



Alfamachine

A Fletcher Company

EN

INSTRUCTIONS MANUAL



U200
Manual Underpinner

Name	FRAME ASSEMBLING MACHINE
Function	ASSEMBLY OF FRAMES BY INSERTION OF METAL V-NAILS
Model / Type	U200 (previous version A2M 200)
Serial number	
Year of manufacture	2011
Manual Revision	01

PLEASE RETAIN FOR FUTURE REFERENCE

EN TRANSLATION OF THE ORIGINAL INSTRUCTIONS

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! DANGER - WARNING
BEFORE USING THE MACHINE PLEASE READ THIS MANUAL CAREFULLY SO THAT YOU BECOME FAMILIAR WITH THE MACHINE, ITS ENVISAGED USE AND ANY RISKS ASSOCIATED WITH IT.

Keep the Use and Maintenance Manual in good condition: Remember, it is an integral part of the machine. Always refer to the manual to get best machine performance in maximum safety while performing the operations described therein.
 This manual must be kept in an easily accessible place, near the machine, at all times so that it can be consulted whenever necessary.

! DANGER - WARNING
USE THE MACHINE SOLELY AND EXCLUSIVELY FOR THE USES INDICATED AND IN ACCORDANCE WITH THE RECOMMENDATIONS PROVIDED IN THIS MANUAL. NEVER TAMPER WITH IT, FORCE IT OR USE IT IN ANY INAPPROPRIATE MANNER.

1. INTRODUCTION TO USE

1.1. HOW TO CONSULT THIS MANUAL AND THE SYMBOLS ADOPTED

Please pay particular attention to the words “DANGER – WARNING”, “DANGER – CAUTION” and “NOTE” as used in this manual. To draw the user’s attention to certain information and provide warning messages, the operations described in this manual are accompanied by symbols and notes to highlight the presence of any hazards and indicate the safe use of the equipment. These symbols and notes belong to various categories, as indicated below:

! DANGER – WARNING: IMPORTANT INFORMATION CONCERNING GENERAL SAFETY.

! DANGER-CAUTION: highlights situations where careful and sensible actions are essential.

🔍 NOTES: information of a technical nature.

1.2. WARNING STICKERS - INDICATIONS (see figure)

Sticker	Description
	Wear protective goggles.
	Wear protective gloves.
	Wear safety footwear
	Wear ear defenders.
	Risk of impact against obstacles: affixed on the corners of the guards.

1.3. TYPE OF USE AND CONTRAINDICATIONS.

GENERAL WARNINGS

The operator must read all the information in this manual carefully, paying special attention to the safety precautions listed in this chapter. It is also essential for the Operator to abide by the following warnings:

- Always keep the machine and work area clean and tidy.
- Arrange suitable containers for storing the workpieces to be processed and those that have already been completed.
- NEVER use the machine when not in good psycho-physiological condition.
- Always wear suitable workwear to avoid any hindrances and/or hazardous entanglement in machine parts.
- Personnel must be authorized and trained beforehand on machine use by Alfamacchine technicians.
- Wear all necessary personal protective equipment: safety footwear, gloves and protective glasses
- The operator must wear personal protective equipment indicated in the Instruction Manual, in accordance with the operations to carry out.
- Never remove or alter the dataplates affixed to the machine by the Manufacturer.
- Keep fingers well away from the operating area.
- Keep feet away from the pedal during machine adjustment operations.

PERMITTED USE

The machine described in this manual has been designed and built to join frame mouldings made from wood, plastic or MDF. This machine is designed exclusively for manual operation.

The machine is designed to be run by 1 operator suitably trained and instructed with regard to residual risks. The operator must have the same skills, in terms of safety, as the maintenance technicians and adequate professional competence.

It is also compulsory:

- for the machine to be used by one operator only who has received adequate training/information concerning machine operations, performance and any hazards associated with its use.
- to ensure no exposed persons are present in the machine's operating area before proceeding with any operations whatsoever.
- to check the perfect condition of all the safety devices before starting to work with the machine.
- to ensure, when the machine is placed on the factory floor where it is to be used, that it is installed on a level, smooth and perfectly horizontal surface. The floor must have an adequate load bearing capacity to support the weight of the machine.
- to check, prior to starting work with the machine, the conditions of ambient lighting and ensure there are no areas of shadow, glare, or potentially hazardous strobe effects.
- to disconnect, prior to starting any work on the machine, the main compressed air supplies, to safely discharge any residual energy in the machine circuits, and wait for all parts at high temperatures to cool down adequately.

UNINTENDED USE



DANGER - WARNING

THE MACHINE MUST NOT BE USED IN A PROHIBITED MANNER. SPECIFICALLY:

- it cannot be operated with parameters different to those shown in the "TECHNICAL CHARACTERISTICS" table or with products and/or materials with different characteristics to those previously described in the heading "TECHNICAL CHARACTERISTICS".
- all uses of the machine other than those described in this manual are construed as improper and as such the manufacturer declines all liability.
- the user is responsible for any damage resulting from failure to observe the operating conditions agreed at the time of technical specification and order confirmation.

FORBIDDEN USE** DANGER - WARNING
FURTHERMORE IT IS PROHIBITED TO USE THE MACHINE IN AN INCORRECT MANNER, IN PARTICULAR:**

- never leave the loaded machine unattended,
- never use flammable, corrosive or toxic substances to clean the machine,
- never allow unauthorized personnel to use the machine,
- never smoke or use open flame equipment or handle incandescent material, unless adequate safety measures have been adopted,
- never activate or adjust the control and locking devices, such as knobs or similar devices, during machine operation or when not authorized to do so,
- never hang objects or weights on the machine,
- never use the machine with the safety guards open, incorrectly fastened, or removed,
- never use the machine with the safety microswitches and interlocking safety devices inhibited and, in general, with any safety and/or protective device (mechanical) deactivated and/or non-functional,
- never partially or totally by-pass, remove, modify or in any way render ineffective the guards, safety microswitches and warning signs,
- use of the machine is forbidden when the user has not adopted all the necessary measures to eliminate the residual risks as indicated in this instruction manual,
- never use the machine for operations other than those explicitly indicated in this instruction manual,
- never use the machine in environments for which it has not been designed unless all necessary safety measures have been adopted beforehand,
- the machine must not be used by untrained personnel
- foodstuffs must not be brought into contact with the machine,
- it is prohibited to activate the control devices for machine movements without first checking and ascertaining the absence of persons in the danger areas subject to machine movements,
- it is prohibited to enter the operating / danger zone of the machine during control of the machine's moving parts,
- it is prohibited to enter the machine working area with any part of the body, hands and arms included, before hazardous moving elements have come to a complete standstill.
- it is prohibited for the machine operator and maintenance technician to enter the danger zones to perform cleaning, lubrication, maintenance operations etc. without having first set the power cut-off switches to "ZERO" and padlocked them in this position,
- the machine must not be used in critical conditions of stability, i.e.:
 - when placed on a support surface which is not perfectly horizontal and smooth, or does not have an inadequate load capacity as indicated in this manual,
 - outdoors or worksites with open windows and doors,
- the following are strictly prohibited:
 - processing of materials and products that are not expressly indicated in the present manual,
 - processing of metal materials made of aluminium, lightweight alloys, and steel and its alloys.

** DANGER – CAUTION
*The manufacturer cannot be held liable for any faults caused by unreasonable, improper and/or incorrect use of the machine.***

The user is anyway responsible for all damage deriving from failure to comply with the specified terms of use. For any further information always consult the manufacturer's engineering department.

The user is always responsible for providing suitable personal protective equipment to machine operators and for informing them on the permissible uses of the machine

PERSONNEL AUTHORIZED TO USE THE MACHINE

This machine has been designed and manufactured to be used by qualified personnel with adequate training, experience and skills in accordance with the characteristics described below:

Operators / Apprentices:

- may be male or female
- must be aged 14 or over
- must have full use of both hands
- must have no physical or mental disabilities
- must know and fully understand the contents of the user manual.

PERMITTED AMBIENT CONDITIONS AND OPERATING LIMITS



DANGER - WARNING

THIS MACHINE IS NOT SUITABLE FOR USE IN POTENTIALLY EXPLOSIVE ENVIRONMENTS. THEREFORE IT IS PROHIBITED TO INSTALL OR USE IT IN ANY SUCH ENVIRONMENT.

SERVICE CONDITIONS

SERVICE CONDITION	USER LIMITS
Installation type	Indoor
Floor conditions	Horizontal and smooth: irregularity and gradient tolerance within 2%
Supporting surface characteristics	Flooring in compliance with health and safety requirements in the workplace in accordance with all applicable legislation
Maximum ambient air temperature	+40°C / 104 °F
Minimum ambient air temperature	5°C/ 104 °F (if the electrical equipment as a protection rating of at least IP54) 0°C/32°F (if the electrical equipment has a protection rating lower than IP54)
Ambient working temperature	+5 °C < T < +45 °C / 113 °F
Transport and storage temperature	between -25°C / -13 °F and +55°C / 131°F (temperatures of up to +70°C/158 °F are admissible for periods of less than 24 h)
Maximum altitude above sea level	1000m
Minimum required light intensity	600 lux

SERVICE CONDITIONUSER LIMITS

Special and additional prescriptions, not envisaged, may be requested for machines intended for:

- outdoor use;
- handling potentially explosive materials;
- use in potentially explosive and/or flammable atmospheres;
- use involving specific risks in the processing of specific materials;
- use in mines;
- use in refrigeration plants;
- use at high temperatures;
- use in corrosive environments;
- use in strong magnetic fields;
- use in radioactive conditions;
- use for loads the nature of which could lead to hazardous situations (for example, molten metal, acids/bases, particularly fragile loads, explosives),
- use on ships and areas affected by earthquakes;
- food-contact use;
- use in public areas;
- use in aircraft ground support.

1.4. TECHNICAL FEATURES

Machine characteristics

Work surface dimensions (W x L).....	30x440mm - 13"x18"
Machine length.....	750mm - 30"
Machine width.....	450mm - 18"
Minimum height of working bench from the floor.....	980mm - 39"
Maximum machine height.....	1280mm - 51"
Machine weight.....	38kg - 83lbs
V-nail magazine capacity.....	220pcs
Max. quantity of V-nails inserted per position.....	9pcs
V-Nail insertion positions.....	Multiple
Max. distance between nails.....	180mm
Minimum/maximum width of moulding.....	6 / 130 mm - 1/4" – 5"1/8
Minimum/maximum height of moulding.....	6 / 80 mm - 1/4" – 3"1/4

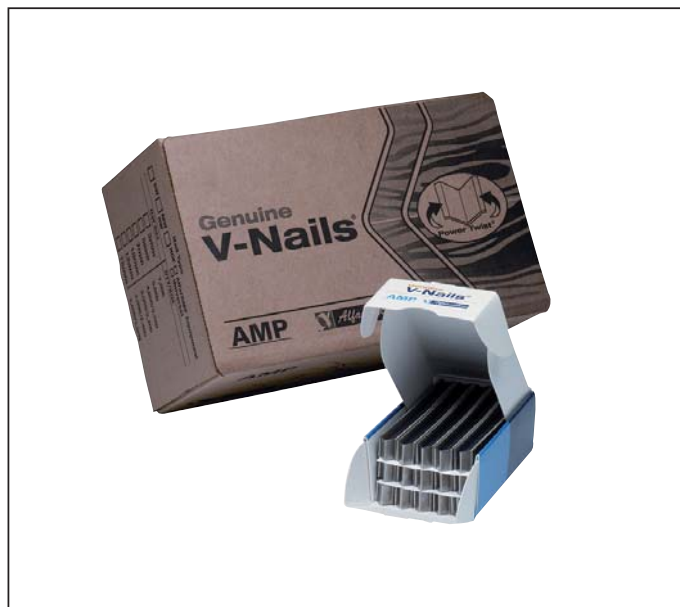
V-nail characteristics

Height.....	7-10-15 mm
Height of optional heads.....	3-5-12 mm

V-nail characteristics

V-nail type	Height mm
H3	3mm (optional)
H5	5mm
H7	7mm
H10	10mm
H12	12mm
H15	15mm

Material	Recommended sharpness
Soft woods and plastic	SW transparent stick
Medium wood	MW brown stick
Hard wood	HW green stick
Very Hard Wood and MDF	HS red stick




1.5. PRODUCTS PROCESSED - HANDLED OR GENERATED

The products handled by the machine described herein must be made up of wooden mouldings of various hardness, with multiple surface finishes, for the purpose of making frames for pictures, mirrors, display cases, cupboard doors etc..

