

# *Mitre-Mite<sup>®</sup>*

## *MP Multichannel*

Instruction Manual  
Version B



**TW AMP**

***Technology for Frame Assembly***

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## 1. General Information

### 1.1 Manufacturer

The firm Alfamacchine can boast more than 20 years of experience in the construction of Woodworking Machines. It has acquired technological know-how, developed during years of research in strict touch with manufacturing departments and the international community. We offer the best warranty that anyone can grant its customers.

### 1.2 Service Centers

[ITW/AMP](#) is the authorized Alfamacchine service center for North, Central, & South America. Contact us directly to find your nearest distributor. For every need regarding Use, Maintenance or Request of Spare Parts, the Customer is requested to call [ITW/AMP](#)'s distributors or directly to [ITW/AMP](#), specifying the machine's identification data impressed on the plate.



### 1.3 Certification

The machine is produced in conformity to the pertinent European Community Norms in force at the moment of its introduction on the market. Please note: CE certification is only for machine's shipped into European countries. For all other countries, CE certification is an option at the time of the initial order.

### 1.4 Warranty

Alfamacchine's products are built to have a long life and are tested one by one prior to shipping.

If in spite of this, any damages would occur or malfunctioning, the replacement of defective parts is warranted (counting from the date written on the delivery bill) for a period of:

- \* 24 months for mechanical components
- \* 12 months for pneumatic parts

The driver blade is tested for about 1.000.000 working cycles. The Warranty does not include the sending of technical staff. The repair will be performed at [ITW/AMP](#) and the freight of shipment will be entirely charged to the Customer.

The warranty does not cover the damages caused by an inappropriate use of the machine or not corresponding to the instructions described in this handbook

The warranty is voided in case of unauthorized modifications, accidental damages, or tampering performed by unqualified personnel. The warranty is also voided if you use V-Nails<sup>®</sup> that are not manufactured by [ITW/AMP](#). To take advantage of warranty services it is necessary, at the moment you receive your machine to fill out the warranty card and send back as soon as possible to [ITW/AMP](#). The warranty will be valid after it is received & recorded at [ITW/AMP](#).

### 1.5 Pre-Installation Requirements

It is the customer's responsibility to execute what is described in the following documentation.

- Premises predisposition, included building works
- Pneumatic supply of compressed air (see paragraph 4.6.1)
- Machine power supply (see paragraph 4.6.2)

### 1.6 Structure Of The Manual

The customer must pay extreme attention to the instructions written in this handbook, because the proper Installation and Use of the Machine constitute the basis of a correct customer-distributor relationship.

#### 1.6.1 Objects and Contents

The purpose of this manual is to provide the customer all of the necessary information to use the machine as safe as possible. This manual contains information regarding the technical aspects of the machine, machine operation & idle time, maintenance, spare parts, and safety. Before performing any operation on the machine, the operators & qualified technicians must carefully read this manual. In case there is a doubt about any interpretation, please contact your local distributor or [ITW AMP](#).







#### 1.6.2 Users

This manual is made for both the operators of the machine as well as the technicians authorized to perform maintenance on the machine. The operators cannot perform any maintenance, which is reserved only to qualified technicians. The manufacturer does not answer to damages caused by not observing the prohibitions listed above.

#### 1.6.3 Preservation

The Instruction Manual must be kept close to the machine, in a special container that will protect it from liquids or whatever could compromise its legibility.

#### 1.6.4 Symbols Used

SYMBOL	SIGNIFICANTS	
 P...	DANGER	This symbol indicates a danger with a mortal risk for the operator.
 A...	WARNING	This symbol indicates a warning or note about key functions or useful information.
 O...	OBSERVATION	This symbol indicates that you may need to take a measurement or to check a signal...
 I...	INQUIRY	This symbol requires that the user check the proper positioning of any part of the machine, before performing a certain command.
 C...	EXAMINATION	This symbol requires the user to consult the manual before performing a certain command.
 R...	ADJUSTMENT	This symbol requires the user to make a specific mechanical adjustment or electrical setting.

## 2. Description Of The Machine

### 2.1 Working Principal

The frame assembly machine **Mitre-Mite**® MP Multichannel has been realized for the mass production of medium and large size frames. The machine is electronically controlled and is able to execute its cycle very quickly. The machine is able to store 1400 custom programs based upon operator input. The machine works semi-automatically based upon a program the operator inputs. The **Mitre-Mite**® MP Multichannel uses special V-Nails® with Pulling Power called Power Twist™. The Power Twist™ V-Nails® pull the mitres together for an extremely tight mechanical bond.

### 2.2 Main Components

The main components of the machine are:

- Frontal clamping device to promote perfect corners
- Fences capable of adjusting for 4, 6, & 8 sided frames
- Floorstand with filter/regulator/lubricator
- Electric foot pedal for machine activation
- Pneumatic loading of V-Nails®
- Nail magazines for V-Nail® sizes 5, 7, 10, 12, & 15 mm.

### 2.3 Machine's Structure

The following diagram shows the direction of movement on the vertical & horizontal clamps:

- X - AXIS -

Movement of the horizontal clamp.

- Y - AXIS -

Movement of the vertical clamp.



### 2.4 Dimensions

The overall dimensions of the machine are listed in section 2.9.

### 2.5 Surrounding Conditions

The machine has to be installed inside an industrial building, with proper lighting so the operator can see what they are doing. The floor needs to be solid & level. The permitted temperatures range from 40°F to 104°F, with a humidity level not greater than 50% @ 104°F or 90% @ 68°F.

### 2.6 Lighting

Premises lighting must conform to the norms in the country in which the machine is installed. It has to guarantee a clear view to the items being assembled & to the complete machine. The lighting can not create dangerous reflections.

### 2.7 Vibrations

The standard conditions conforming with the proper use of the machine does not create dangerous vibrations. The average quadratic weighed level, according to the acceleration frequency to which the arms are exposed does not exceed 2.5 m/s<sup>2</sup>.

### 2.8 Noise Emissions

The machine is designed for reducing the noise emission level from its source. In standard working conditions the Machine's noise level is:

- Acoustic Continuous Equivalent weighed pressure A < 70 dB
- Acoustic Instantaneous weighed pressure level < 130 dB

The noise levels indicated above are emission levels and are not representative of operating levels. In spite of an existing relationship between emission levels and exposure levels, this can not be used in a reliable way to determine if further precautions are necessary. The factors determining the exposure level to which the work force is subjected include exposure length, work area characteristics, and other noise sources (number of machines in a given area, enclosed work area, etc...). Furthermore the allowed exposure levels could change according to the specific country that the machine is installed in. At any rate the information provided will allow the machine operator to achieve a better evaluation of the dangers & risks he is submitted to.



The above indicated noise levels are emission levels measured in standard conditions of use. In case of any machine modification, the above mentioned levels could be changed and should be re-tested.



## 2.9 Technical Data

The technical data of the machine is listed below. You can use this for reference for any future need of technical assistance.

Frame Thickness	min.-max.	1.97" - 3.15"
Frame Width	min.-max.	0.39" - 3.94"
Max distance between V-Nails <sup>®</sup>		5.5"
V-Nail <sup>®</sup> magazine capacity per size		n. 220
V-Nail <sup>®</sup> sizes		5-7-10-12-15mm
Pneumatic Supply		80 - 110 PSI
Power Supply		120 Volt
Weight		approx 309 lb
Work Bench Height		37.8"
Overall Dimensions		30.3" x 30.3" x 59"
Air consumption per cycle		4 NI/5 Bar
Maximum number of frame programs		1400
Maximum number of V-Nails <sup>®</sup> per position		n. 9
Maximum number of V-Nail <sup>®</sup> positions		n.10
Serial Port Type		RS 232

## 2.10 Standard Equipment

The parts listed below are standard and come with your machine.

### 2.10.1 Included Accessories

Once you have removed the packaging, please check the presence of the following standard parts:

- N° 1 Double Hydraulic Hold Down
- N° 1 Allen Wrench - 5mm
- N° 1 Small Magnet to remove V-Nails<sup>®</sup>
- N° 4 Levelers
- N° 1 Pressure gauge
- N° 1 Quick Disconnect Plug-Installed in machine

### 2.10.2 Upgrading Mechanical Parts

The machine has been designed and developed based upon modular standards, therefore the existing equipment can be upgraded with additional accessories that will not alter the basic structure. Technical upgrades on the machine, if any, will be such that they can be installed at any time without requiring any substantial modifications to the machines structure.

### 2.10.3 Customized Optional Accessories

Thanks to it's versatility this machine can be "custom made" to meet our users requirements by using additional accessories that can make the frame assembly easier. EX: special fences for peculiar shaped mouldings, special clamps to insure that the moulding is clamped properly during assembly process, etc...

## 2.11 Electromagnetic Ambient

The machine is designed to operate properly in an industrial electromagnetic environment, which is included in the following Norms:

EN 50081-2 Electromagnetic compatibility - Generic Norm on Emissions - Part 2 - Industrial Ambient - (1993)

EN 50082-2 Electromagnetic compatibility - Generic Norm on Immunity - Part 2 - Industrial environment - (1995)

### 3. Safety

#### 3.1 General Warnings

The operator must read & pay the maximum attention to the information written in this manual, especially about the proper precautions for safety included in this chapter.

It is imperative that the operator follows the warnings listed below :

- Keep the machine & the work area clean & ordered
- Provide appropriate containers to store the moulding to be used for the frame assembly
- Use the machine only when in a perfect psychological & physical condition
- Wear adequate clothing to avoid obstacles and/or dangerous entanglements to/from the machine
- Wear the individual protection gear listed in this manual.
- Do not remove or alter the warning signs or labels
- Do not remove or bypass the machine's safety systems
- Keep your fingers away from the machine's working areas/danger zones
- Disconnect the air & electrical supply lines prior to performing any maintenance on the machine
- Keep your foot off of the foot-pedal while performing any maintenance on the machine.

#### 3.2 Scheduled Use

The machine is designed & built to assemble mitred frames. The machine is designed for semi-automatic operation, (under operator control).

#### 3.3 Inadvisable Use

The machine cannot be used for/in :

- Uses different from those listed in chapter 3.2
- In an explosive atmosphere or where there is a high concentration of dust or oily substances suspended in the air.
- In a flammable atmosphere
- Outdoors
- An area without the proper fuse/circuit breaker protection in the main power supply lines
- For working with materials not compatible with the machines characteristics
- With electric bridges and/or mechanical instruments leaving out machine parts or functions

#### 3.4 Danger Zones

The frame assembly area is defined as the "Working Area". The dangerous areas of the machine include the movable parts & surrounding areas.

Figure 3.4.A - Danger Zone



#### 3.5 Protection Devices

The machine is equipped with adequate protection devices for people exposed to the risks of the moveable parts, while using the machine (Driver blade, horizontal clamp, & vertical clamp). Please note: The safety guard shown in figure 3.4A, is only supplied as a standard item in European countries. All other countries it is an optional device.

#### 3.6 Stop Functions

The machines stop functions are as follows :

- Stop category 0
- Stop category 1

##### STOP CATEGORY 0

It is obtained by disconnecting the quick disconnect plug from the air feed system.

It is obtained by turning off the main power switch located on the floorstand

##### STOP CATEGORY 1

It is obtained by removing your foot off of the foot-pedal, that way the machine can't cycle

#### 3.7 Safe Working Procedures



The machine is designed to eliminate any risk associated with its use. The user must obtain adequate training before using the machine. Your local distributor or **ITW AMP** can provide the training.

The other risks associated with using the machine are:

- Crushed fingers in the vertical clamp work area
- Crushed fingers in the horizontal clamp work area

It is imperative that you adhere to the following instructions:

Keep your fingers away from the front & vertical clamp working areas.

Disconnect the air pressure & the power supply before performing any maintenance on the machine.

Keep your foot away from the pedal when doing any maintenance.



## 4 INSTALLATION

### 3.8 Residual Risks

During the normal work cycle and while performing maintenance, the operators and/or technicians are exposed to several residual risks, that because of the nature of the machine cannot be totally eliminated.

- Risk of crushing your fingers due to the presence of the vertical & horizontal clamps.
- Risk due to the presence of electricity in the machine.

### 3.9 Labels

The warning labels supply you with safety information & cannot be removed, covered, or damaged.

