η |
| 0104 | А | DC. | Deceleration Time Simple Setting | - | Н |
| 0324 | С | IH. | Function Selection of Input Signal Ih | - | NO |
| 0357 | С | I1. | Function Selection of Input Signal I1 | - | IR2 |
| 0370 | C | I2. | Function Selection of Input Signal I2 | - | IO4 |
| 0421 | С | O2. | Function Selection of Output Signal O2 | - | OT3 |
| 0477 | С | A1. | Logic [And] Module A1 Input Function Selection | - | PSU |
| 0480 | С | N1. | Logic [And] Module N1 Output Function Selection | - | OTA |
| 0482 | С | N2. | Logic [And] Module N1 Output Function Selection | - | OP |
| 0484 | С | A2. | Logic [And] Module A2 Input Function Selection | - | IOA |
| 0487 | С | N3. | Logic [And] Module N3 Output Function Selection | - | OT4 |

| 0488 | С | N3L. | logic [And] Module N3 Setting of Hi/Low Logic | - | ON |
|------|---|------|--|----------|-----|
| 0489 | С | N4. | Logic [And] Module N4 Output Function Selection | - | OT3 |
| 0498 | С | OR. | Logic [Or] Module Input Function Selection | - | IO5 |
| 0501 | С | R1. | Logic [Or] Module R1 Output Function Selection | - | OT4 |
| 0503 | С | R2. | Logic [Or] Module R2 Output Function Selection | - | OP |
| 0529 | С | CNF. | F Key Function On Control Panel | - | DN |
| 0800 | F | COA. | Set N° Of Stitches A For Cutter Output (Setting the Delay Time During Chain-Off Output On) | Stitches | 2 |
| 0802 | F | COC. | Set No. Of Stitches C For Cutter Output | Stitches | 10 |
| 0806 | F | SD. | Delay Time To When Sl Output Turns From Off to On | msec | 30 |
| 0807 | F | ED. | Delay Time To When Sl Output Turns From On to Off | msec | 10 |
| 0814 | F | O2M. | Ot2 Output Chain-Off Output Setting | - | ON |
| 0815 | F | O3M. | Ot3 Output Cutter Output Setting | - | ON |
| 0816 | F | I2M. | Mesh Judgment Control With I*2 Input | - | ON |
| 0818 | F | СТМ. | Status Of Cutter Output Photo Switch (I*2) Signal According to Ot3 Output | - | ON |
| 0822 | F | CTS. | Cutter Output Prohibit When Sensor is ON While Stopped | _ | ON |
| 1000 | Н | LHH. | Upper Limit Of Maximum Speed [H] | x100rpm | 30 |
| 1102 | J | CWC. | Rotation Direction Changeover Prohibit | - | ON |



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15. PNEUMATIC DIAGRAM15.1- Topographic pneumatic diagram



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15.2- Technical Pneumatic Diagram







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