The main technical characteristics of the products handled by the machine described herein are provided below.

DESCRIPTION OF PRODUCTS HANDLED	CHARACTERISTICS
Minimum/maximum profile height	6 - 90 mm
Minimum/maximum profile width	6 - 130 mm

1.6. EMISSION OF AIRBORNE NOISE

 *NOTE – The manufacturer declares, under his own responsibility, that the machine produces a continuous equivalent A-weighted sound pressure level of 70 dB.*

 **DANGER – WARNING:**
TO AVOID THE DANGER OF HEARING DAMAGE CAUSED BY SHRILL OR INSISTENT NOISE, THE MACHINE OPERATOR AND MAINTENANCE TECHNICIAN MUST ALWAYS USE APPROPRIATE HEARING PROTECTION, SUCH AS HEARING DEFENDERS OR EARPLUGS.

1.7. RESIDUAL RISKS - GENERAL INFORMATION

This manual contains a list and description of the residual risks that could not be eliminated in the design stage and that therefore remain present on the machine.

For each risk, suitable instructions or prescriptions are given which the user must observe in order to avoid hazards affecting the machine operator, maintenance technicians, any exposed persons and the machine itself.

1.8. RESIDUAL RISKS

For each risk, suitable instructions or prescriptions are given which the user must observe in order to avoid hazards affecting the machine operator, maintenance technicians, any exposed persons and the machine itself.

Residual risk of finger crushing

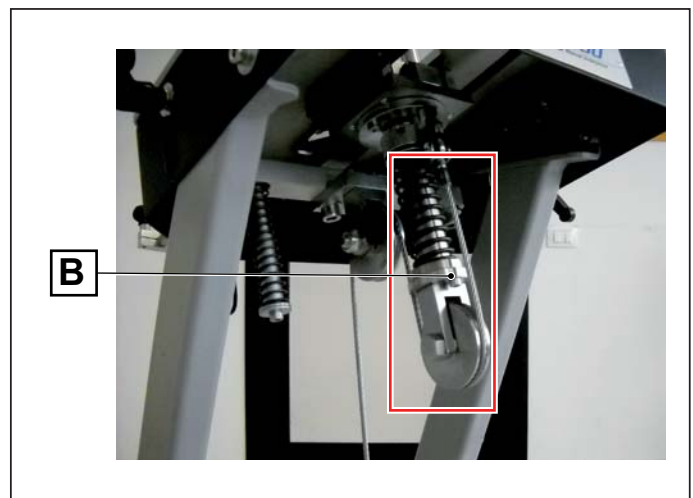
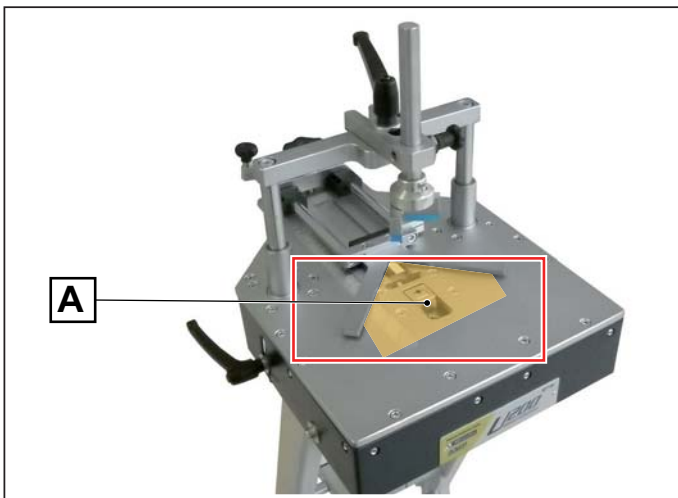
During the normal operating cycle and during maintenance, Operators are exposed to certain residual risks which, due to the nature of the operations could not be completely eliminated.

- Finger crushing hazard in the operating area of the vertical clamp (A).
- Finger crushing and injury hazard in the pulley movement area (B).

Furthermore, it is to be pointed out that said finger crushing risks are present near each mobile element installed over the machine's working bench.

Consequently the operator and maintenance technician, as well as observing the instructions provided in this manual, must never place their fingers or any other part of the body in the zone indicated.

What's more, workers must never wear rings, wrist watches, jewellery, torn clothing, scarves, ties or any other loose clothing or personal accessories that may constitute a risk. Make sure sleeves fit snugly around wrists and keep long hair tied back.



Residual risk due to the combustibility of the substances used in the machine and the products handled by the same

To avoid the hazards resulting from:

- the ignition of substances used in the machine,
- residual risks associated with possible outbreaks of fire,

the employer, in addition to training and adequately informing the machine operator and maintenance technician on such risks, must provide permanent fire protection systems in the vicinity of the machine control station. Said systems must be suitable for the types of material which could catch fire.

PPE to be used:



Protective gloves



Safety footwear



Safety clothing

Residual risk due to noise

As demonstrated by experimental tests, the machine produces a continuous equivalent A-weighted sound pressure level of 70 dB.

To avoid the risk of hearing damage caused by shrill or insistent noise during machine use, in addition to being adequately informed and trained, the operator and maintenance technician must always use appropriate hearing protection, such as hearing defenders, earplugs or similar personal protection equipment to safeguard hearing.

PPE to be used:



Hearing protection

1.9. DESCRIPTION OF SAFETY FUNCTIONS

This paragraph is not applicable to the instruction manual for this type of machine.

1.10. DESCRIPTION OF THE MACHINE

The U200 frame assembling machine has been designed to assemble every kind of frame.

The U200, with its simple and easy-to-use construction, can execute precise joins of any type of moulding using special steel V-nails. It can operate with normal V-nails, reinforced V-nails for very hard wood and special ALFAGRAF V-nails with "pulling power" of various heights.

1.11. MAIN MACHINE COMPONENTS

The equipment listed below refers to standard machines.

Consequently, any special supplies may have some different components to those listed.

After removing the machine from the packaging, make sure the following accessories are present:

- 1 head for 7-mm V-nails
- 1 head for 10-mm V-nails
- 1 head for 12-mm V-nails
- 1 interchangeable stopper - soft (light blue);
- 1 Interchangeable stopper - medium (yellow);
- 1 Interchangeable stopper - hard (black);
- 1 Round magnetic felt stopper;
- 1 5-mm wrench for changing heads
- 1 6-mm wrench for machine assembly
- 1 rod with magnets (pencil magnet) for V-nail removal
- 1 fixed 90° fence
- 4 support feet
- Single clamp
- Instruction Manual

The main components which make up the machine are:

UPPER WORK BENCH (A)

The working bench which supports the mouldings when the V-nails are inserted is installed on the stand.

on this act: the fence unit for positioning the mouldings and creating the corner to be assembled:

- the vertical moulding clamp unit
- the V-nails insertion unit

STAND (B)

Support on which the working bench is attached, at the base of which there is the pedal mechanism which operates the machine.

PEDAL (C)

Mechanical device activated by the operator to block the mouldings and insert the V-nails.

V-NAILS INSERTION UNIT (D)

Device for inserting the V-nails activated by the operator by pressing on the pedal. It is fitted with interchangeable firing heads and V-nail magazines.

V-NAIL MAGAZINE (E)

Manually opened channel in which the stick of V-nails is inserted.

VERTICAL CLAMP (F)

Mechanical device for blocking the mouldings. It is activated by the operator pressing down on the pedal.

FENCE UNIT (G)

Corner stoppers against which the mouldings are pushed, a guide system allows them to be moved on the surface for precise positioning of the V-nail insertion point.



Vertical stopper unit

- AXE Z -
Vertical stopper movement

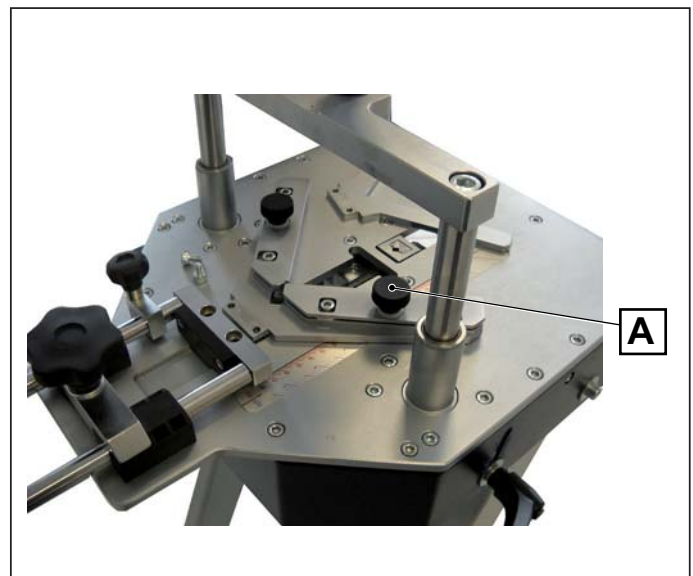


Optional accessories

- Working bench extension (side extensions)
- Adjustable tilting fence with two knobs (A)
- Heads for H 3 - 5 - 15 mm V-nails
- Pedal extension

Thanks to the great versatility of the machine, it is possible to create “made to measure” any accessory to facilitate frame assembly for the user based on individual requirements: for example, special fences for particular shapes of mouldings, special clamping stoppers for improving the hold on mouldings during the V-nailing stage and much more besides

By sending a sample of what you wish to assemble directly to Alfamacchine, it is possible, after adequate study, to perfect and make customized accessories to solve any specific problem in the best possible way.



2. INSTALLATION

2.1. STORAGE

The machine, intended for indoor installation must be stored, if necessary, in well ventilated storage facilities and protected from dust. The delivered elements must remain in their original packing until the time of final installation. All parts of the machine subject to the risk of oxidation are protected with grease and protective sprays at the time of dispatch to prevent oxidation caused by weather conditions.

In the case of prolonged inactivity the machine must be stored with all necessary precautions taken based on the location and expected storage times:

1. Store the machine in an enclosed place.
2. Protect the machine from impact and stress.
3. Protect the machine from humidity and excessive temperature differences (refer to the table below).
4. Do not allow corrosive substances to come into contact with the machine.
5. Check that the pack has not been damaged and that it is perfectly dry.
6. Specifically, if the machine is inside a shipping container, the storage area must be covered and protected against direct weather including rain, snow and hail, and it must be accessible exclusively to authorized personnel.


The machine is protected in such a way as to withstand the temperatures, humidity and vibration levels typically associated with transport and storage.

Ambient temperature	-25 / +40 °C	Avoid places where there may be unexpected changes in temperature which could lead to the formation of condensate or freezing.
Storing temperature	-25 / +55 °C 0 / +55 °C	
Relative humidity	100% at a temperature of +25°C Lower than 50% at a temperature of +40°C Lower than 90% at a temperature of +20°C	
Vibrations	5.9 m/s ² (0.6G) or higher	
Atmospheric pressure	900 mbar or more	

Storage temperature is construed as a short-term value, e.g. during transportation. Condensation or freezing normally occurs in sites subject to significant temperature excursions. Even if relative humidity in such conditions falls within the values shown in the table, locations subject to significant temperature changes should be avoided.