To view the label locations on the machine, see Figure.12.2 - C

Table 3.9 A - Label types



Label concerning the machine's characteristics



Label concerning the finger danger zone on the safety guard



Label concerning the behavior to be kept in the work area

**CAUTION: KEEP THE FINGERS AWAY**

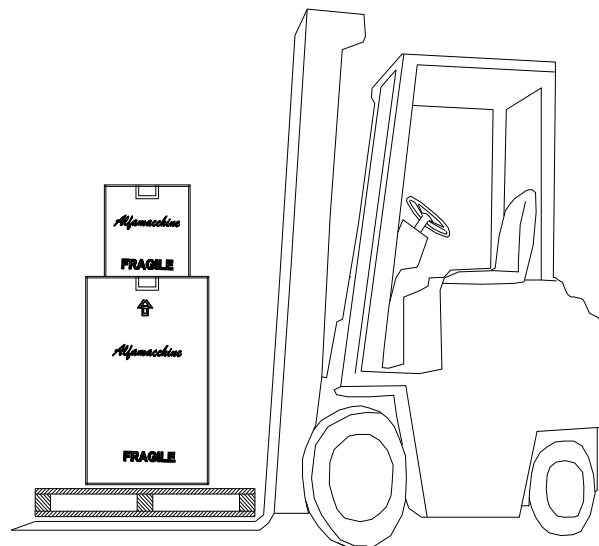
Label concerning the finger danger zone

### 4.1 Shipping and Handling

The shipment must be performed by a qualified technical staff. The machine has to be carefully packaged to avoid any damage to its parts.

- All of the protection & guard devices must be properly closed and clamped.
- The machine has to be shipped like it's positioned for installation.
- Before shipment, it is necessary to lubricate the parts which are not painted to avoid rusting them.
- According to the type of shipment, it is necessary to protect the machine from any jarring or impact.

Figure 4.1 A - Machine handling diagram



Machine's total shipping weight = approx 331 lb

Any damage to the machine during shipping & handling is not covered under warranty.

Repairs or replacement of damaged parts are charged to the customer.

### 4.2 Storage

In case you decide to store your machine, the machine must be stored carefully especially concerning the storage place & duration:

- Store the machine indoors
- Protect the machine from damage due to impacts
- Protect the machine from humidity & high temperatures
- Avoid storing the machine near corrosive chemicals
- Lubricate the parts that are not painted to avoid rust

### 4.3 Preliminary Arrangements

To install the machine it is necessary to prepare a working area adequate to the machines dimensions, lifting devices chosen and length of mouldings to be used.

### 4.4 UNPACKING YOUR MACHINE

The machine is shipped on a pallet, packed into an appropriate carton and protected with foam and polyurethane parts. Remove the external packing and save it for future use. Check for any casual shipping damage and report it immediately. Shipping damages or any other defects must be reported to **ITW AMP** within and not later than 3 days from receipt of the machine.

### 4.5 Positioning Your Machine

Position the machine in its work area.

Screw the levelers into the floor stand and level the machine by loosening or tightening the levelers.

### 4.6 Connections

To avoid any problems while starting up the machine, it is suggested that you follow what is described below.

#### 4.6.1 Pneumatic Connection

Unscrew the lubricator bowl, which is located to the left of the air filter. Fill the bowl with oil up to the full mark. Use **ITW AMP** oil, part number T-064 for a 16 oz bottle or T-020 for a 1 gallon bottle).

Screw the pressure gauge into the Filter/regulator/lubricator. (see figure 3)

Connect your air supply line to the machine. (see figure 4)



figure 4



Please Note: Use **ITW AMP** oil in the lubricator or Castrol Magna GC32. Use of generic lubricants can damage the valves in the machine.

#### 4.6.2 Electric Connection

Verify that the incoming voltage to the machine is 120 Volts. Connect the power supply cable into the socket on the floorstand. Do not use an extension cable, as this could create problems with the machine.

Turn the power switch to the right to turn on the machine. Verify that the green light, next to the switch is on. Now you will need to press the green button on your keypad. If the green light on the keypad does not come on, rotate the emergency stop button to the right to disengage it & press the green button on the keypad again.

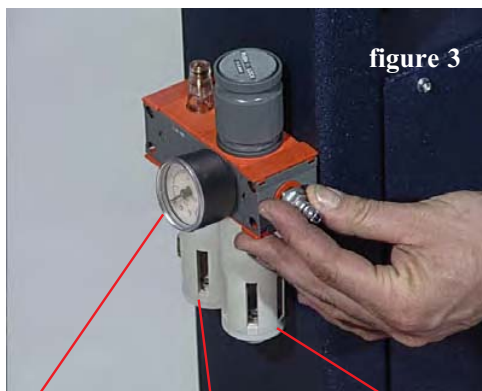


figure 3

Pressure Gauge   Lubricator Bowl   Air Filter

#### 4.6.3 Keypad Connection

To connect the keypad, proceed as follows:

- Connect plug "A" of figure 4.6.3 into socket "a" of figure 4.6.4
- Connect plug "B" of figure 4.6.3 into socket "b" of figure 4.6.4
- Connect plug "C" of figure 4.6.3 into socket "c" of figure 4.6.4

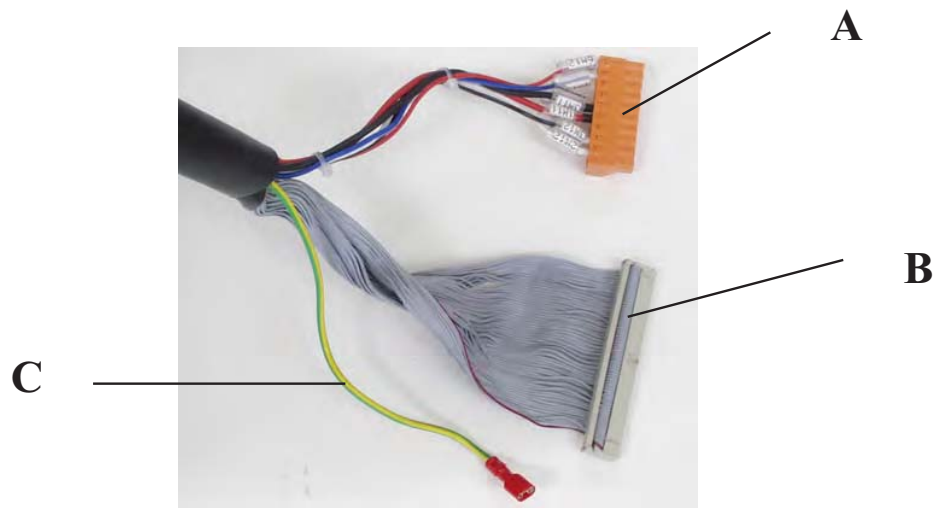


Figure 4.6.3

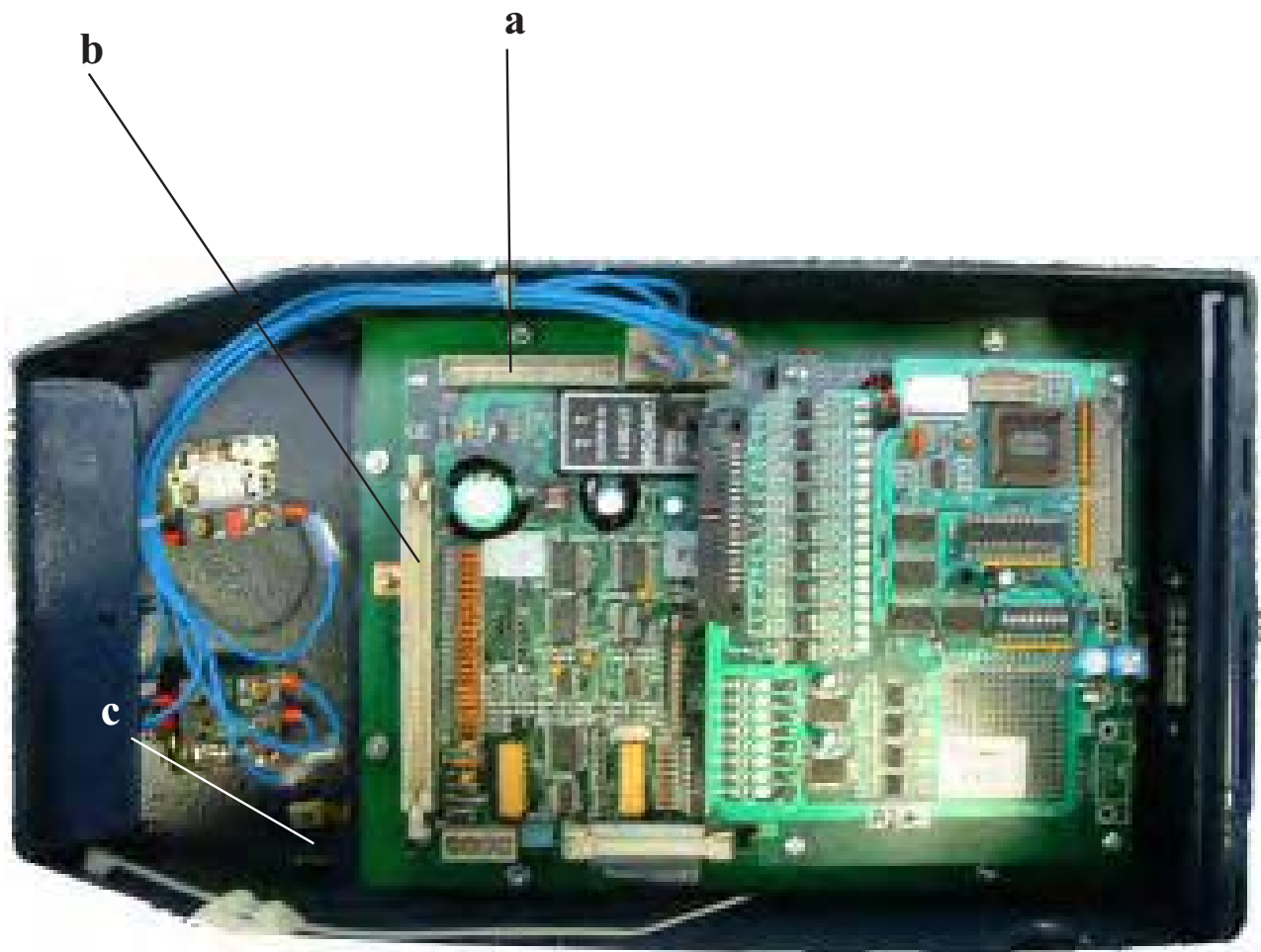


Figure 4.6.4

#### 4.7 Preliminary Controls

There are several items that need to be checked before using the machine.

Have a technician check the following items:

- Verify that the machine was not damaged during setup or unpacking.
- Verify the integrity of the circuit boards, keypads, electric cables/wires, & airlines.
- Check the incoming voltage to the machine.

#### 4.8 Preparing The Machine For First Use

##### \*\*\* 4.8.1 Loading the V-Nail<sup>®</sup> Magazines

To load the V-Nail<sup>®</sup> magazines, proceed as follows:

- Turn on the power to the machine.
- From the main screen press the “.” (point) button .
- All of the nail magazines will open.
- Insert the nails into the magazines according to height (See figure 7). Make sure that the glue side faces upwards & that the point of the nail faces the back of the machine (See figure 7).
- Press the “.” (point) button to close the magazines.

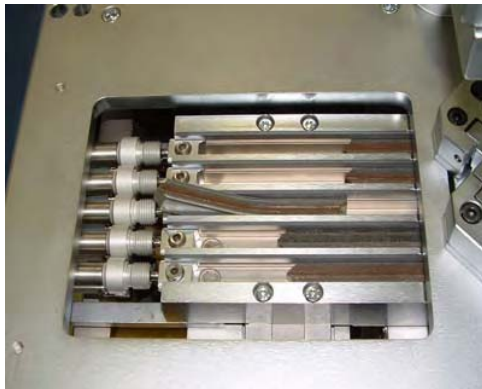
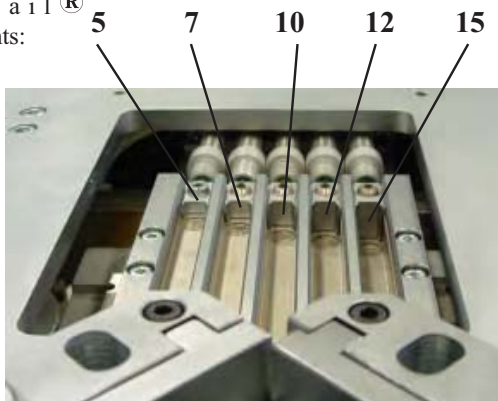


Figure 7

V - Nail<sup>®</sup>  
Heights:



Note: When you have used all of the V-Nails<sup>®</sup> in any or all of the magazines or if there are not enough nails present to complete a cycle, the machine will stop & beep three times. Then it will automatically move to the reload position & open all of the nail magazines.

##### \*\*\* 4.8.2 Removing the Nailhead for Maintenance

To remove the nailhead, proceed as follows:

- Press the emergency stop button & disconnect the airhose.
- Using the supplied 5mm allen wrench, loosen the screw in the nailhead (See figure 8)
- Lift the nailhead upwards to remove it (See figure 9)
- Perform the maintenance required.
- Install the nailhead (See figure 8)
- Tighten the screw on the nailhead (See figure 8)



Figure 8



Figure 9



Figure 10

#### 4.9 Setting up your Machine

Your machine was tested at the factory before it was shipped. Because of this you only need to do the following:

##### 4.9.1 Setting the V-Nail<sup>®</sup> Positions

The Mitre-Mite<sup>®</sup> MP Multichannel is equipped with a moveable driver assembly. The movement is controlled by a servo motor which guarantees the precise insertion location of the V-Nails<sup>®</sup>

The maximum stroke of the driver assembly is 145mm (5.7"). Within this stroke you can set 10 different nail positions. The positions are set by the operator for each new program that is created. For programming instructions please see chapter 6.