2.2. CHECKS ON RECEPTION

NOTES

 It is essential to check the packs at the time of arrival and in the precise moment in which they are received. The check is performed in two stages for each pack received to avoid misunderstandings with the shipping agent.

Administrative check


1. Crate number and number of packs.
2. Weight and size
3. Correspondence of information on shipping document with the material effectively delivered (description, serial number, etc). The technical data given on the machine identification plate must correspond with the data given in the technical data supplied).
4. Check correspondence between shipping document data and the order.

Technical check

1. Condition and intactness of packaging.
2. Check that the packaging shows no signs of visible damage caused during transport and handling operations.

All the above checks must be performed by inspection in the presence of the shipping agent's delivery person. If any damage is noted or the supply is incomplete or incorrect, inform the manufacturer's sales department immediately.

NOTES

 In relation to the above prescriptions, the manufacturer informs the user that in compliance with current international and national rulings, goods are always shipped at the risk and responsibility of the purchaser and, unless otherwise stated in writing at the time of the order confirmation, freight travels without insurance cover.

2.3. TRANSPORT, LIFTING AND HANDLING

Dimensions, weight and handling of individual machine parts

BOX DIMENSIONS

Machine height..... 440 mm - 21/64in
 Machine depth 500 mm - 11/16in
 Machine width 660 mm - 63/64in
 Weight of the machine (including the packaging)approx. 38 kg - 88lbs

! DANGER – CAUTION

- The machine must be transported to a position as close to the intended installation site as possible. Said site must be checked beforehand to obtain information about the necessary clearances and dimensions, including the essential space required for installation procedures.
- It is strictly prohibited to lift loads over people. If persons are present in the area, lower the load and ensure everyone moves out of the way.

2.4. LIFTING AND HANDLING

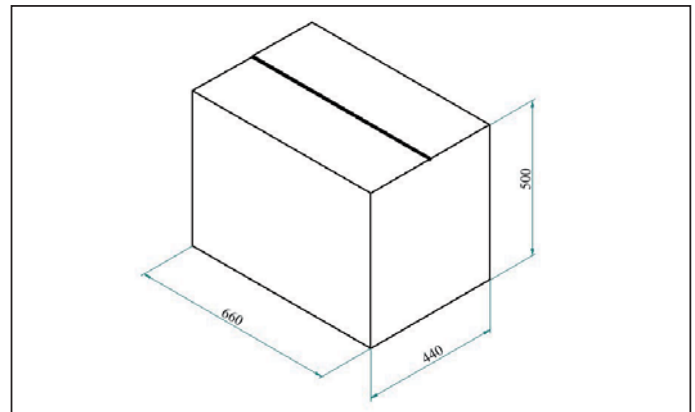
The U200 is divided up and delivered as an assembly kit. The box dimensions are: (660x440x500)mm. (see figure) Transport must be carried out by professionally qualified personnel. The machine must be transported in such a way as to avoid any damage to its components:

- The machine must be transported in its installation position.
- Before transporting the machine, grease all non-painted parts to avoid the risk of deterioration..
- Based on the type of transport, take care to protect the machine from all possible impact and stress.

NOTE – The machine must be lifted by TWO operators.

NOTE –It is advisable to keep the packaging in case it is needed to store or transport the machine at a later date.

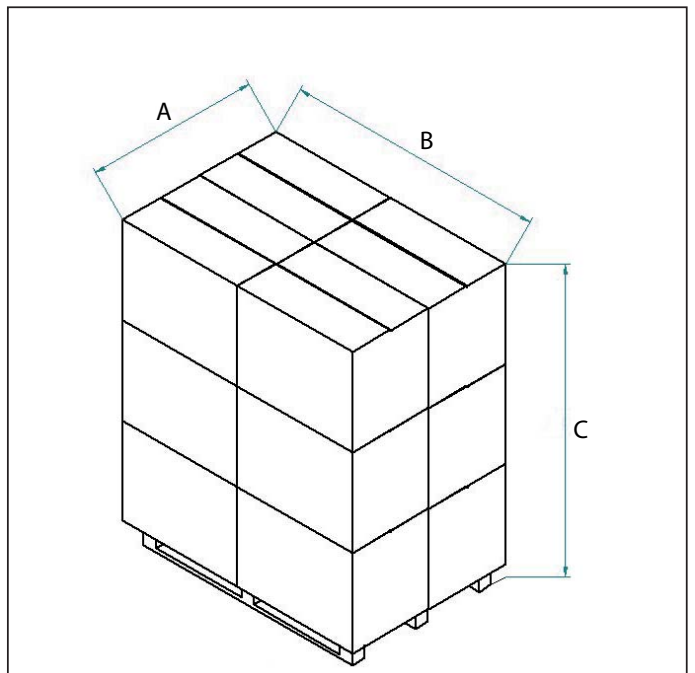
The machine is moved on a two-wheel trolley.



MULTIPLE TRANSPORT AND HANDLING

The transport of more than one machine can be carried out using a Europallet which can carry up to a maximum of 12 boxes (12 machines).

Overall dimensions = (80x120x180mm - AxBxC).



2.5. REMOVING THE PACKAGING

Description of the packaging

The machine may be shipped in a container or on a lorry.

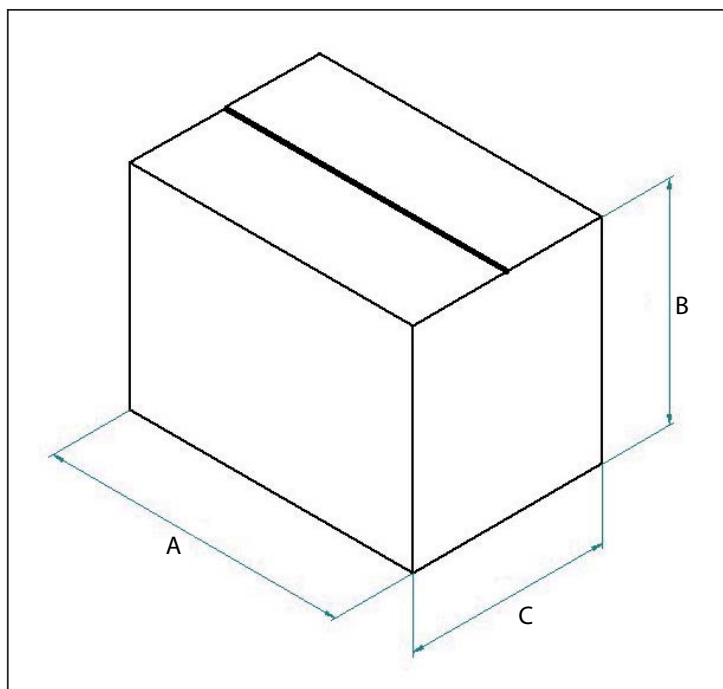
In both cases the same type of packing is envisaged which is suitable for guaranteeing the good condition and proper preservation of the machine during transport up to the time of delivery to the customer.

The machine is shipped packed in a special box and protected against damage by polystyrene inserts.
Maximum dimensions 660x440x500 (AxBxC).



NOTE –It is advisable to keep the packaging in case it is needed to store or transport the machine at a later date.

When storing the machine, never stack two machines packed on a pallet with shrink wrap.



The various packing materials must be disposed of in compliance with the relative legislation in force. Seek advice from the delegated authorities and/or the assistance of specialist companies authorised to dispose of pollutant or recyclable waste products.



DANGER – CAUTION

Warning – pollution hazard: do not dispose of the packing material in the environment; retain it for future transport uses or consign it to a recycling company.

Evaluation and management of the packing materials in terms of biological compatibility are the duty and responsibility of the user.

3. PRELIMINARY PREPARATION AND ADJUSTMENT PROCEDURES

3.1. POSITIONING

Suitability of the floor – supporting surface

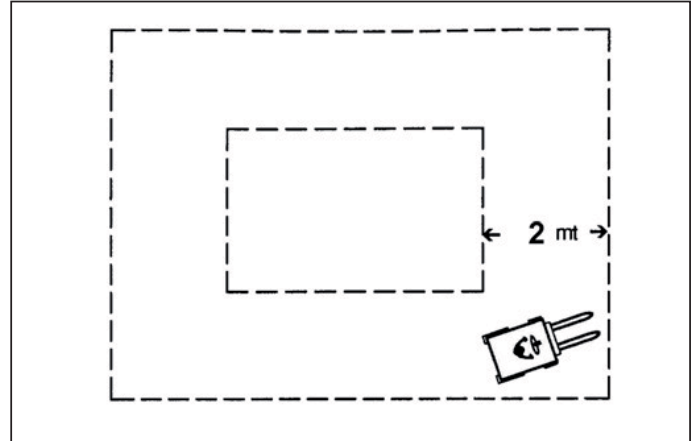
The machine must be positioned on a solid, reinforced concrete foundation.

The floor must have an adequate load bearing capacity to support the weight of the machine. The floor must be designed and prepared by the user.

Preparation on site

The machine layout is provided as an attachment to this manual. It is complete with the necessary data for positioning on the factory floor. THE PLACE IN WHICH THE MACHINE IS USED must be clean and free of obstacles (see figure).

TO ALLOW FOR EASY REMOVAL OF THE MACHINE FOR MAINTENANCE it must be positioned in a place having the surface dimensions indicated in the figure.

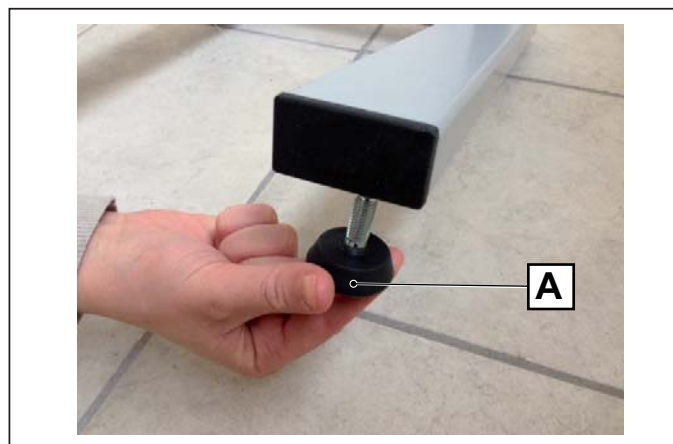


3.2. LEVELLING THE MACHINE

Stability of the machine is designed in such a way that, in the specified conditions of operation, it can be used without risks of overturning, falling, or uncontrolled displacement.

In order to avoid mechanical stress during normal use of the machine and undue strain to the structure, the machine must be stabilised during lifting operations.

The standard machine is supplied ready assembled on the stand which is secured to a pallet. Manually tighten the four feet (A)



3.3. PARTS ASSEMBLY

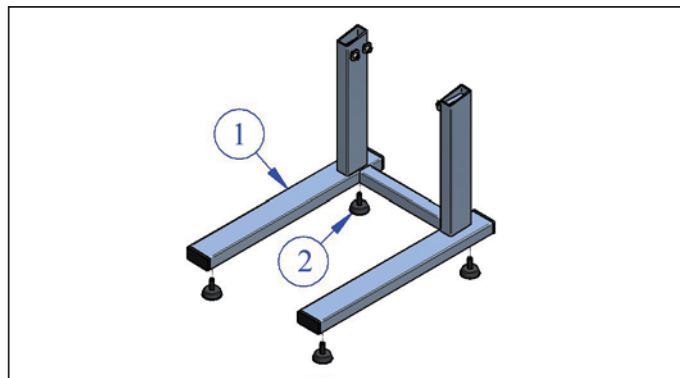


DANGER – CAUTION

All assembly activities concerning machine units supplied separately, include highly delicate operations which call for significant experience. Consequently they must be carried out exclusively by personnel appointed directly by the manufacturer or authorised by the same and, in any case, under the manufacturer's responsibility. These activities are therefore the sole responsibility of the machine manufacture's personnel.

List of spare parts - Assembly kit

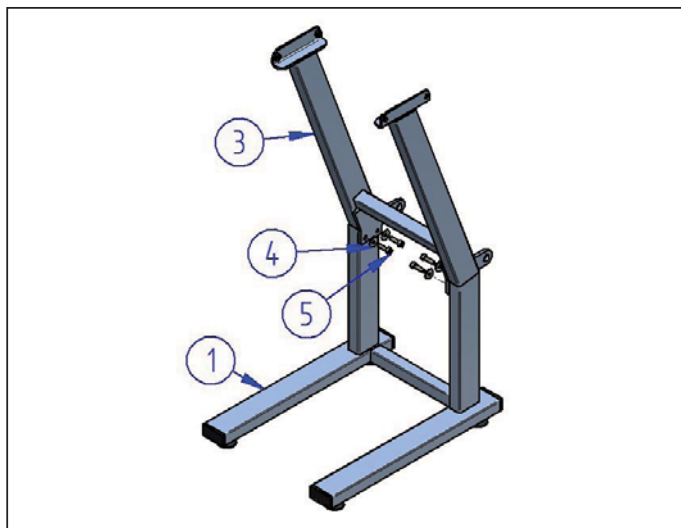
- (1) Lower stand;
- (2) 4 rubber feet;
- (3) Upper stand;
- (4) 4 washers;
- (5) 4 screws;
- (6) Pedal;
- (7) 2 washers;
- (8) 2 screws;
- (9) Fork;
- (10) Clip;
- (11) Machine;
- (12) 2 washers;
- (13) 2 screws;
- (14) 2 washers;
- (15) 2 handles;
- (16) Vertical blocking;
- (17) Washer;
- (18) Handle;
- (19) Cable;
- (20) Knob;
- (21) Extension;
- (22) Washer;
- (23) Nut;
- (24) Left extension
- (25) Right extension
- (26) 8 washers;
- (27) 8 screws.



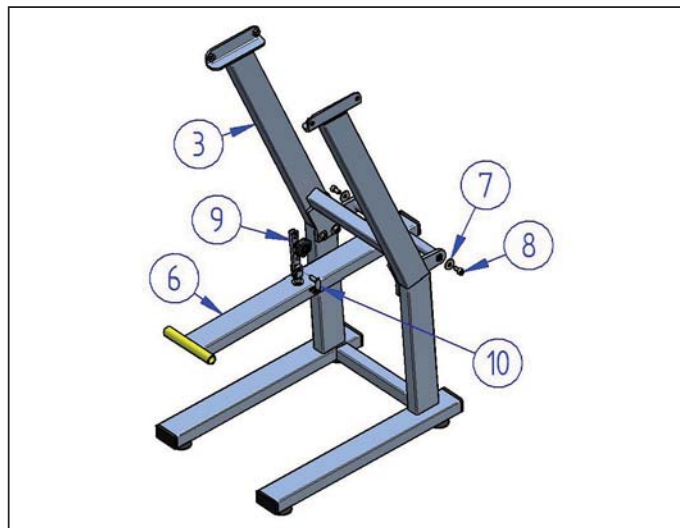
- 1 - Screw in the 4 rubber support feet (2) into the relative threaded holes on the bottom stand (1) ;
- 2 - Insert the upper stand (3) in the bottom stand (1) ;



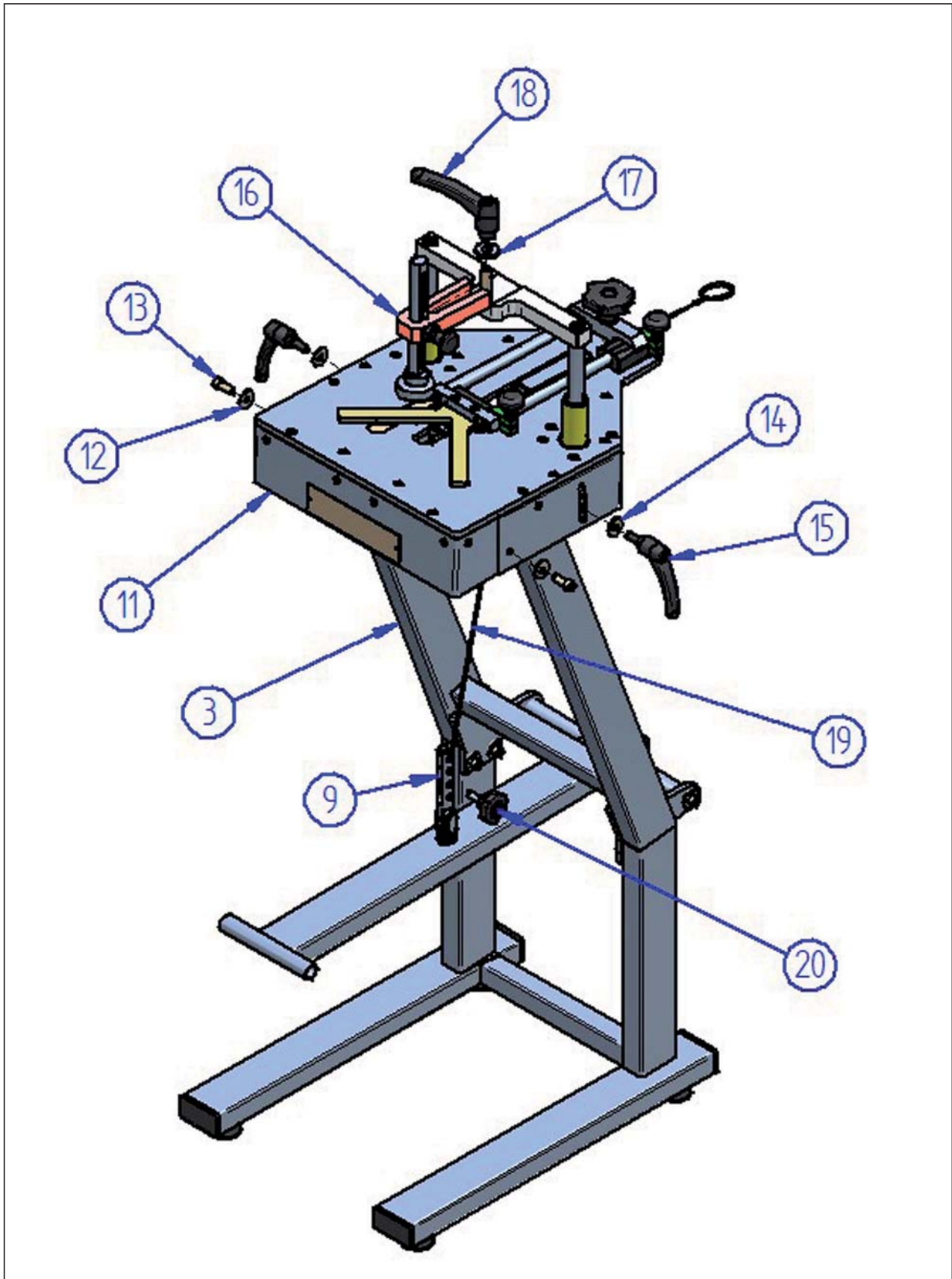
NOTE –It is advisable to keep the packaging in case it is needed to store or transport the machine at a later date.



- 3 - Secure the two parts together using the relative screws (5) and washers (4) ;

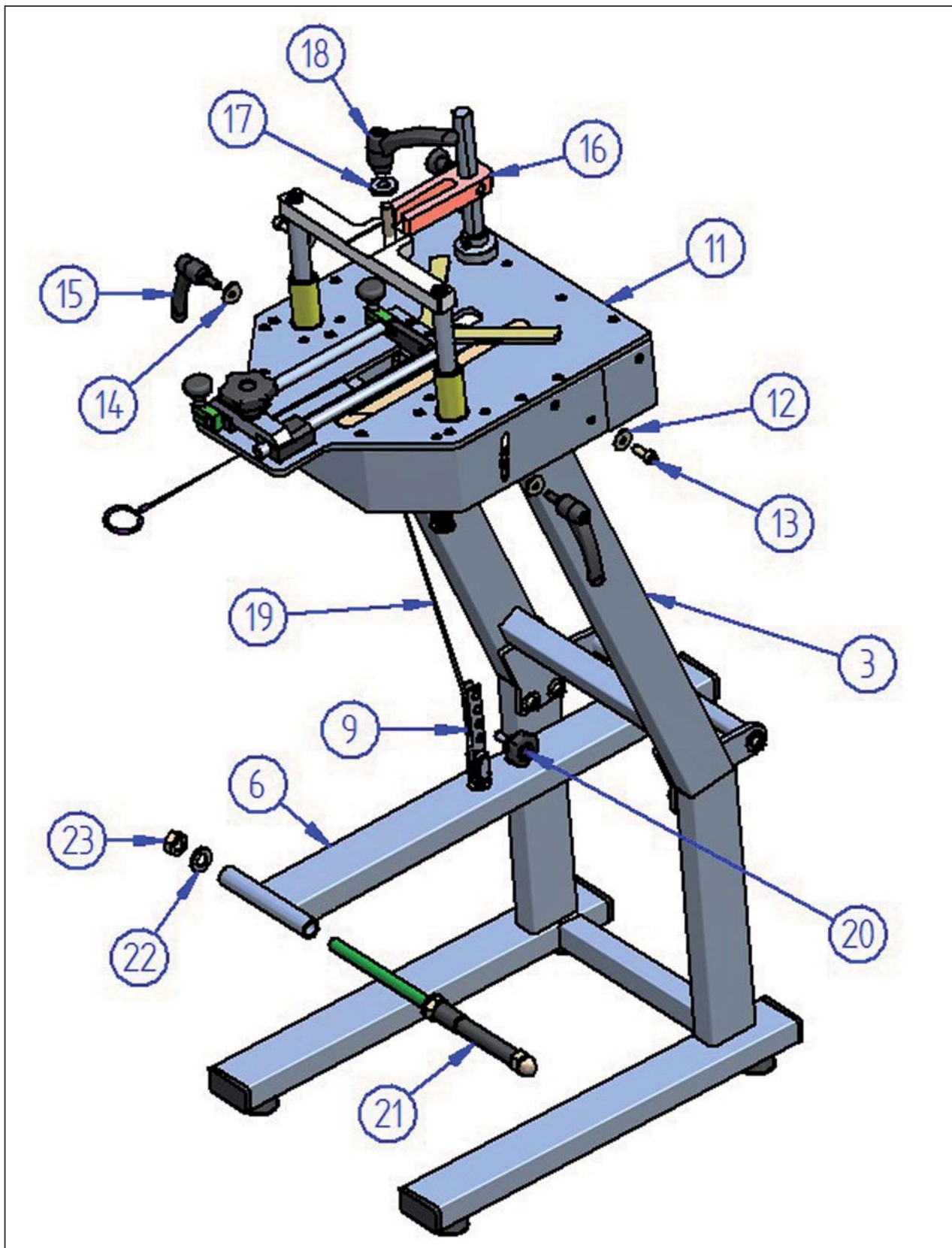


- 4 - Align the pedal pivot (6) between the two drilled ends of the upper stand (3) and secure in place using the relative screws (8) and washers (7) ;
- 5 - Hook the fork (9) in the pedal (6) and secure in place with the clips (10) ;



Front work position:

- 6 - Position the machine (11) by placing it on the legs of the upper stand (3);
- 7 - Position the machine with the dataplate facing the operator, align the holes on the side of the machine with those on the upper stand and secure in place with screw (13) and washer (12);
- 8 - Align the slots on the side of the machine with the holes on the upper stand and secure in place with handle (15) and washer (14);
- 9 - Install the vertical clamp (16) and secure in place with the handle (18) and washer (17);
- 10 - Hook the cable (19) onto the fork (9) using the knob (20);