##### 4.9.2 Setting the vertical hold down

To guarantee that your moulding is perfectly clamped during the assembly process, your machine has been supplied with a double hydraulic hold down. It can adjust horizontally & vertically.

##### 4.9.2.A Setting the horizontal position of the hold down

- Place the moulding on the machine.
- Loosen the (B) handles (see figure 12).
- Adjust the cylinders over the moulding where the V-Nails<sup>®</sup> are located
- Tighten the handles "B"
- Loosen the "A" handles
- From the program window on the keypad, press F5 to clamp the moulding
- Tighten the "A" handles
- Press F5 to release the clamps

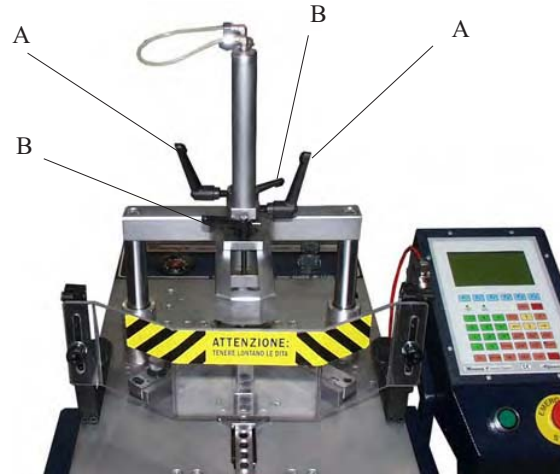


Figure 12

##### 4.9.2.B Setting the vertical position of the hold down

To set the vertical position of the hold down, proceed as follows:

- Loosen screw C of figure 4.9.2.B with a 6mm allen wrench
- Set the height of the hold down, making sure that you can remove an assembled corner.
- Tighten screw C of figure 4.9.2.B

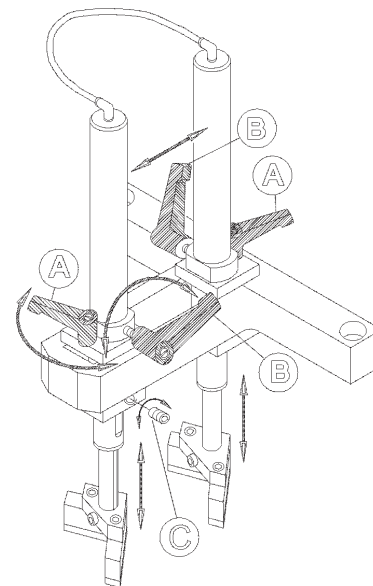


Figure 4.9.2.B

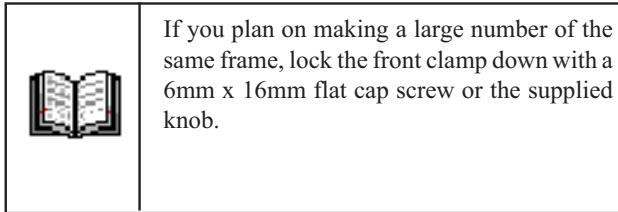


#### 4.9.3 Horizontal Clamp Adjustment

The front clamp has a series of holes in it, allowing it to be positioned properly for each moulding to be joined.

To position the clamp properly, proceed as follows:

- Lift the clamp up about 10/15 mm (3/8"-5/8"). Move it forwards until it touches the rabbit of the moulding.
- Lower the clamp onto the peg inside of the channel. If necessary use the next hole. Lock it down with the supplied knob or a 6mm x 16mm flat cap screw.



#### 4.9.4 Fence Adjustment

The machine is supplied with a dial adjustable tilting fence. Each side of the fence has knobs that tilt the fence a few degrees forwards or backwards.

Sometimes it is necessary to tilt the fence so the moulding is properly clamped.

The fence is capable of adjusting from 4 sided frames to 6 or 8 sided frames.

To change from 4 sided frames to 6 or 8 sided frames, proceed as follows:

- Disconnect the air & electric supplies before proceeding.
- Using a 5mm allen wrench remove the external bolt from both fence parts. Then loosen the internal screws.
- Put the supplied fence template on the machine, making sure that you have the correct angle selected ( 4-6-8 sided frame).
- Keep the two fence pieces tight against the template & align the "V" in the nailhead to the fences; using the center line on the template as a guide.
- Tighten all of the bolts when you are satisfied with your adjustment.

Please note: It is important to see if the center line of the template matches up with the "V" in the nailhead closest to the back of the machine & as far forward as the line on the template permits.

#### 4.9.5 Clamp Pressure Adjustment

The clamp pressure must be adjusted according to the density of the wood being used.

If the clamp pressure is too low, the nails might not be completely inserted into the wood & if it is too high, you can crush softwoods.

The clamp pressure is adjusted by a regulator (see figure13)

To adjust the clamp pressure, proceed as follows:

- Pull upwards on the regulator cap about 3-4 mm to unlock it.
- Turn it clockwise to increase the pressure & counter-clockwise to decrease it.
- Push the cap down to lock it in position.

We recommend using the following pressure:

Softwoods	(samba..)	1,5 - 2,0 Bar	30 - 40 PSI
Medium woods	(ramin,...)	2,0 - 3,0 Bar	40 - 60 PSI
Hardwoods	(Oak.....)	3,0 - 5,0 Bar	60 - 80 PSI

The values listed above are for 7 mm & 10 mm nails.

For 15 mm nails, increase the pressure by 10 %.

When stacking 2 or more nails increase the pressure by 10-15 %.

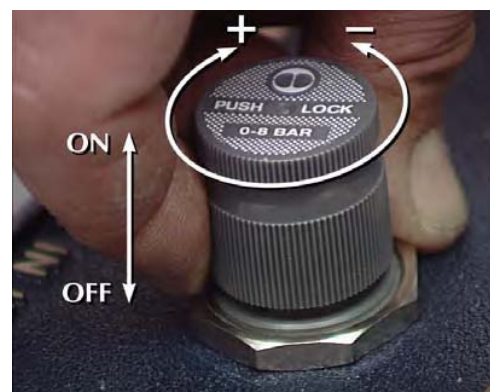


Figure 13



#### 4.9.6 Safety Guard Adjustment

The machine can be ordered with a safety guard.

To adjust the guard, proceed as follows:

- Loosen the knobs that are on the left & right side of the guard. Lift or lower it until it is about 6-8mm above the moulding being used.
- Tighten the knobs.



Even when the shield is properly adjusted, it is necessary to follow the instructions listed below:

- Keep your fingers away from the vertical & horizontal clamps.
- Disconnect the air supply before performing any maintenance.
- Keep your foot off of the foot pedal & press the emergency stop button while making any adjustments.

#### 4.10 Items to Check Before Assembling

##### Frames

Once the machine has been properly installed, check the following:

- The moulding is inserted properly into the fence.
- The nail magazines are loaded with the correct type of nails.
- The vertical & horizontal clamps are set correctly (see chapters 4.9.2 & 4.9.3).
- The air & electric supplies are connected & turned on.
- The clamp pressure is set properly (see chapter 4.9.5).
- You have selected the program for the moulding you are assembling
- The safety guard is set properly (see chapter 4.9.6)
- Press the foot pedal to activate the machine.

## 5. Machine Controls

### 5.1 Operators

The machine was designed to be used by a single operator. The operator must be trained in the use of the machine & has to read this instruction manual. They must pay special attention to all of the safety precautions listed. They must also know the following:

- Must be able to read & understand the manual, including the drawings & schematics.
- Must be knowledgeable about safety precautions.
- Must have knowledge of the specific line where the machine is installed & the plant where it is located.
- Must have specific knowledge about the frame assembly process.
- Must know how to operate the emergency stop features.

The maintenance staff must be adequately trained in the technical field.

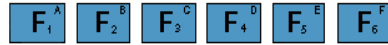
### 5.2 Keypad Controls

F1 ... F6	Function keys
MENU	Return to the previous menu
RESET	Resets the board
1-9	Inputs numeric data
A .. Z	Inputs alphabetical data
TC	Nail counter
T	Adjustment set
Yellow Keys	Navigation keys
S1 .. S4	Change speed type 1 in execution menu
[Shift] S1 .. S4	Change speed tipo 2 in execution menu
S5	Future application
SPACE	Inserting a space
SHIFT	Activates the alphabetical keys
DEL	Deletes
ENTER	Data conformation
M- .. M+	Deletes or inserts positions
EXE	Executes program
STOP	Stops the machine

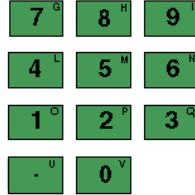


### 5.3 Keypad Button Colors and Functions

Blue Keys:                      Function / alphabetical keys



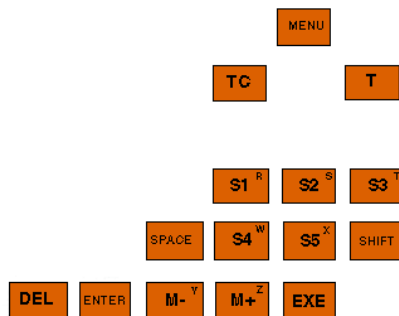
Green Keys                      Numerical / alphabetical keys



Red Keys                      Reset key (reinitialization); STOP (Motor stop)



Orange keys                      Editing keys / future application keys



The keypad has two lights on it:

- One of them is green (POWER ON).
- The other one is red (CPU Error); if this light is on & pressing the reset button does not reset this light, contact your local distributor or [ITW AMP](#) for further assistance.

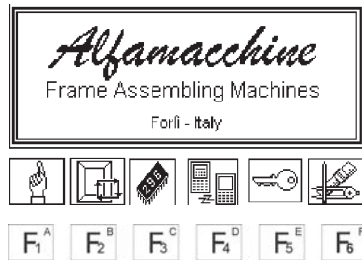
### \*\*\* 6 Operating Modes

The Mitre-Mite<sup>®</sup> MP Multichannel allows the operator to create different programs for each profile they want to assemble.

The machine has one operating mode:

- Semi-automatic mode with operator input.

When you turn on the machine you will see the following screen:



The icons corresponding to the function keys (F1..F6), have the following meanings :

F1 Manual Functions

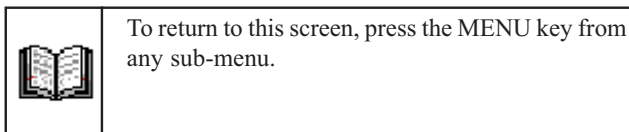
F2 Program / Run Functions

F3 Backup programs to EEPROM

F4 Transferring Programs To Other Machines.

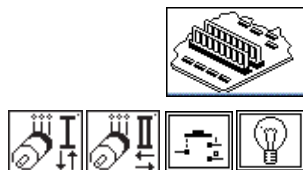
F5 Input Access Code

F6 Machine Parameters



#### 6.1 Manual Functions

Press F1 from the main screen to enter into the manual function menu, seen below:

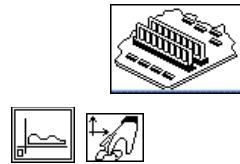


##### Manual Function Menu

Press F1 from the main menu to access the manual functions. The following functions are available:

F1	Motor 1	Gives you access to the nail driver motor test screen
F2	Motor 2	Gives you access to the nail magazine motor test screen
F3	Input Test	Gives you access to the input test screen for the circuit board
F4	Output Test	Gives you access to the output test screen for the circuit board

#### 6.1.1 Motor 1



Pressing F1 then F1 again you see the screen above:

F1 Homing of axis 1; (nail driver motor)

Moves the axis to the HOME position.

F2 Jog Motor 1

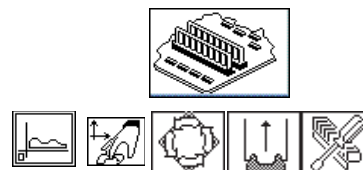
Press the yellow arrow keys to move the nail driver carriage towards the fences or away from them.

You will see the numbers on the display increase as you move the carriage away from the fences & decrease as it moves towards the fences.

This option is useful to visually verify the correct position of the carriage

Press F1 to confirm the position or press F2 to cancel it.

#### 6.1.2 Motor 2



Pressing F1 then F2, you will see the screen above:

F1 Homing of Axis 2 (nail magazines)

Moves the axis to the HOME position.

F2 Jog Motor 2

Pressing the yellow arrow keys moves the magazines to the left or right.

F3 Changes the magazine position

Each time you press F3, the magazine moves to the next nail size, aligning it with the driver cylinder.

F4 Opening & closing of the magazine

When you press F4, the nail magazines move forward to engage the driver assembly. Make sure this is open before trying to change the magazine position.