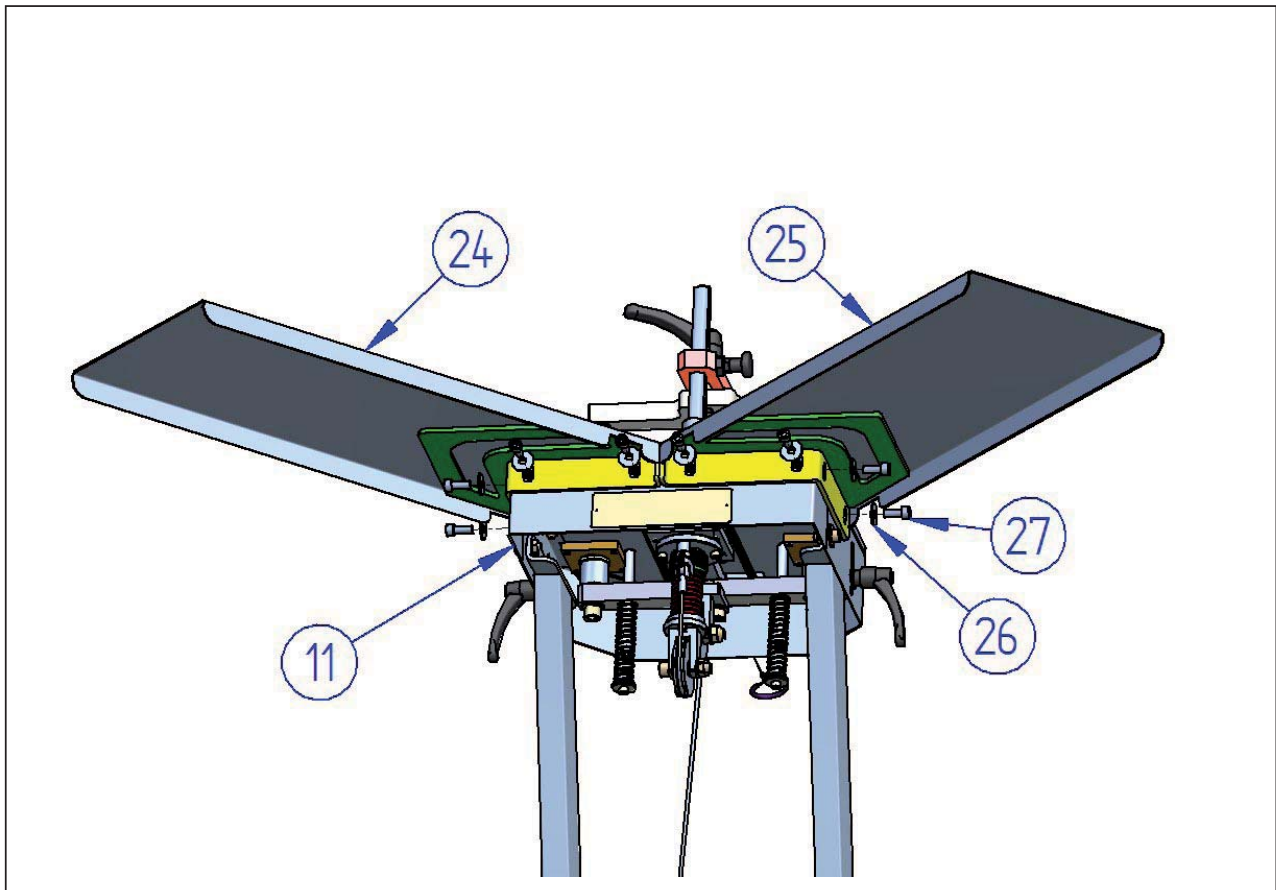
Rear work position:

- 6 - Position the machine (11) by placing it on the legs of the upper stand (3);
- 7 - Position the machine with the fence adjustment unit facing the operator, align the holes on the side of the machine with those on the upper stand and secure in place with screw (13) and washer (12);
- 8 - Align the slots on the side of the machine with the holes on the upper stand and secure in place with handle (15) and washer (14);
- 9 - Install the vertical clamp (16) and secure in place with the handle (18) and washer (17);
- 10 - Hook the cable (19) onto the fork (9) using the knob (20);
- 11 - Insert the pedal extension (21) in the relative seat on the pedal (6) and secure in place with the nut (23) and washer (22);

NOTES



The pedal extension can be inserted on the left or right as preferred.



Extension installation (OPTIONALS):

12 - Remove the M8x8 grub screws from the extension fixing holes on the sides of the machine;

13 - Align the left extension (24) to match up with the holes on the left side of the machine (11) and keeping it aligned with the working bench, tighten the screws (27) and washers (28) ;

14 - Align the right extension (25) to match up with the holes on the right side of the machine (11) and keeping it aligned with the work surface, tighten the screws (27) and washers (28) ;



4. INITIAL START-UP AND USE OF THE MACHINE

**DANGER - WARNING**

THE MACHINE MUST ONLY BE OPERATED BY AUTHORISED AND DULY TRAINED PERSONNEL WITH ADEQUATE TECHNICAL EXPERIENCE.

MACHINE OPERATORS MUST BE AWARE OF THE FACT THAT KNOWLEDGE AND IMPLEMENTATION OF THE SAFETY RULES ARE AN INTEGRAL PART OF THEIR WORK.

UNQUALIFIED PERSONNEL MUST NOT BE ALLOWED ACCESS TO THE MACHINE'S OPERATING AREA WHILE IT IS IN USE.

Before switching on the machine, operators should:

- carefully read all the technical documentation
- know which protective equipment and emergency devices are available on the machine, where they are located, and how they work

The partial removal of safety guards and warning signs is forbidden.

Unauthorised use of commercial parts and accessories belonging to safety guards and safety devices can result in malfunctions and the occurrence of hazardous situations for operators.

Before starting the production cycle, the operator must be thoroughly familiar with:

- The position, function and use of all controls.
- The position, function and use of all safety devices.
- The machine's characteristics.
- This manual, and know how to consult it.

The operator must also have been appropriately trained.

4.1. WORKSTATIONS AND OPERATORS' TASKS

The machine described herein is designed to be run by 1 operator suitably trained and instructed with regard to residual risks. The operator must have the same skills, in terms of safety, as the maintenance technicians and adequate professional competence.

The normal work area of the operator and relevant tasks/assignments are:

- The manual introduction/removal of mouldings onto the working bench, with the fixed safety guards closed and locked.
- The manual loading of V-nails in the magazine, with the fixed safety guards closed and locked.
- The adjustments and tooling of the key units (head, frontal clamp, alignment fences, etc.) needed to operate the machine, using the relevant tools, with the fixed guards closed and locked.
- The manual removal of V-nails clogged in the magazine and/or nailing claw head, with the fixed safety guards closed and locked.
- Check operations (for example reading the data on the console panel and machine instrumentation). These are very simple tasks which can be carried out in total safety and clearly described in the Instruction Manual.
- General monitoring of machine operation - for example checking the cleanliness of the machine, etc. In the event of a problem, the operator must not intervene, but simply call the Maintenance Service.
- Cleaning external and internal machine parts, and any other parts that may require cleaning (e.g. the upper/surrounding part of counter-rotating rollers) via the fixed safety guards, while these are closed and locked. Any cleaning of internal machine parts which requires the removal of the fixed guards must be performed by a qualified maintenance technician.

The operator is responsible for the operating process, and must control the machine by means of the command actuators located on the control panels.

Apart from normal machine operation, the operator must also start and stop the machine in normal conditions, and stop it in emergency conditions.

The operator must also carry out checks and general monitoring operations while the machine is running. In the event of a problem he/she must not intervene, but simply call the Maintenance Service.

All operations performed by the operator must be carried out with all protection devices activated, all guards in place, and all safety devices engaged in order to prevent the risk of injury to arms, legs and other body parts.

All handling operations, preparation, adjustments, installation and connection of power supplies, along with fine-tuning and operating checks, must be carried out by trained, skilled maintenance personnel.

All maintenance and control operations must be carried out by trained and skilled maintenance personnel.

All installation and hook-up operations must be carried out using suitable equipment and tools of an appropriate size (e.g. a flathead or Phillips screwdriver, hex wrenches, Allen keys, etc.), depending on the type of fasteners.

Before carrying out any installation or hook-up operation, the machine, the on-board components must be thoroughly cleaned.

DANGER – CAUTION

Unless otherwise specified in the contract and clearly indicated in the technical specifications of this Manual, the machine is not suitable for use in environments different to those permitted and duly specified in this Manual.

The main hazardous work areas of the machine, that may produce risks for the operator, are: • The area on which the frames are placed is known as the “operating area”.

- The machine’s danger zones are those areas containing moving parts and their immediate vicinity.

4.2. CHECKS, ADJUSTMENTS AND START-UP

All functions/operations pertaining to operating modes must always comply with safety measures and the prescriptions for the protection against residual risks.

During normal production, the machine must only be used to process the products specified herein.

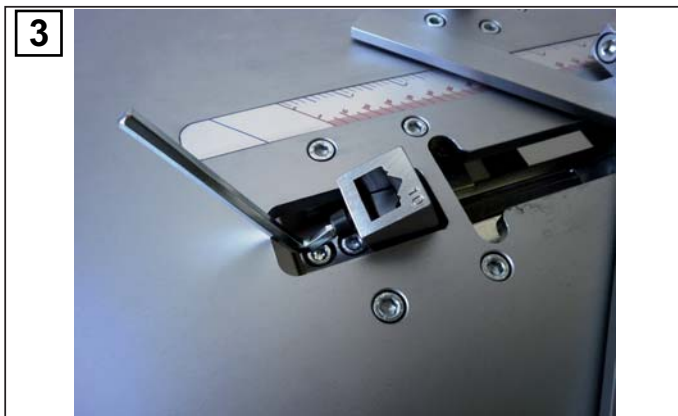
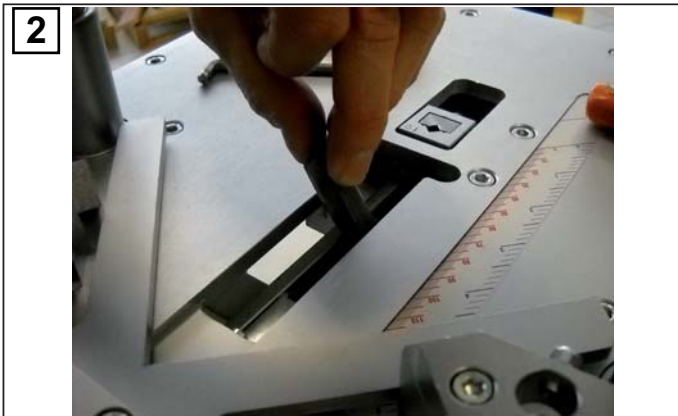
During the working cycle, it is essential to comply with safety measures and prescriptions for the protection against residual risks.

4.3. START-UP

Inserting V-nails in the loader

To load the V-nail magazine, proceed as follows:

- Draw the V-nail pusher back using the relative control cable located on the rear side of the machine's working bench (1).
- Insert the V-nail stick, making sure that the sharp end of the V-nails is pointing upwards (silicone side) and that it is positioned as indicated in the figure (2).
- Also check that the height of the V-nails is compatible with the firing head installed (5).
- Release the control cable and let the V-nail pusher (1) move forward.



Changing over the firing head for V-nail changeover.

It is necessary to switch over the nailing head each time a different size V-nail is used.

To replace the head proceed as follows:

- Loosen the firing head locking screw using a suitable wrench (the screw is on the opposite side to the V-nail magazine (3))
- Lift the head upwards and out.
- Draw the V-nail pusher back using the relative control cable located on the rear side of the machine's working bench to make the magazine accessible (1 and 2).
- Remove all the V-nails in the magazine (use the pencil magnet (4) if necessary).
- Insert the new V-nails of the required height in the magazine.
- Release the control cable (1) and let the V-nail pusher move forward.
- Insert the new head to match the height of the V-nails to be used (5).
- Tighten the firing head locking screw (3).



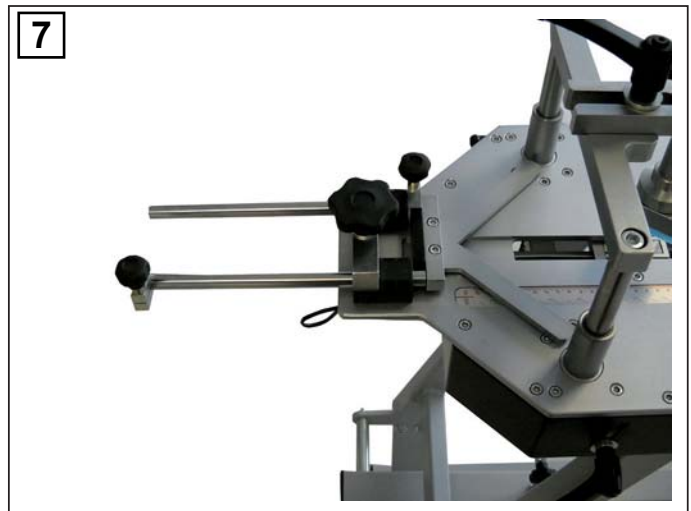
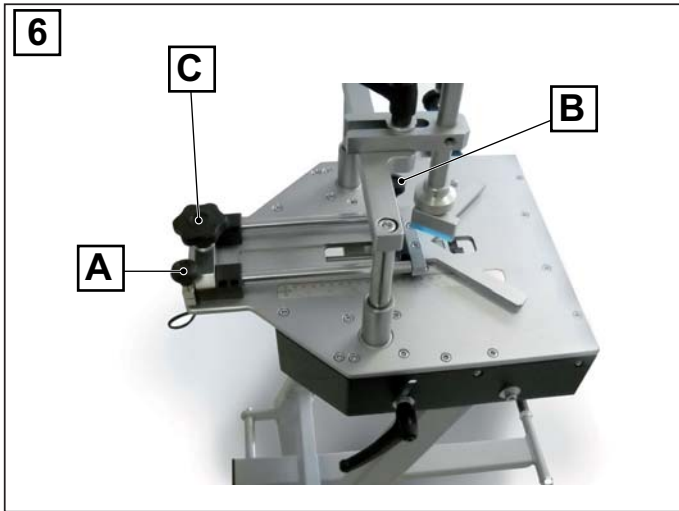
Adjustment of V-nail insertion positions.

For correct positioning of the mouldings to be joined together, the U200 is fitted with a 90° fence.

The fence may move forward or be drawn back in order to correctly position mouldings of various sizes.

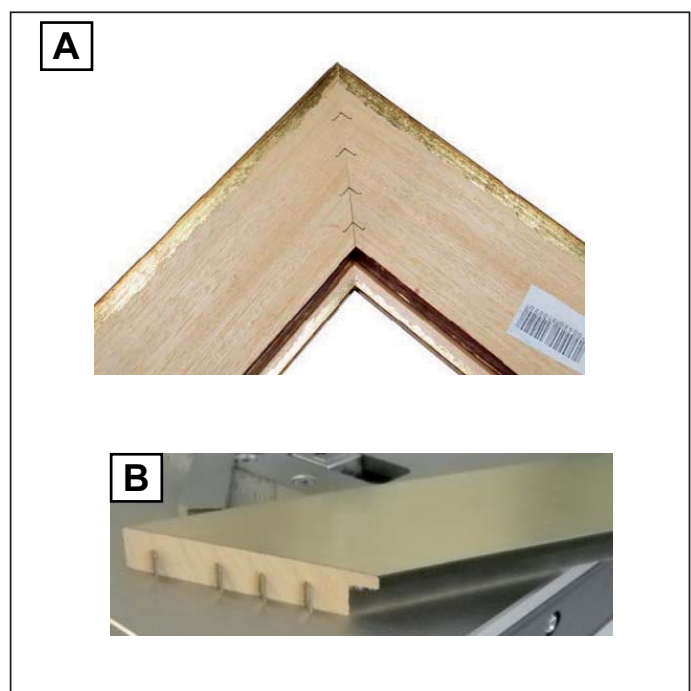
The fence forward and fence back positions can be fixed with accurate precision and repeatability by locking it in the required position using the stopper clamps A-B (6).

In this way the operator can easily use the U200 to insert V-nails with maximum precision in all the positions between the two mechanical stops (7 and 8).



- (A) This picture shows 4 V-nails inserted along the joint between two mouldings.
 (B) Depending on the thickness of the frame, two or more V-Nails can be inserted in the same point.

As well as moulding clamping, a braking system (AFC) guarantees perfect blocking also of the V-nail firing unit during multiple insertion of V-nails in the same position.



SUGGESTIONS FOR MAKING PERFECT JOINS

1) V-nail types

In order to ensure that the machine can make top quality joins using a wide variety of materials, different V-nails are available with different degrees of sharpness suitable for use with different hardness values and characteristics of the materials being handled.

V-Nails can be divided up into the following categories:

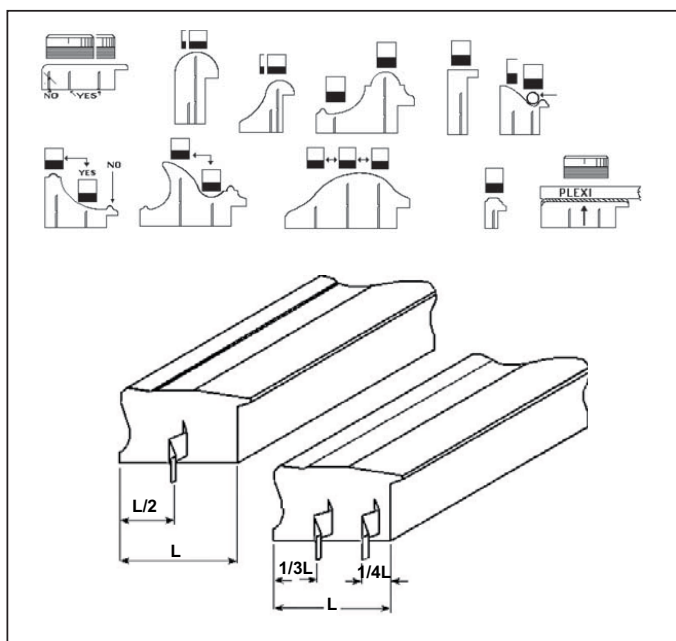
V-nail type	Height mm
H3	3mm (optional)
H5	5mm
H7	7mm
H10	10mm
H12	12mm
H15	15mm

It is advisable to carry out a check on the material in question for selecting the most suitable sharpness.

2) Stapling positions

The following guidelines are designed to help you get the best results in terms of quality joins:

- Avoid inserting V-nails close to the moulding edge. The minimum recommended distance from the outer edge is at least 10mm.
- When creating a joint with just one V-Nail, position the V-Nail on the centre line of the frame.
- If you wish to insert 2 or more V-Nails for each joint, it is advisable to insert the outer V-Nail at 1/3 from the outer edge and the inner V-Nail 1/4 from the inner edge.



Fixed fences, optional

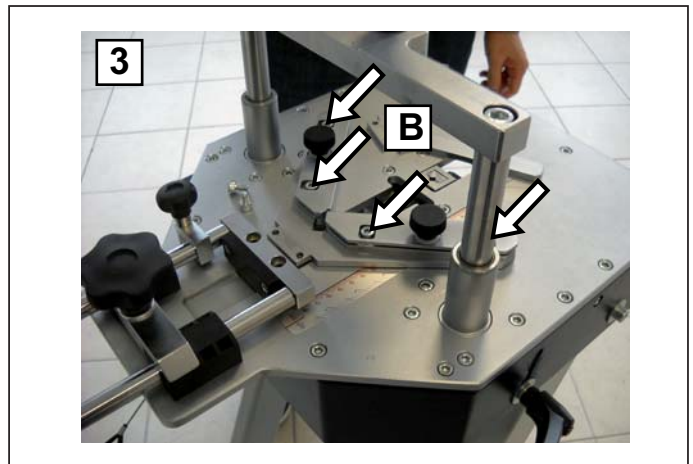
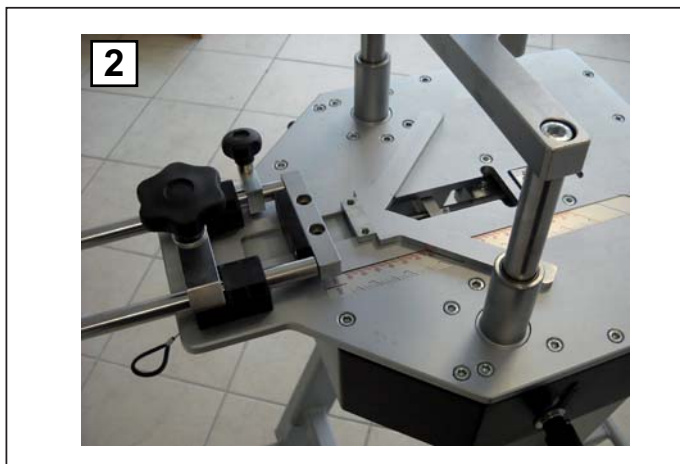
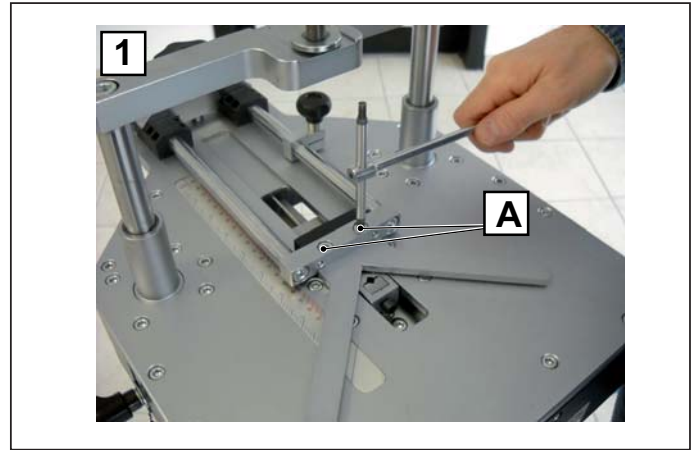
Changing the fixed fences with a two panel mobile fence unit.

To replace the fence unit, proceed as follows:

1. Undo the 2 socket head screws (A).
2. Once the screws have been removed (A) the fixed fence of the

fence unit can be removed.

3. To install new fences repeat the above steps in reverse order and tighten the 2 socket head screws.
4. If necessary remove the contact edges from the old fence and transfer to the new one if the latter is without.
To do so, simply act on the 4 screws (B) shown in the figure.