F5 Magazine test

Allows access to the magazine test screen. These tests allow you to test various functions relating to the magazines.

### 6.1.2.1 Magazine Test

Pressing F1, then F2, then F5 from the main screen:

Allows you to perform certain test pertaining to the magazines.

Pressing F1 through F5 in this screen, moves the assembly to the different nail magazines/nail heights.

- 1 Moves the nail magazines forwards & backwards to align it with the L-Block.
  - 2 Opens & closes the feed cylinders.
  - 3 Raises up & drops down the driver blade.
  - 4 Moves the driver head into the HOME position.
  - 5 Moves the driver head to the maintenance position.
- EXE Test , step by step or Automatic (reserved for qualified technicians)

#### 6.1.2.1.1 Step by Step Test and Automatic Test

Pressing: F1, then F2, then F5, then EXE from the main screen:

Allows you to perform certain tests pertaining to the magazines.

- 1 Pressing F6 you start a predetermined step by step cycle. Each time you press F6, the assembly moves to the next step.
  - 2 Automatic test cycle
- Pressing F1..F5 Inserts or deletes a nail height from the test program.
- 3 Determines the first position of the head.
  - 4 Determines the second position of the head.
  - 7 Activates or deactivates the driver blade during the test program.
  - 8 The number of nails per position.
  - 9 Regulates the speed of the head.

### 6.2 Input Test

Pressing F1 then F3 you will:

Enter into the input test menu & will see the following screen:

Input Test	
Pedal	:off
Pressoswitch	:on
Home or Min Switch	:off
Max Limit Switch	:off
Emergency	:on
Change Speed	:off
CNT Sensor Mag 01 - H5 -	:off

### 6.3 Output Test

Pressing F1 Then F4 you will:

Enter into the output test menu & will see the following screen:

Output Test	
Horizontal clamp	:off
Vertical clamp	:off
Hammer	:off
Buzzer	:on
SV Nail Pusher + Air	:off
SV Stapple Loader	:off
SV Stick descent mag 01	:off

Press the yeloow arrow buttons to move the cursor to the function you want to operate & then press enter to confirm your selection & activate the function.



You must HOME the machine before performing any of the output tests.



The function buttons above F1 .. F6, can only be accessed after you press the correct sequence of buttons from the main menu.

## 7 Program Functions

From the main screen press F2 & you will see all of the programs stored in the memory. The following functions are available:

- F1 Loads the selected program
  - F2 View the selected program
  - F3 Search for a program
  - F4 Edit a program
  - F5 Enables or disables the foot pedal to clamp moulding
- Use the yellow buttons to move the cursor up or down to select the program you want to use.


### 7.1 Editing a Program


*Press F2 then F4*

To access the editing menu, press F2 then F4 from the main screen. The following functions will be available:

- |    |        |  |
|----|--------|--|
| F1 | Rename | Allows you to rename a program already stored in the memory.   |
| F2 | Copy   | Allows you to copy a program already stored in the memory.   |
| F3 | Delete | Allows you to delete one or more programs stored in the memory.  |
| F4 | Search | Allows you to search for the name or code number of a program already stored in the memory & also allows you to search for the first free programming line/code. |

In this part of the program, you can also create a new program. To avoid the accidental loss of programs, the editing menu is password protected.

To be able to edit or add a new program it is necessary to enter in the password. From the main screen, press F5 & type in the password 5678. You can also type in the password anytime you see the KEY  icon.


When you see this icon,  it means that the access is enabled.

When you see this icon,  it means that the access is disabled.


#### 7.1.1 Renaming a Program

*Pressing F2, then F4, then F1 will:*

Allow you to rename a program already stored in the memory. After pressing F2 then F4, use the yellow arrow keys to move the cursor to the program you want to rename. Press F1 & type in the new program name. You will need to press ENTER after the renaming to confirm your decision.

	To use a letter versus a number:
	- Press the SHIFT button: the red light on the button will come on.
	- To disable the letters, press SHIFT again & the light will go off.

To delete a character, press DEL as many time as necessary  
To insert a space, press SPACE.

	In case you want to return to a previous menu from any sub-menu, press the MENU button. Pressing the button several times will bring you back to the main screen.

#### 7.1.2 Copying a program

*Pressing F2, then F4, then F2 will allow you to copy a program.*

Press F2 then F4 & position the cursor on the program you want to copy.

Press F2 & then move the cursor to the code/line number you want to copy the program to, then press F1 & type in the new program name. If you want to delete a character, press the DEL button.

#### 7.1.3 Deleting

*Pressing F2, then F4, then F3 will allow you to delete programs.*

After pressing F2 & F4, Position the cursor on the first program you want to delete. Press F3 & type in the code of the last program you want to delete & press ENTER.

#### 7.1.4 Searching for a Program

*Pressing F2, then F4, then F4 allows you to search for a program.*


You will have 3 options to search for a program:

- F1 Search for the name of the program
- F2 Search for the code/line number of the program
- F3 Search for the first free programming line/code number

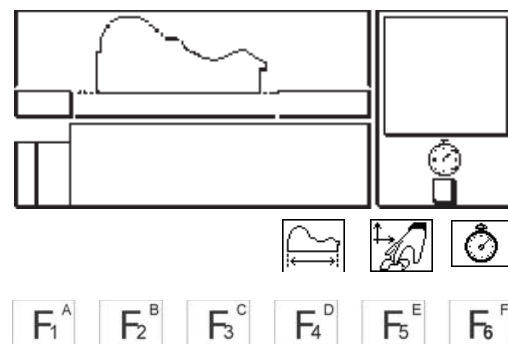
### 7.2 Creating a New Program

*Pressing F2, then F4 will allow you to make a new frame program.*

Position the cursor on the first free code/line number & press ENTER. Type in the program name & press ENTER.

	To use a letter versus a number:
	- Press the SHIFT button: the red light on the button will come on.
	- To disable the letters, press SHIFT again & the light will go off.

The following display will appear:





The buttons F4 - F6 have the following functions:

- F4 Specify the width of the moulding along the cut,in mm.
- F5 Auto-learning of the V-Nail® positions.
- F6 Sets the running speed of the machine.

Codice	Speed
> 1 <	Speed slow 001
2	Speed slow 002
3	Speed normal 001
4	Speed normal 002
5	Speed fast 001
6	Speed fast 002
7	Speed extra fast 001
8	Speed extra fast 002

Use the yellow arrow buttons to move the cursor to the speed you want to use then press ENTER or F1 to confirm your selection or F2 to cancel it.

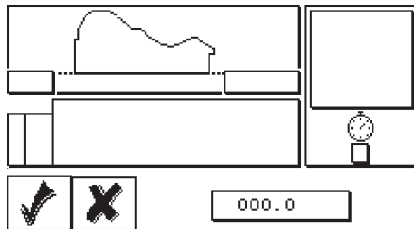
After you have inserted the working speed, it is necessary to insert the nail positions (10 max ), quantity of nails per position (9max) & the height of the nail used for each position.

To insert the nails, you have two possibilities:

1. Auto Learning (F5 )
2. Manual entry

### 7.2.3 Auto-Learning V-Nail® Positions

Press F5 & the following window will appear:



Using the yellow arrow buttons, move the driver assembly to the first nail position & press F1 or Enter to confirm your position or press F2 to cancel. You will see the cursor move to the next field in the display. It will ask you how many nails you want it the position you just made. Type in the number of nails & press Enter. Now you need to type in the height of the nail you want to use & press Enter.

If you want more than one nail position, press F5 & repeat the steps above for each nail position you want to insert. To save the data you just entered, press the MENU button 2 times.

## 7.3 Programming Nail Positions Manually

Using the yellow buttons, position the cursor on the first nail insertion line & press ENTER.

- Insert the distance from the external of the moulding to the first nail position; in mm & press ENTER;
- The cursor will automatically move to the next field. Type in the quantity of nails you want; (a maximum of 9 per position) & press ENTER.
- The cursor will automatically move to the next field. Type in the nail height you want to use for this position, (EX: 5, 7, 10, 12, 15) & press ENTER.
- The cursor will automatically move to the next nail insertion field. Repeat the above process to insert more nail positions.

Press the MENU button to return to the program list. If you keep pressing the MENU button, you will go back to the main screen.

In case you forget to type in a necessary field, you will see an error message telling you to complete the missing data. If you don't insert the data, the program will be incomplete & won't work.

### 7.3.1 Adding or Deleting a V-Nail® Position

To insert a nail position in between two positions already programmed, proceed as follows:

- Position the cursor where you want to insert a nail position.
- Press the “M+” button
- Confirm your choice by Pressing “ENTER”.
- You will now see a free position that you can enter your data into.

To delete a nail position, proceed as follows:

- Position the cursor on the nail position you want to delete.
- Press the “M-” button.
- Confirm your choice by pressing “ENTER”.

### 7.3.2 Execution Menu

Pressing F2 you enter into the execution menu.

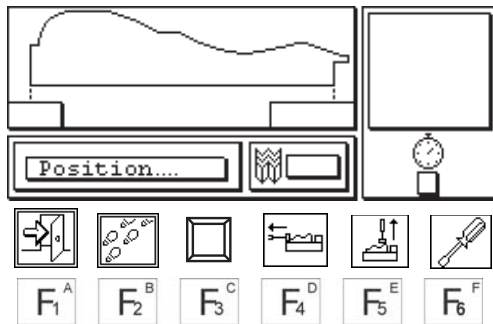
You will see the following list of programs already stored in the machines memory.

CODE		Init Sequence
>	1	< Program_Name
	2	Program_Name
	3	Program_Name
	4	Program_Name
	5	Program_Name
	6	Program_Name
	7	Program_Name

From this screen, if you press the F2 button, you can view the settings of the program or modify some of its parameters. Pressing the F3 button allows you to search for a code number or name of a program ( See chapter 7.1.4 ).

Use the yellow buttons to position the cursor on the program you want to use & press ENTER or F1 to select it. Press the F1 button to HOME the machine.

You will see the following screen:



F1 Allows you to go to the previous menu (Out the door).

F2 Allows you to run a step by step cycle

F3 Allows you to select the correct type of frame you are assembling. There are three possibilities:  
4 sided frame  
6 sided frame  
8 sided frame

F4 Activates the horizontal clamp.

F5 Activates the vertical clamp

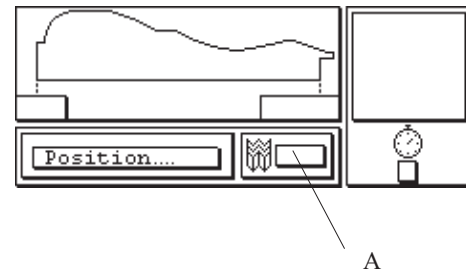
F6 Opens the maintenance menu:  
Pressing F1 x5 opens all of the nail magazines so you can refill them.

Pressing F6 moves the driver assembly to the maintenance position.

Pressing F5 activates the driver blade.

After you are in the maintenance position, pressing F6 returns you to the previous menu (execution menu).

Field (A) indicates the quantity of nails in the magazine.



Pressing F2 then F1, Then F1 will permit you to execute a program.

If you press F2 while in the execution menu, you enter into the step by step test cycle.

The following options are available:

F1 Return to the execution menu

F2 Moves the driver assembly backwards

F3 Moves the driver assembly forwards

F4 Drives a nail (Footpedal must be pressed)  
As soon as the footpedal is pressed, the vertical & horizontal clamps are activated.

To perform a step by step test cycle, proceed as follows:

1. Place the moulding on the machine & adjust the vertical & horizontal clamps.
2. Press the foot pedal to clamp the moulding.
3. Press the F4 button to drive a nail into the moulding. If you want to stack nails, press the button again.
4. Press the F3 button to move the driver assembly to the next position & repeat step #3
5. Repeat steps 4 & 3 until the driver assembly won't move anymore. You will see an "X" through the F3 icon when the last nailing position has been reached.
6. On the screen you will see a picture of a piece of moulding. Underneath this picture you will see the current position of the driver assembly.



In the step by step mode, the F4 icon (Drive nail) won't work until you press the foot pedal. As soon as you press the pedal, the vertical & horizontal clamps are activated to make sure that the moulding is clamped before you drive a nail.

Press F1 to return to the execution menu. After you press F1 the driver assembly will return to the first nailing position.

When you are in the execution menu, proceed as follows:

1. Place the moulding on the machine & adjust the vertical & horizontal clamps. (see chapters 4.9.2 & 4.9.3)
2. Press the foot pedal to obtain a complete cycle. Release the pedal after the machine starts its cycle.

Press F1 or MENU to return to the previous screen.

In the execution screen, the following functions are available:

#### 7.4 Total Counter:

The TC button allows you to see the total number of nails that you have used:

To reset the daily nail count, press the F1 button.

To reset the Square frame count press the F3 button.

To reset the hexagonal frame count press the F4 button.

To reset the octagon frame count press the F5 button.

Press the Menu button to return to the previous screen.

**T-button:** allows you to adjust the vertical clamping times in the program you are using.



The “T” button is only activated when you use the access code (1234)

#### 7.4.1 Modifying the Speed of the Machine

To modify the working speed while in the execution menu use the S1.....S4 buttons or SHIFT+S1.....SHIFT+S4 buttons.

There are eight different working speeds available:

S1	speed slow 1
SHIFT+S1	speed slow 2
S2	speed normal 1
SHIFT+S2	speed normal 2
S3	speed fast 1
SHIFT+S3	speed fast 2
S4	speed extra fast 1
SHIFT+S4	speed extra fast 2

Once you have selected the speed you want to use, press the “ENTER” button to confirm it.

The original working speed will be reset as soon as you exit the execution menu.

#### 7.5 Access Codes

The F5 button from the main menu permits you to enter in access codes. These access codes are needed to access certain submenus.

The submenus referenced above are:

- Parameter Menu F6
- Editing Menu F2

The original access codes are:


Parameter menu (Speed settings)	1234
Editing menu (Frame programming)	5678
Custom parameters menu (Access codes)	9999

These access codes can be changed. If you change the codes, make sure that you write down the new codes.





If you set the edit password to “0”, the editing password will no longer be asked for.


### 7.5.1 Machine Parameters

The F6 button corresponds to this icon  from the main menu.

It is not possible for the customer to access all of these functions. Only the manufacturer can do this for safety reasons.

The customer can access two parameter screens corresponding to the following icons:

F5  and F6 

The F5 button corresponds to this icon  and the CUSTOM parameters relevant to the different axis. The access is possible with the code 9999.

#### 7.5.1.1 Driver Head Axis

Button sequence: F6 -> F5 -> F1

Press F1 or F2 corresponding to these icons:



**Machine codes:** The machine codes are used for the serial communication RS232. The possible values are between A to Z with the default being (A).

**Language:** The language can be changed using the following codes:

0	ITALIAN
1	FRENCH
2	ENGLISH
3	GERMAN

**Power Supply:** Supplied power from 120V in percent (100%)

**Default Speed:** Speed used by default if no selection is made; (3) is the default speed.

**Home any cycle:** Enables the message to Home the machine each time you change programs (Yes)

**Pedal block & Vertical block:** Allows the pedal to keep the vertical &/or horizontal cylinders clamped until the pedal is released. (no)

**Maintenance:** Sets the maintenance position of the driver assembly (135mm)

**Change speed:** Allows the operator to change the working speed while running a program (yes)

**Min/Max Range:** Value to which the moulding is referenced in the program (2)

**Frame Model:** Permits you to see what type of frame is programmed 4-6-8 side (Yes)

**Delay foot pedal:** Time before the machine is activated after pressing the foot pedal (200).

**Pedal prog:** If this option is set to "1", when you press the pedal the vertical & horizontal clamps activate. The rest of the cycle does not complete until you release the pedal. If this option is set to "0", which is the default, the machine completes its cycle as soon as you press the pedal.

**Tm. Off Claw-p:** Time to deactivate the feed cylinders (30)

**Gr. Off. Claw-p.:** Determines the min amount of nails needed to complete a cycle (5)

**Tm fire delayed:** Slows down the drive time to allow the magazine to move to the correct position (200)

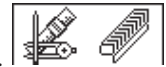
**Graffe Rallenta:** Quantity of nails the machines uses during a cycle before it returns to a normal cycle (5)

**Idleness Min:** Time of inactivity before the machine shuts down; expressed in minutes (20)

#### 7.5.1.2 Magazine Axis

Button sequence: F6 -> F5 -> F6

Press F5 or F6 corresponding to the icons:



**V-Nails® H5, V-Nails® H7, V-Nails® H10, V-Nails® H12, V-Nails® H15:**

Number of nails activating the sensor in each magazine (100, 100, 100, 100, 100)

**Min V-Nails®:** Minimum number of nails before the machine tells you it is time to reload them. (35)

**Enc channel:** Conversion factor for the magazine motor (0,00769)

**First Channel H5:** Encoder position of the first channel H5 (267.8)

**Last Channel H15:** Encoder position of the last channel H15 (20.8)

**Number of magazines:** Number of magazines present in the machine (5)

**Speed Channel, Med speed, Slow speed:** Movement speed of the channels (40, 20, 15)

**Speed 0 channel:** Movement speed of channels (20)

**Error of position:** Maximum control error of the axis in impulses (10)

**Indexing delay:** Delay of opening at the conclusion of a drive cycle (40)


**Positioning T-out:** time-out for the positioning of the channel axis in milliseconds (2000)


**Control T-out:** time-out at the end of a correct motion for the motor in milliseconds (3000)

**Ever on control:** Activates or deactivates the coupling of the motor & magazines

## 7.6 Speed of the Machine

Pressing F6 then F6 allows you to access the machines speed parameters

The **F6 button** corresponds to this icon  speed parameters; (code 1234).It allows you to access & change the default speed parameters.




We do not recommend that you alter the default speed settings, unless we specifically tell you to do so. The settings were thoroughly tested in the developmental stage of this machine & will work properly in most situations

If for some reason you do change the default settings & they don't work properly, you can easily go back to the default setting by pressing the F1 button, then ENTER to confirm your choice.

## 7.7 Production & V-Nail \* Counters

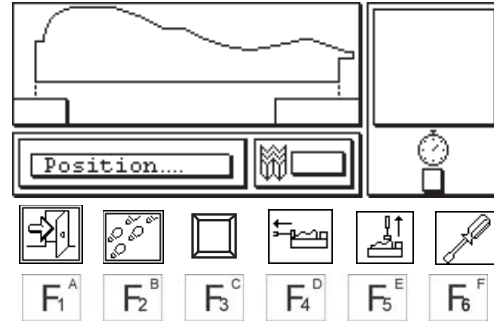
The machine is equipped with a total nail counter, daily nail counter, & production data counter. To access the counters press the TC button.

Daily V-Nails	: XXXX
Total V-Nails	: XXXX
Square	: XXXX
Hexagonal	: XXXX
Octagonal	: XXXX



Resetting the counters is performed by pressing the F1 through F5 buttons

## 7.8 Program Execution



### 7.8.1 Executing a Program you just Entered

Turn on the machine by pressing the green MOTOR ON button. Press F2 then select the program you want to use. To scroll up or down, use the yellow buttons. Once you have found the program you want to use, press F1 or EXE. On the screen you will see the options to:

- Press ENTER or EXE or F1 to make the machine home before moving to the first programmed position.
- You can press F2 to cancel the homing & then the machine will just move directly to the first programmed position.

Pressing the foot-pedal will allow the machine to complete a full automatic cycle.

### 7.8.2 Executing a Program from Memory

Turn on the machine by pressing the green MOTOR ON button.

Press the EXE button or the F2 button to access the program list. Select the program you want to use by scrolling up or down with the yellow buttons or searching for a program by using the F3 button.

Press the ENTER, EXE, or F1 button to select the program. Pressing the foot-pedal will allow the machine to complete a full automatic cycle.

### 7.8.3 Step by Step Functions

After you have entered into a program, you have the following options:

F4 activates the horizontal clamp

F5 activates the vertical clamp

F2 activates the step by step test cycle

Pressing F2 then F3 moves the driver assembly to the second nailing position. At this point if you press the foot pedal, the vertical & horizontal clamps are activated. Pressing F4 at this time drives a nail.

Press F1 to return to the previous menu.

## 7.9 Recommended V-Nails®

### a) V-Nail® types

To allow the machine to make excellent frames using several different substrates, it has been necessary to manufacture different types of nails for the various substrates (See attachment D).

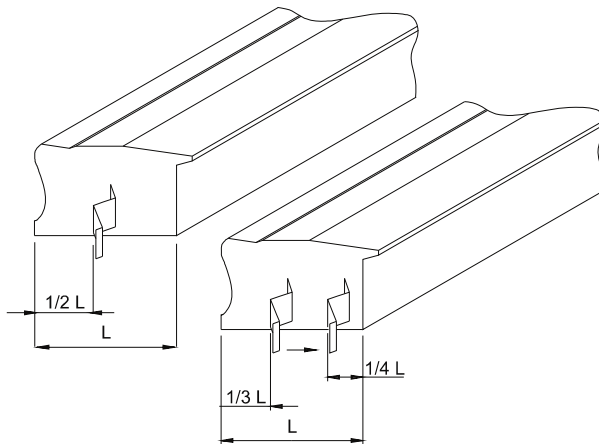
The nails can be classified into three different categories:

For softwoods & soft plastic	Suggested code: SPT
For medium to Hardwoods	Suggested code: HPT
For Horizontal grain MDF/HDF	Suggested code: HDF

### b) Nail Positions

We recommend that you follow the instructions below to obtain the best possible frame assembly:

- Never drive nails very close to the outside of the frame. The minimum distance from the outside of the frame is 10mm.
- When you want to make a frame using only one nail, the best position is in the center of the moulding. The center is calculated by measuring the distance along the cut including the rabbit.
- When inserting 2 or more nails into a corner, we recommend that the outside nail is  $\frac{1}{3}$  of the distance away from the outside of the moulding & the inside nail is  $\frac{1}{4}$  of the distance from the inside of the moulding ( see picture below).



## 7.10 Stopping the Machine

To stop the machine proceed as follows:

- Turn off the main power switch located on the floorstand (see figure 5.7).
- Press the emergency stop button located on the keypad.
- Press the RESET button located on the keypad.



Figure 5.7

## 7.11 Putting out of Service

In case you decide to store your machine or not use it for a long time, it is necessary that you disconnect & turn off the pneumatic & electric supply lines.



## 7.12 Transferring Programs from One Machine to Others

Proceed as follows to transfer programs from the MASTER machine to the SLAVE machine:

1. Connect the serial cable to the connection (Item A of figure 1) on both machines. The connection is located on the back side of the keypad.



Figure 1

2. Turn on both machines.
3. Make sure that the SLAVE machine is in the main screen (press reset). The SLAVE machine is the one in which you want to copy the programs to.

It is possible to transfer:

- A single program (F1)
- A block of programs (F2)
- All of the programs (F3)

### 7.12.1 Transferring a Single Program

To transfer a single program from the MASTER machine to the SLAVE machine, proceed as follows on the MASTER machine:

- From the main menu press F4 to display the programs that are stored in the machine.
- Use the yellow buttons to position the cursor on the program you want to transfer.
- Press F1 to transfer the program.



Before transferring any programs, the programs stored in the slave machine must be deleted.



The program that is transferred to the SLAVE machine will occupy the same line/code number as it was in the MASTER machine.

### 7.12.2 Transferring a Block of Programs

To transfer a block of programs from the MASTER machine to the SLAVE machine, proceed as follows:

- Press F4
- Use the yellow buttons to position the cursor on the first program to be transferred.
- Press F2
- Type in the last code number of the programs to be transferred, then press ENTER.
- Type in the 1st code number on the slave machine where you want to place the selected programs.
- Press ENTER to confirm the transmission.

### 7.12.3 Transferring all Programs

To transfer all of the programs from the MASTER machine to the SLAVE machine, proceed as follows:

- Press F4
- Press F3



The programs will be put into the SLAVE machine in the same position they had in the MASTER machine. They will replace any programs present in the SLAVE machine before the transfer.

## 8. Maintenance

### 8.1 Maintenance State

The maintenance functions must be performed with the machine completely disconnected from its power sources air & electric, (see chapters 7.10 & 7.11")

### 8.2 Isolating the Machine

Before performing any maintenance or repair of the machine, it is necessary to isolate the machine from its power sources, proceed as follows to isolate it :

- Turn off the main power switch located on the floorstand & disconnect the electric plug from its electrical outlet/power source.
- Disconnect the incoming airline to the machine, located on the side of the floorstand. Check all pressure gauges to make sure that there is no air in the machine, they should read "0".

### 8.3 Particular Precautions

During maintenance or repair operations we suggest you that proceed as follows:

- Before starting any maintenance or repair , place a sign on the machine "Machine under maintenance" in a visible location.
- Do not use flammable solvents.
- Do not step on the machine or its parts, because they have not been designed to sustain the weight of people.
- Disconnect the power supplies (air & electric).
- Once all of the operations are finished, restore/re-install all connections & protection devices.


### 8.4 Cleaning

The machine's structure is simple & robust therefore the mechanical parts do not require any special maintenance.


It is recommended that you follow the instructions listed below:

- Periodically remove glue or any other residue from the nailhead & the top part of the driver blade.
- Always keep the nail magazine clean.
- Remove any residue from the L-Block.

Do not use water to clean the machine, since it will create rust the metal parts.

	Before you clean the machine, it is necessary to disconnect the electric & pneumatic supply lines.
---	--

### 8.5 Lubrication

	In case you use glue when assembling frames, we suggest that you lubricate the driver blade daily.
---	--

Fill your lubricator with oil, use CASTROL MAGNA GC 32, or [ITW AMP](#) oil, or its equivalent. Do not use oil with heavy cleaners in it, as they will damage the valves & gaskets in the machine.