Fixed fences, optional

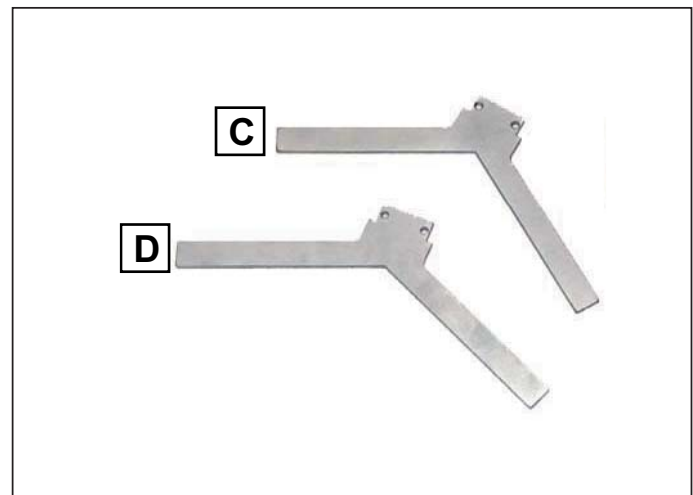
1. To vary the contact angle it is necessary to replace the fixed fence with one of the right angle.

The fence for 90° joins (four-sided frame) is part of standard machine equipment.

By installing the optional fence (C) the machine can be used to make 120° joins (six-sided frame).

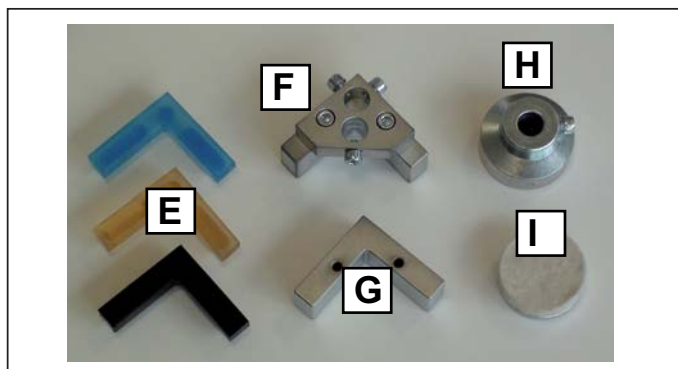
By installing the optional fence (D) the machine can be used to make 135° joins (eight-sided frame).

 **NOTE:** the declared stroke of the machine (200 mm) is determined based on the use of the standard 90° fence.
If fences with other angles are used (120°, 135°), the stroke is reduced due to the additional encumbrance.

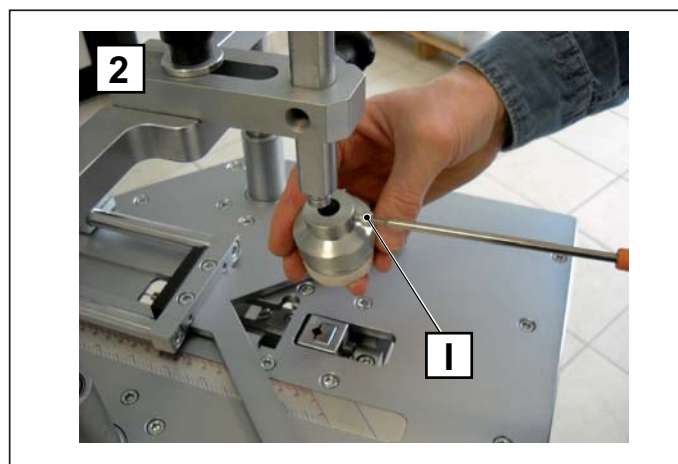
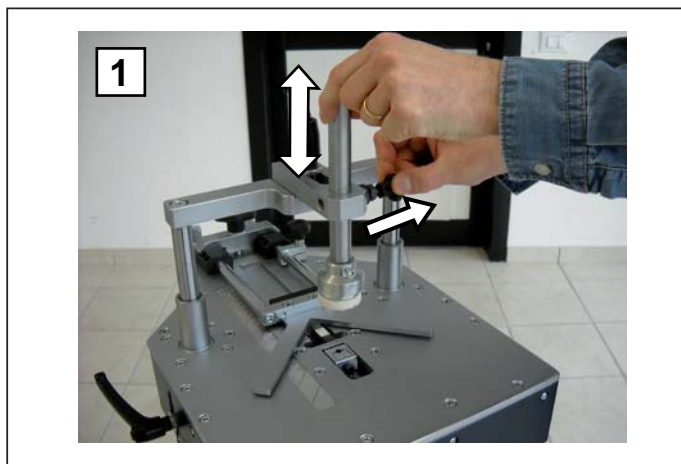


Adjusting the height and replacing the vertical clamp stopper

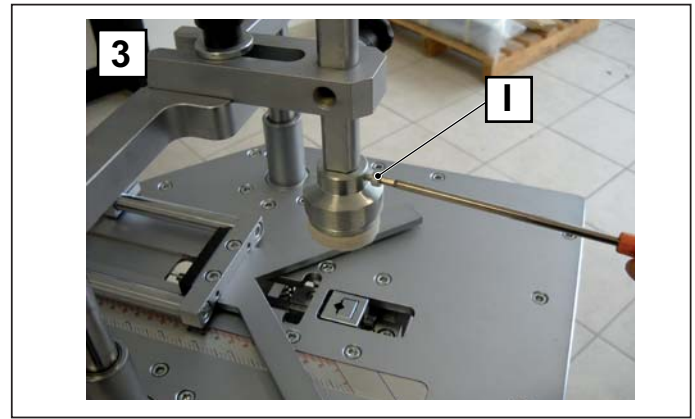
E	<i>Interchangeable rubber stoppers: Soft (blue) Medium (yellow) Hard (black)</i>
F	<i>Single stopper holder</i>
G	<i>Magnetic stopper holder</i>
H	<i>Magnetic support</i>
I	<i>Round magnetic felt stopper.</i>



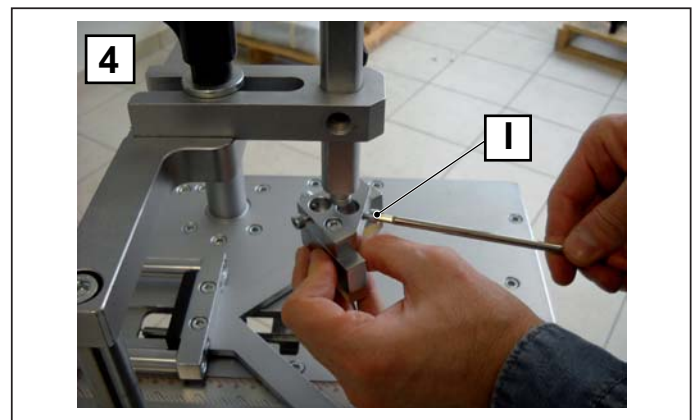
1. To adapt the position of the stopper (E) to the thickness of the frame, proceed as follows:
 - a. Pull the click knob out.
 - b. Lift or lower the punched rod based on requirements.
 - c. Release the click knob to block the column.
2. To replace the stopper holder (F, G or H), you must unscrew the screw (I) which secures it to the rod and pull it downwards and out.



3. In the case of a magnetic stopper holder, tighten the socket head screw (I).

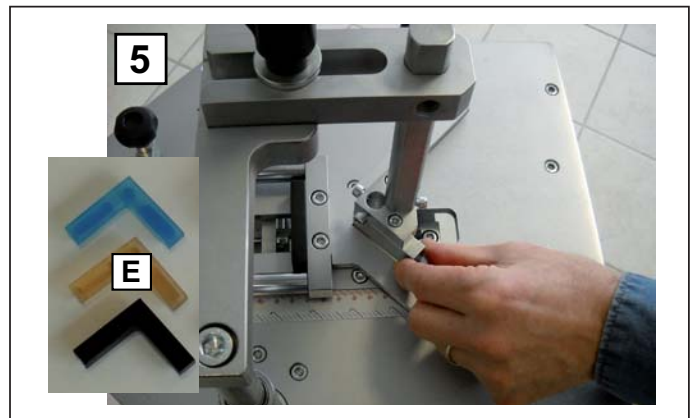


4. In the case of a magnetic support, tighten the socket head screw (I).



5. Insert the interchangeable rubber stopper (E), depending on the required hardness, by inserting it into the stopper holder support.

6. Check the correct position of the stopper by positioning it like the 90° fence and tighten the fixing screw (L).



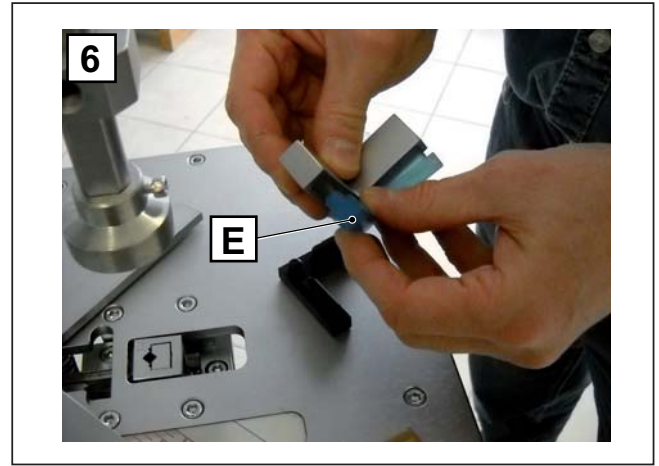
Installation of interchangeable stoppers

The interchangeable stoppers (E), based on work requirements, may be applied to:

- Corner magnetic stopper holder;
- Single stopper holder

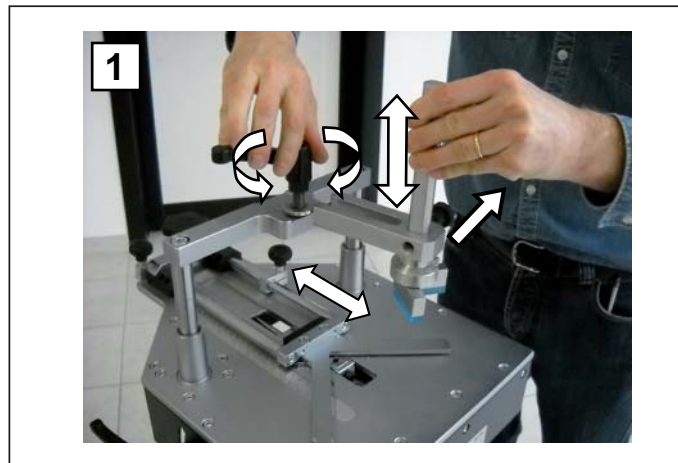
Install the stopper (E) for the required hardness in the stopper holder, positioning it under the slot and manually pressing it in place.

To remove the stopper (E) simply pull it out with your hand by gently taking hold of one of the two sides.



Stopper position adjustment

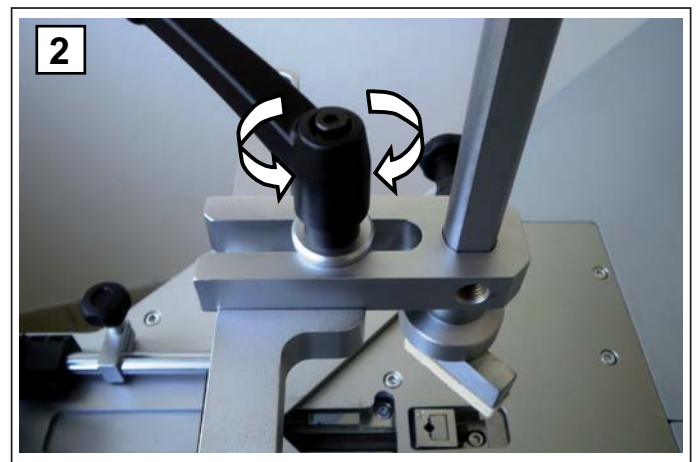
- Position the mouldings to be joined on the working bench.
- Select the most suitable stopper for the frame moulding and arrange it on the magnetic support.
- Loosen, using the handle above (1 and 2), the clamp which locks the stopper holder rod to allow for forward and backward movements in order to position the stopper directly in line with the V-nail insertion point.
- Tighten the clamp handle in the selected position.



Stopper height adjustment

Pull the side click knob in the direction of the arrow (2) and adjust the height of the stopper on the frame so that it is approximately one cm above the moulding.