WE recommend that you lubricate the driver blade every 200 working hours.

Attention: Unsuitable lubricants will cause valve seal problems & will destroy the gaskets in the machine.

### 8.6 Ordinary Maintenance

The following operations must be performed in accordance with the frequency listed below. If you don't perform the following instructions, the manufacturer is exonerated from any responsibility regarding the warranty.

The operations listed below are simple to do, but they must be performed by fully trained technicians.

The ordinary maintenance includes repair, cleaning & preventative maintenance. This will help reduce downtime on your machine.

- Lubrication of the machine.
- Wear/replacement of parts.

Tab. 8.6

MAINTENANCE	DESCRIPTION	MACHINE STATE
Driver blade	Replace after 1,000,000 nails used	Isolate for maintenance
Lubrication	Lubricate the driver blade every 200 hours	Isolate for maintenance
Nailheads	Replace after 5,000,000 nails used	Isolate for maintenance
L-Block	Replace after 5,000,000 nails used	Isolate for maintenance

### 8.7 Extraordinary Maintenance

We have listed below the operations that require the intervention of **ITW AMP** , your local distributor's technical staff or by fully trained staff at your facility.

The extraordinary maintenance includes interventions that need to be performed in exceptional cases:

- Breakage
- Revisions

TAB. 8.7

MAINTENANCE	DESCRIPTION	MACHINE STATE
Valves & reducers	Replace every 6-8,000,000 nails used	Isolate for maintenance
Vertical & horizontal cylinder gaskets	Replace in case of an air leak	Isolate for maintenance

## 9 Diagnostics

### 9.1 Safety Warnings

The following interventions must be performed by trained technicians. You must take all safety precautions into effect in order to prevent the accidental starting of the machine.

### 9.2 Breakdown Search

Functional inconveniences (Cause - Remedy)

#### **9.2.a Pressing the pedal the V-Nails<sup>®</sup> don't come out**

Possible Cause	Remedy
Insufficient working (incoming) pressure	<ul style="list-style-type: none"><li>• The minimum value should be higher than 4 Bar (58PSI)</li></ul>
V-Nails <sup>®</sup> positioned wrong in the magazine	<ul style="list-style-type: none"><li>• The sharpened side (glued side) must be facing you</li><li>• The “V” vertex of nails must face the rear of the machine</li></ul>
Insufficient pressure on the nail feed cylinder	<ul style="list-style-type: none"><li>• The regulator pressure must be at least 1.5 bar (22PSI), If necessary increase it by 5%.</li></ul>
Defective V-Nails <sup>®</sup>	<ul style="list-style-type: none"><li>• Replace the V-Nails<sup>®</sup></li></ul>

#### **9.2.b After several cycles the machine operates incorrectly**

Possible Cause	Remedy
Jammed valves because of water or excessive oil	<ul style="list-style-type: none"><li>• Eliminate the water or excessive oil by disconnecting the airlines one by one to make the air pressure force out the water or oil</li></ul>
Defective valves	<ul style="list-style-type: none"><li>• Replace the control valves</li></ul>

#### **9.2.c Pressing the pedal the machine works ok, but when it is released there is a delay in the return of the hold down cylinders or the driver blade**

Possible Cause	Remedy
Valves Defective or broken	Replace bad valves

#### **9.2.d The machine works ok for some time then quits working**

Possible cause	Remedy
Broken/bad valves	<ul style="list-style-type: none"><li>• Replace valves</li></ul>

#### **9.2.e Pressing the foot pedal the machine does not work.**

Possible cause	Remedy
Insufficient working pressure	<ul style="list-style-type: none"><li>• The air pressure coming out from the compressor must be at least 4 Bar (58PSI)</li></ul>
No electric supply to machine	<ul style="list-style-type: none"><li>• Verify that the main switch is turned on and the machine is connected with the electric supply</li><li>• If the machine is connected and there is power verify that “power on” diode is turned on</li></ul>

#### **9.2.f The electric parts do not work**

Possible cause	Remedy
The machine is disconnected from the electric network or one or more of the fuses are blown	<ul style="list-style-type: none"><li>• Connect the machine to the electric network</li><li>• Unscrew the panel located on the rear side of the floorstand</li></ul> <p>Check the fuses with a multi-meter to see if they are blown</p> <ol style="list-style-type: none"><li>1. Network filter board M003/x: delayed 4A fuse (mod. 5x20 glass)</li><li>2. Board M021/x....F1 delayed 10A fuse (mod. 5x20 glass)</li><li>3. F2 delayed 6,3A fuse (mod. 5x20 glass)</li></ol>
Wrong voltage	<ul style="list-style-type: none"><li>• Connect the machine to a 120 V socket</li></ul>
If the above listed conditions are correct and the failure still exists	<ul style="list-style-type: none"><li>• call <a href="#">ITW/AMP</a> or your local distributor for assistance</li></ul>

### **9.2.g V-Nails<sup>(R)</sup> don't stack properly**

<b>Possible cause</b>	<b>Remedy</b>
Nails not suitable for the material being used	• Use the correct type of nails
Vertical & horizontal clamps not set correctly	• Adjust clamps properly
Moulding is moving upwards while nail is being driven	• Increase the air pressure
Driver has obstruction or worn out	• Clean out nailhead/magazine/L-Block &/or replace driver blade

### **9.3 Requesting Assistance**

For any information regarding use, maintenance, Installation, or any other questions, we remain at your disposal. The customer has to clearly state their questions & call, fax , or e-mail us about the nature of the problem.

**E-Mail: [itwamp@itwamp.com](mailto:itwamp@itwamp.com)**  
**Phone 1-800-322-4204**  
**FAX: 1-800-426-7019**  
**[www.itwamp.com](http://www.itwamp.com)**



## 10 Spare Parts

### 10.1 Recommended Spare Parts

Even though the machine has been submitted to several tests prior to shipping, we recommend that you stock the parts listed below to guarantee the least amount of downtime in case a part fails.

COMPONENT
Driver Blade Nailhead L-Block Valves-Reducers-Regulators Vertical & Horizontal Cylinder Gasket Kits

### 10.2 Ordering Spare Parts

Please be aware that only a properly trained technician can repair this machine.

We recommend that you use [ITW AMP](#) or your local distributor's assistance center for all repairs, since they have the qualified staff, proper tools, & all necessary original parts to properly maintain your machine.

To order the spare parts listed above, send us a fax or e-mail containing the following data:

- Model of the machine
- Code number/s for all parts requested.
- Reference number of spare part or group indicated on the drawing.
- Drawing number.

## 11 Demolition

### 11.1 Demolition

When you dispose of your machine it is necessary to separate the parts in plastic from the electric components. Most countries require this respecting the current Norms.

Concerning the machines metallic mass, it is enough to separate the steel parts and those of other metals or alloys, for proper recycling.

## 12 Attachments

### 12.1 Declarations

Listed below are the declarations of conformity :

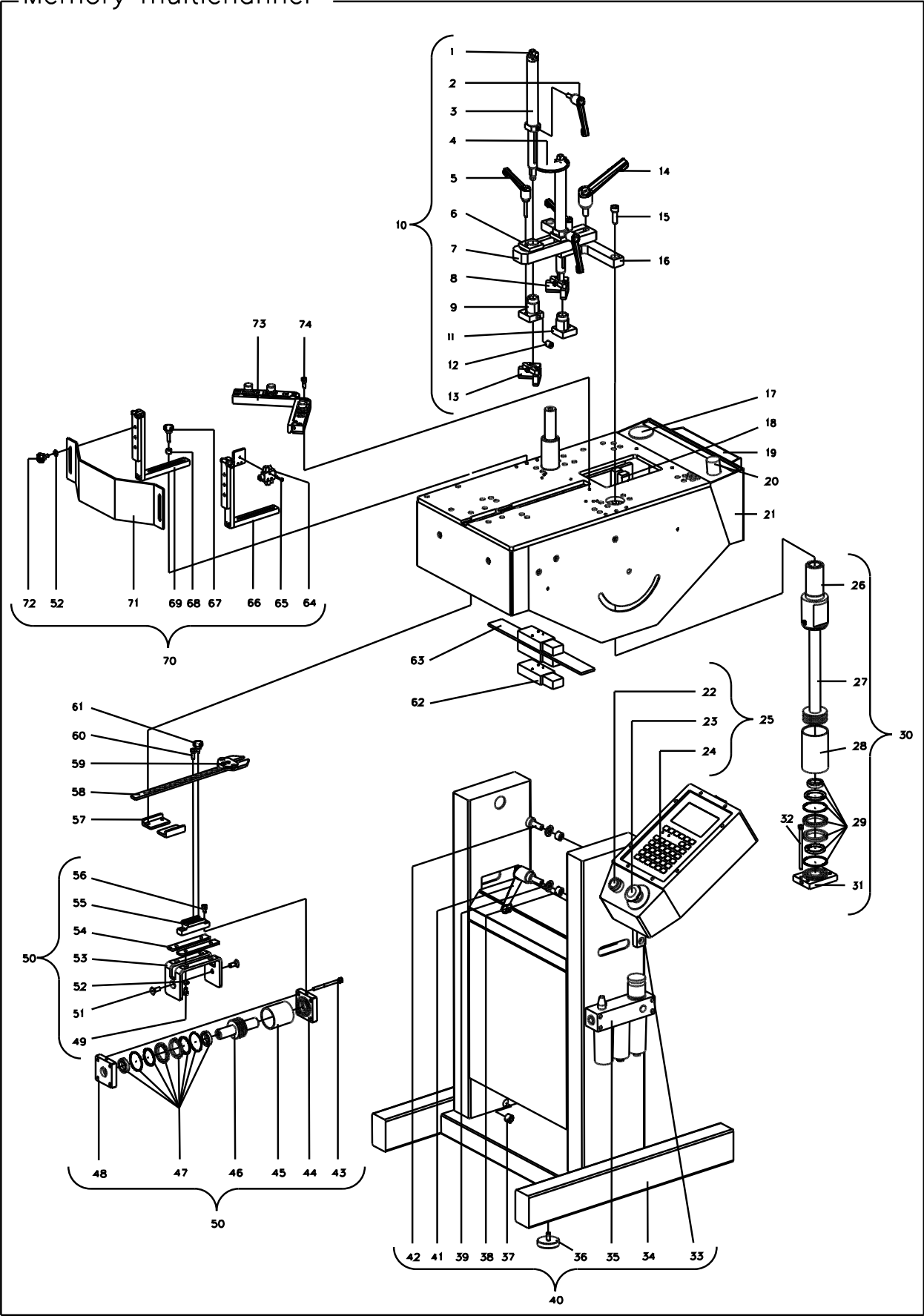
- Declaration of Conformity to the NORM 89/392/CEE
- Declaration of Conformity to the NORM 89/336/CEE

### 12.2 Schematics

You will find the following schematics :

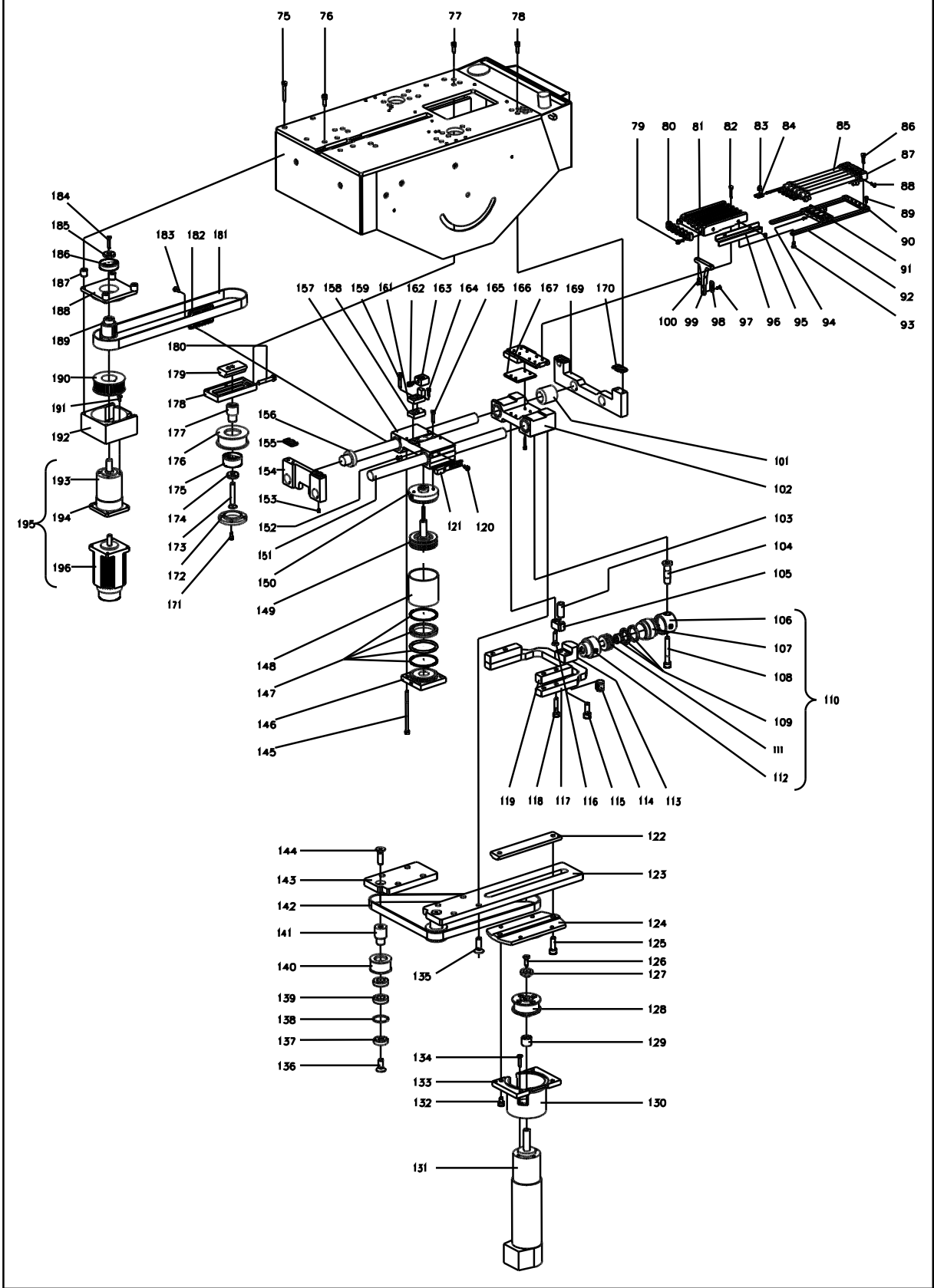
- (A) Mechanical Drawing
- (B) Pneumatic Drawing
- (C) Label Locations
- (D) V-Nail® Selection Guide
- (E) Electric Schematic

Memory multichannel



Ref.	Code Number	Q.ty	Descrizione				
1	730800001	2	Raccordo	56	710100074	1	Vite
2	243170010	2	Maniglia	57	384200020	2	Staffa
3	223130071	1	Cilindro completo	58	242170120	1	Staffa di bloccaggio
4	365110010	1	Tubo	59	242170130	1	Foglia Braccetti Mobili
5	753170005	2	Maniglia	60	366210030	1	Vite
6	383900190	2	Piastrina	61	753320001	1	Pomello
7	383600141	1	Supporto (Traversino)	62	732440023	3	ElettroValvola
8	242230050	1	Tampone	63	384400100	1	Supporto
9	383900200	1	Boccola	64	732540003	1	Valvola
10	242230091	1	Bloccaggio idraulico completo	65	710100203	3	Vite
				66	241300020	1	Supporto
11	383900201	1	Boccola	67	753320002	2	Pomello
12	714300042	2	Grano	68	336100020	2	Distanziale
13	242230060	1	Tampone	69	241300010	1	Supporto
14	753170012	1	Maniglia M14	70	248950010	1	Protezione completa
15	710100157	2	Vite	71	398950030	1	Protezione
16	376400132	1	Traversa	72	753320005	2	Pomello
17	734230003	1	Manometro	73	243160030	1	Squadra completa
18	732440014	2	ElettroValvola	74	710100049	4	Vite
19	291680050	1	Carter				
20	735630002	1	Regolatore di pressione				
21	211250350	1	Basamento				
22		1	Pulsante Start Completo				
23		1	Pulsante Stop Completo				
24	814100030	1	Tastiera				
25	804100030	1	Tastiera Completa				
26	352400230	2	Testata				
27	331000190	2	Pistone				
28	333500240	2	Canna				
29	298390070	2	Kit guarnizioni				
30	225220030	2	Cilindro completo				
31	352200210	2	Fondo				
32	710100100	8	Vite				
33	388200220	1	Staffa				
34	291670085	1	Basamento				
35	258460010	1	Filtro Aria Completo				
36	753690010	4	Piede				
37	258210361	2	Valvola scarico condensa completa				
38	336100060	3	Distanziale				
39	718100004	3	Rondella				
40	240450100	1	Cavalletto completo				
41	714300031	1	Grano				
41	753170003	1	Maniglia				
42	710100115	2	Vite				
43	710100087	4	Vite				
44	352200030	1	Fondo				
45	333500020	1	Canna				
46	331000030	1	Pistone				
47	298390050	1	Kit guarnizioni				
48	352200020	1	Testata				
49	710600002	4	Vite				
50	225120010	1	Cilindro completo				
51	710200081	2	Vite				
52	718100003	4	Rondella				
53	384400010	1	Supporto				
54	371200010	2	Guide				
55	392750011	1	Supporto				

Memory multichannel



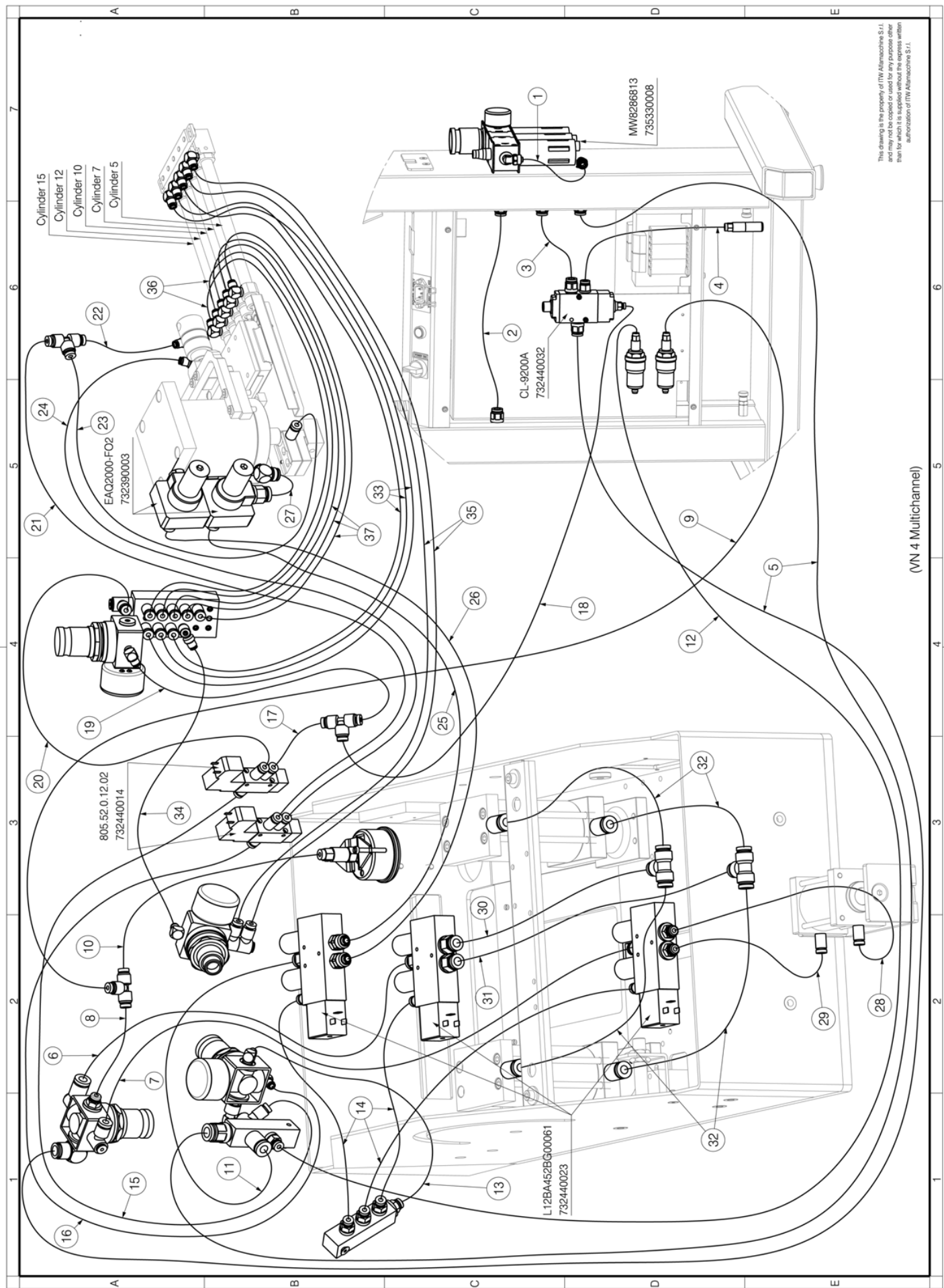
## Memory Multichannel

Ref.	Code Number	Q.ty	Descrizione				
				128	336000210	1	Puleggia motore
				129	336500250	1	Boccola
75		4	Vite	130	352600070	1	Campana
76	710100076	4	Vite	131	807700180	1	Motore completo
77		2	Vite	132		4	Vite
78		2	Vite	133	388200290	2	Staffa
79		2	Vite	134		4	Vite
80	383900710	1	Supporto	135		4	Vite
81	398350070	1	Caricatore	136		1	Vite
82		4	Vite	137	336100740	3	Rondella
83	244500020	5	Perno Completo	138		3	
84	395450060	1	Pressore graffe H5	139		3	
84	395450070	1	Pressore graffe H7	140	336000200	3	Puleggia Folle
84	395450080	1	Pressore graffe H10	141	334500370	3	Perno
84	395450090	1	Pressore graffe H12	142		1	Cinghia
84	395450100	1	Pressore graffe H15	143	373400860	1	Piastra
85	753750020	5	Spingipunti	144		1	Vite
86		5	Vite	145		4	Vite
87	383900720	5	Supporto	146	352200310	1	Testata
88		5	Vite	147	298390280	1	Kit guarnizioni
89		2	Vite	148	333500330	1	Canna
90	376400270	1	Supporto	149	298420120	1	Martelletto Completo
91	383900730	1	Supporto	150	352400350	1	Testata
92	381301300	2	Supporto	151	334000490	2	Asta
93		4	Vite	152		4	Vite
94	817230023	5	Sensore	153		4	Grano
95		4	Vite	154	376400260	1	Traverso Posteriore
96	391650620	2	Carter	155	381600180	2	Spessore
97		2	Vite	156	336500020	1	Distanziale
98	373400880	1	Piastrina	157	352700090	1	Testata
99	384600110	1	Supporto	158	373400870	1	Piastrina
100		2	Vite	159		2	Vite
101	337500640	1	Distanziale	160	224240200	1	Testa completa
102	352700080	1	Testata	161	384200210	1	Supporto "L"
103	362810120	1	Distanziale	162		1	Vite
104	334500380	1	Perno	163	394950050	1	Testina
105	381301310	1	Supporto	164			Vite
106	352400370	1	Testata	165			Vite
107	333500340	1	Canna	166	381600190	1	Spessore
108		1	Vite	167	753800014	1	Guida Completa
109	298390290	1	Kit guarnizioni	169	376400250	1	Traverso anteriore
110	221130020	1	Cilindro Completo	170	381300170	2	Spessore
111	331000310	1	Pistone	171	710100042	4	Vite
112	352400360	1	Testata	172	352600040	1	Coperchio
113	397450050	1	Blocchetto a "L"	173	710200103	1	Vite
114	334500390	1	Perno	174	336100010	1	Rondella
115		2	Vite	175	740550009	1	Cuscinetto
116		2	Vite	176	336000100	1	Puleggia
117	384400110	1	Supporto	177	334500380	1	Perno
118		4	Vite	178	381301320	1	Supporto
119	381600200	2	Spessore	179	384600090	1	Supporto
120	710100042	2	Vite	180	710600010	1	Vite
121	394650010	1	Camma	181	753660006	1	Cinghia
122	383900700	1	Supporto	182	397250090	1	Giunto
123	373400850	1	Piastra	183	710200044	6	Vite
124	384600120	1	Supporto	184	710200046	1	Vite
125		2	Vite	185	336100380	1	Rondella
126		1	Vite	186	740550008	1	Cuscinetto
127	336100750	1	Rondella	187	337500650	4	Distanziale
				188	352600030	1	Coperchio

## Memory Multichannel

189	392550010	1	Mozzo
190	336000110	1	Puleggia motore
191	710200043	4	Vite
192	381300690	1	Supporto
193	827600001	1	Riduttore
194	337500260	1	Distanziale
195	827650005	1	Motore
196	807650040	1	Motore completo





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(VN 4 Multichannel)

Attachment C-Label Locations



## Attachment D-V-Nail <sup>(R)</sup> Selection Guide

	SOFTWOOD			HARDWOOD		
	A	B	C	D	E	F
Height mm	Very soft wood	Softwood	Average softwood	Average hardwood	Hardwood	Very Hardwood
<b>H 3 mm</b>	HPT	HPT	HPT	HPT	HPT	HPT
<b>H 5 mm</b>	HPT	HPT	HPT	HPT	HPT	HPT
<b>H 7 mm</b>	SPT	SPT	HPT	HPT	HPT	HPT
<b>H 10 mm</b>	SPT	SPT	HPT	HPT	HPT	HPT
<b>H 12 mm</b>	SPT	SPT	HPT	HPT	HPT	HPT
<b>H 15 mm</b>	SPT	SPT	HPT	HPT	HPT	HPT

**SPT**      Suitable for softwoods such as: Thailand and asian south-east wood, Cedar, Pine, bass, Banak, Obece, Poplar, Cellular Polystyrene, & Vertical grain MDF.

**HPT**      Suitable for softwoods such as: Cedar, Pine, Bass, Banak, Obece, Poplar, Polystyrene, & PVC.

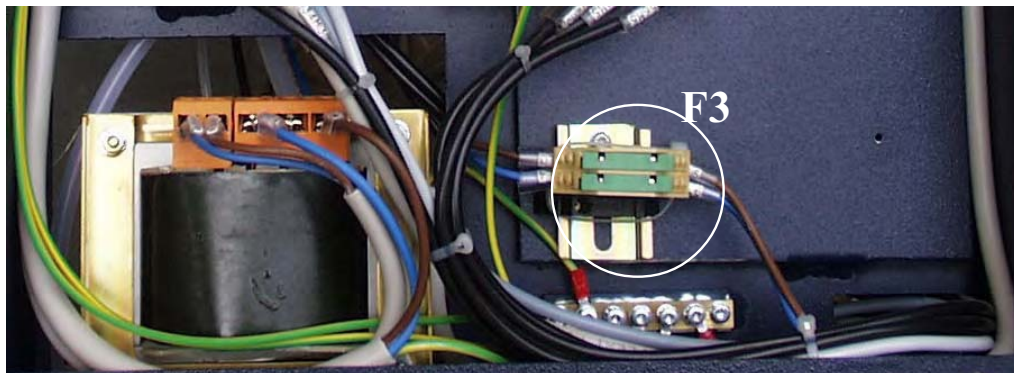
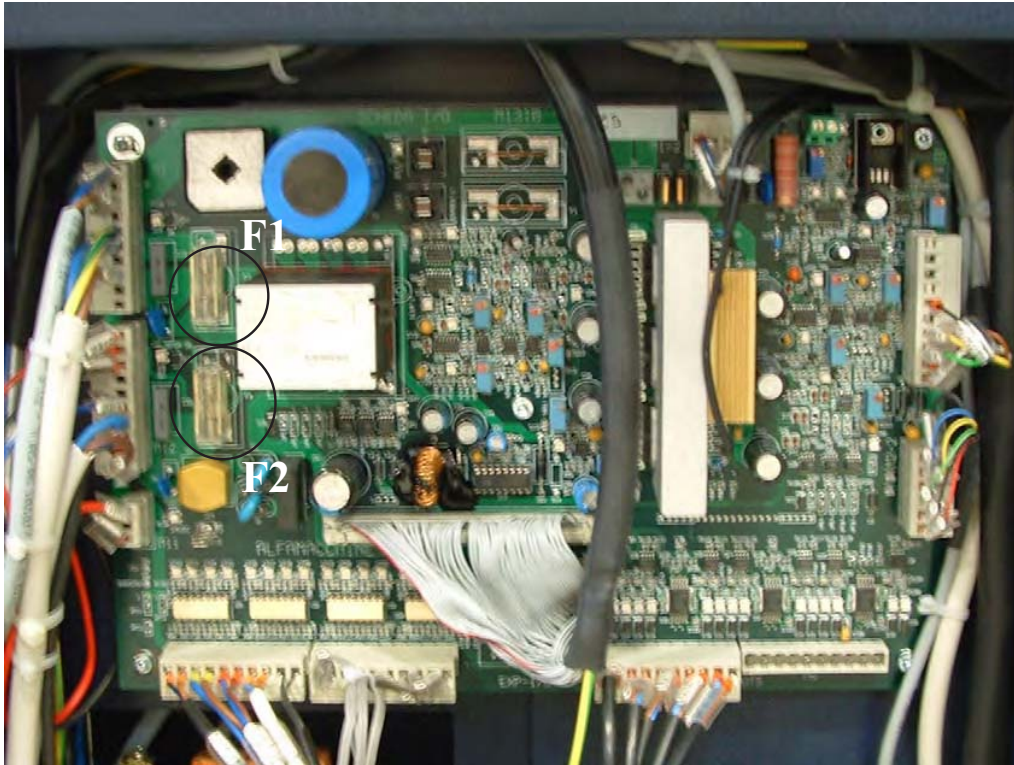
**HPT**      Suitable for hardwoods such as: Oak, Ash, Hickory, Pecan, Maple, Cherry, Ramin, & Horizontal grain MDF.

**HDF**      Suitable for horizontal grain MDF & HDF.



In order to stack 2 or more nails in a single position, use nail codes HPT or HDF

## Attachment E-Electric Drawings

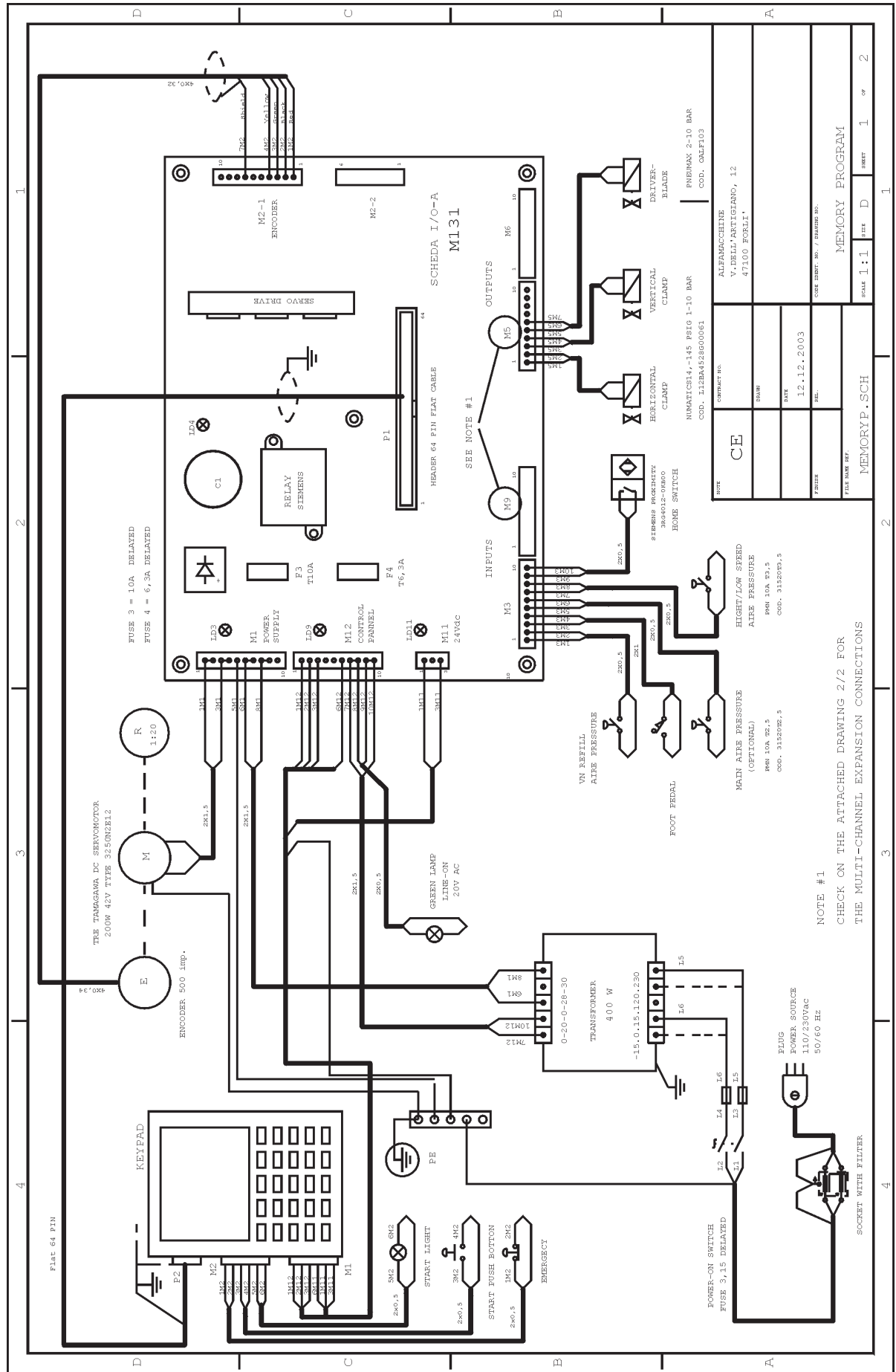


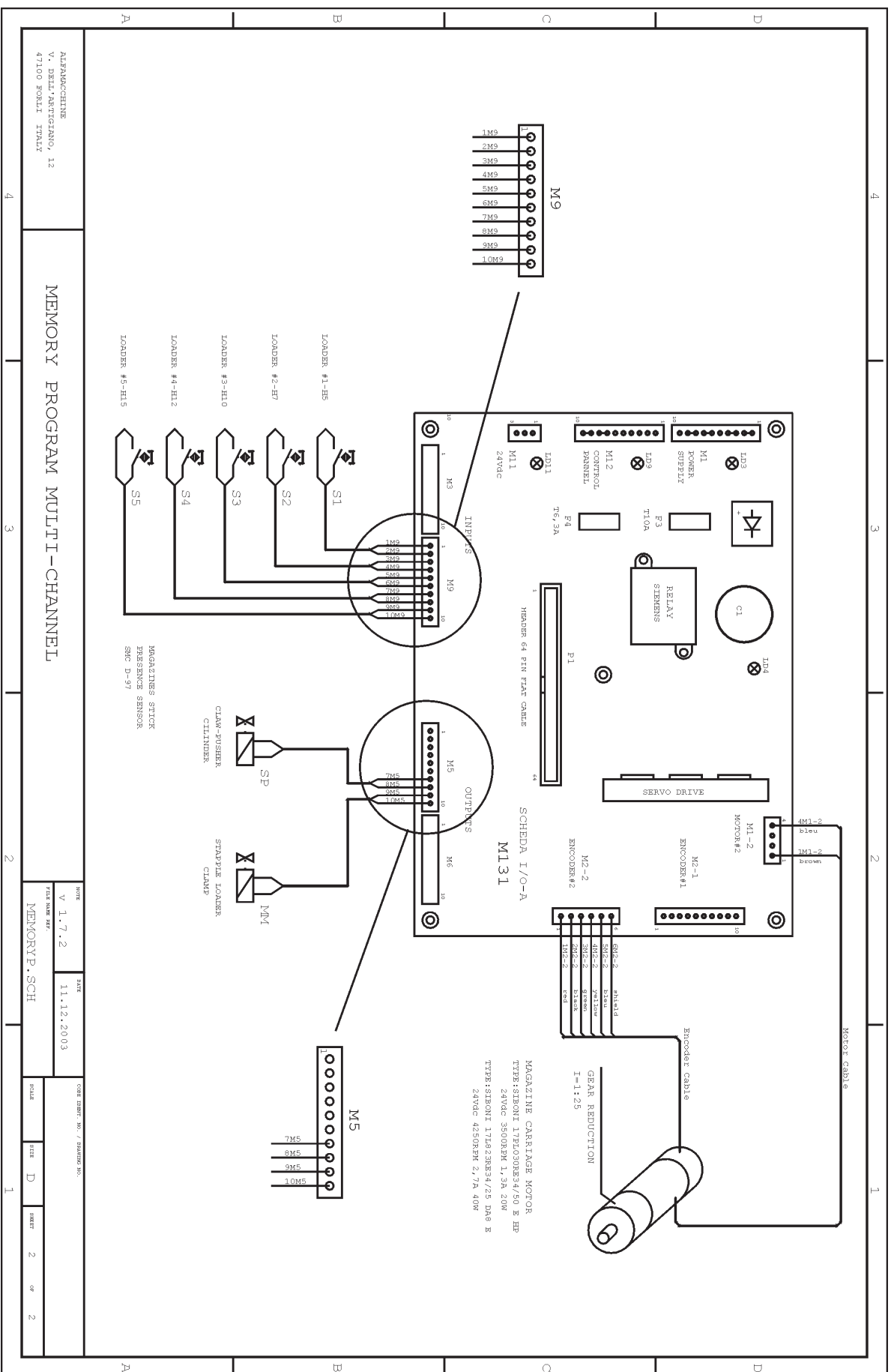
Fuse F1: 10 Amp 250 Volt Delayed/Slow blow (type 5x20)

Fuse F2: 6,3 Amp 250 Volt Delayed/ Slow blow (type 5x20)

Fuse F3: 3,15 Amp 250 Volt Delayed/Slow blow (type 5x20)

# Versione CE





Note 1