- Release the click knob when you have achieved the optimum position.
- Make sure that the pin is completely inserted in one of the holes on the rod by gently moving it.
- Press the control pedal halfway down, thus lowering the vertical clamp, to check that the mouldings to be joined are correctly blocked.
- Press the pedal all the way down to insert the V-nail.



Adjusting the workbench

- The machine's working bench can be tilted by simply loosening the two side locking handles and tilting the machine backwards or forwards along the relative slot.
- When loosening the handles, use one hand to counterbalance the machine and stop the working bench tipping to the travel stop due to gravity.

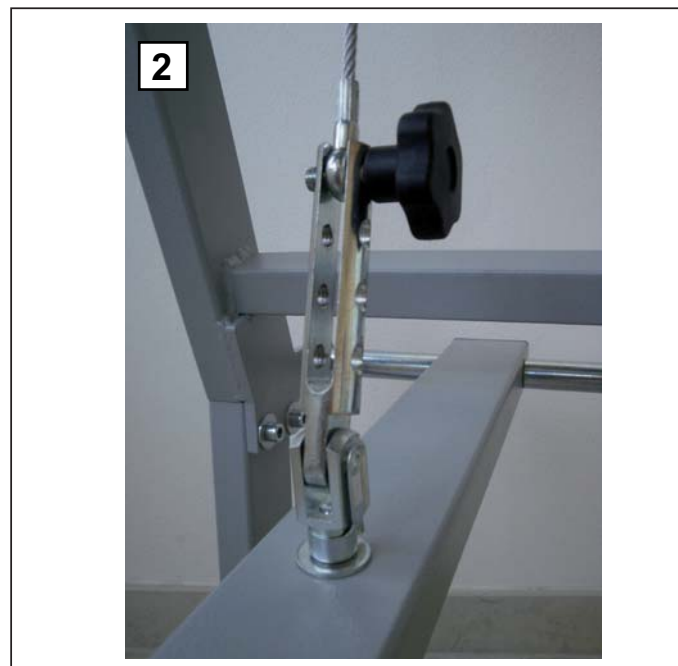
The machine can be set up as required in accordance with the following positions:

- Working bench tilted forward (1);
 - Working bench tilted backward (2);
 - Working bench horizontal (3);
- Any other adjustments are possible between the two ends of the adjustment slot.
 - Once adjustments have been made, tighten the handles securely to block the machine in the selected position.
 - Depending on the tilt selected, adjust the height of the pedal by acting on the cable fixing fork.



Pedal height adjustment

- The pedal is connected to the working bench by means of a pulley system, consequently its height from the floor depends on the tilt of the machine (1).
- Once the right tilt of the working bench has been established, position the cable inside the fork depending on the required height of the pedal and lock in place with the knob (2).
- Adjust the height of the pedal so that the hammer comes out of the firing head completely when the pedal is fully pressed;
- The completely pressed pedal must not touch the floor or the foot of the stand to guarantee complete insertion of the V-nail (3).



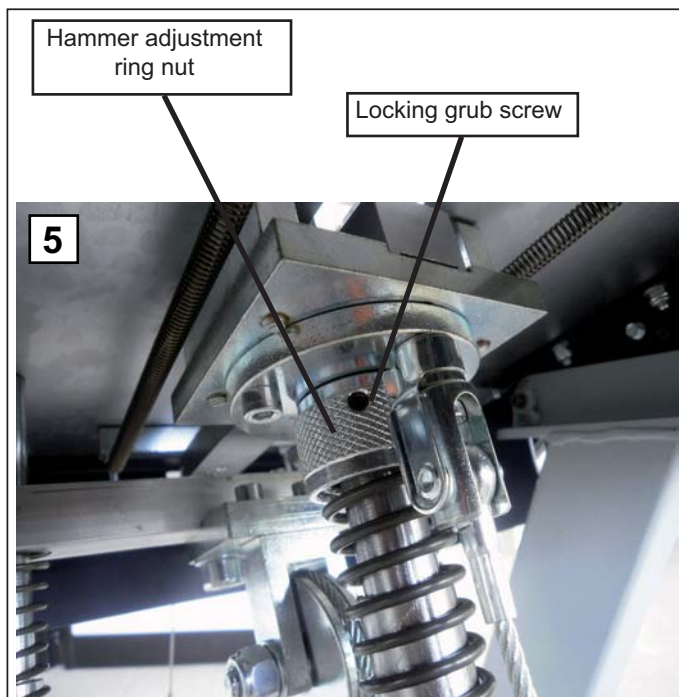
Hammer adjustment

Correct adjustment of the hammer is when the upper surface of the hammer is on the same level as the head surface.

If the hammer protrudes too much an incision will be made on the moulding during V-nail insertion.

To modify its position:

- loosen the two M6 grub screws which block the firing unit adjustment ring nut (5);
- turn the ring nut to adjust hammer height (5);
- press the pedal all the way down to check the exact position of the hammer (6);
- tighten the two M6 grub screws to lock the ring nut in place (5).



4.4. WORKING CYCLE

Checks to be performed before starting work

After having correctly installed the machine as previously described, check that:

- the mouldings to be joined are correctly positioned on the working bench.
- the magazine holds V-nails which are suitable for the mouldings being joined;
- the firing head is of the right size for the selected V-nails;
- the adjustment of the vertical stopper is suitable;
- vertical clamping is perfect when the profile is positioned and the pedal pressed halfway down,
- adjustment of the V-nail insertion position is correct.
- press the pedal all the way down to insert the V-nail.



NOTE – Whenever you wish to insert two or more V-nails overlapping in the same position, you must release the pedal halfway up and then press all the way down again to fire the second V-nail.



DANGER – CAUTION

During normal use, the machine must only process the products/materials indicated in this manual.

The only operating mode possible for the U200 is manual mechanical operation using the foot pedal only (1).

Press the pedal (1) halfway down to block the frame mouldings in place.

Press the pedal (1) all the way down to fire a V-nail.

To make a join, proceed as follows:

1. using the stopper blocks on the fence, determine the V-nail insertion positions;
2. position the mouldings on the working bench (2) pushed up against the fence on the first insertion point;
3. adjust the position and height of the vertical stopper (3);
4. press the pedal (1) halfway down and check the correct position and clamping of the mouldings;
5. press the pedal (1) all the way down to insert a V-nail (if the profile of the mouldings needs two or more V-nails in the same position, release the pedal (1) so it lifts halfway up, and then press all the way down again to insert a second V-nail and so on);
6. release the pedal (1) completely;
7. move the mouldings together with the fence to the next insertion point and repeat steps 5, 6, and 7.

4.4.1. MACHINE STOP

The only possible way to make the machine work is by pressing the pedal. To stop the machine, simply lift your foot off the pedal.

4.4.2. MACHINE RESET

Once the machine has been stopped, it can be reactivated by simply pressing down on the pedal.



5. MAINTENANCE, TROUBLESHOOTING, AND CLEANING

5.1. MAINTENANCE TECHNICIAN REQUIREMENTS

The term "maintenance" does not just cover periodical controls of normal machine operation, but also the analysis and consequent rectification of any of those problems which for any reason stop the machine from working properly or not at all.

Specifically, personnel appointed to perform the servicing, cleaning, replacing of parts and troubleshooting, must work in compliance with the following aims:

1. limit the deterioration of wear parts.
2. reduce accidents to the absolute minimum.
3. reduce costs arising from faults.
4. limit the number and duration of interventions.
5. work in collaboration with the line operators to improve the efficiency of the plant.

5.2. WORK STATIONS AND MAINTENANCE TECHNICIAN DUTIES

The maintenance technician duties are:

- to perform tooling operations and adjust mobile parts on the machine,
- to calibrate, adjust and clean internal machine parts,
- to clean the inside of the machine (disassembling parts if necessary), carry out maintenance, lubrication, assistance operations, troubleshooting and the replacements of worn or damaged parts or structural elements.

The work zones that may present risks for the machine's maintenance technician are the following:

- the area relative to tooling, calibration, adjustment, lubrication, troubleshooting, worn and broken part replacement operations, as indicated in this instruction manual,
- the areas in and around the machine during the movement of mobile parts,
- the areas around piping;
- the areas around the fixed guards.

5.3. MAINTENANCE PRESCRIPTIONS



DANGER - WARNING

ALL THE MAINTENANCE, CLEANING AND PARTS REPLACEMENT MUST BE CARRIED OUT SOLELY AND EXCLUSIVELY WITH THE MACHINE DISCONNECTED FROM ALL POWER SUPPLIES.

It is prohibited to perform any maintenance work on parts that are in motion.

5.4. GENERAL WARNINGS



DANGER - WARNING

BEFORE PERFORMING ANY MAINTENANCE, CLEANING, REPLACEMENT OF PARTS AND TROUBLESHOOTING, PAY THE UTMOST ATTENTION TO THE DECALS AFFIXED TO THE MACHINE. DURING ALL ACTIVITIES DO NOT TAMPER WITH OR DEACTIVATE ANY OF THE SAFETY DEVICES FOR ANY REASON, EITHER TO CREATE BYPASSES OR TO USE THEM FOR PURPOSES OTHER THAN THEIR INTENDED USE AS PRESCRIBED BY THE MANUFACTURER.

After performing any of the above tasks on the machine, reset and reactivate all the safety devices.

Do not tamper with or deliberately damage the protective screens nor remove or conceal the warning notices. In the event of deterioration or illegibility of the safety decals immediately order replacements from the equipment supplier.



DANGER - WARNING

BEFORE PROCEEDING WITH MAINTENANCE, CLEANING AND/OR THE REPLACEMENT OF PARTS, ALWAYS PUT UP A SIGN WHICH IS CLEARLY VISIBLE INDICATING THAT MAINTENANCE OPERATIONS ARE UNDERWAY AND THAT THE MACHINE CAN ONLY BE RESTARTED AFTER HAVING DULY ASCERTAINED THAT ALL OPERATIONS HAVE BEEN COMPLETED AND ALL SAFETY GUARDS HAVE BEEN REPLACED.

5.5. ISOLATION FROM EXTERNAL ENERGY SOURCES

During maintenance, cleaning and replacement of parts, the machine must not be used and no commands must be transmitted. Before performing any maintenance, lubrication, cleaning and replacement of parts etc. external energy supplies must be disconnected. All disconnecting devices must be padlocked in the "0" (OFF) position.

Turn the knob to discharge residue pressure from the pneumatic system and disconnect the compressed air line.

5.6. ROUTINE MAINTENANCE

Personnel responsible for carrying out the operations described in this chapter must have read, understood and consequently observe all the safety prescriptions, in particular:

1. waiting for the stopping times, before inserting limbs or parts of the body into the machine danger areas,
2. the adequate use of personal protective devices and safety accessories needed to perform cleaning operations inside the machine's danger areas,
3. It is prohibited to perform any repair or adjustment work on moving parts,
4. before performing any maintenance, cleaning and replacement of parts, the machine must be isolated from all energy supplies.


Furthermore, all general rules must be observed to keep the machine in perfect working order:

1. keep the machine clean and tidy,
2. avoid all damage,
3. avoid a situation wherein make-shift or urgent repairs become commonplace,
4. do not perform work on the machine which produces swarf; for example, should it be necessary to drill holes, carefully check that no residues end up in machine parts,
5. for disposal of worn or replaced materials, observe the relative legislation in force.

5.7. TASKS THAT CAN BE PERFORMED BY THE OPERATOR

A list of all the periodical checks/inspections, adjustment and control operations and ROUTINE MAINTENANCE operations which can be carried out by the machine operator is provided below.

The position of the machine components is shown in the layouts provided as an appendix to this manual.

FREQUENCY	CHECK	METHODS AND RESULTS
Before each shift	Working area: <ul style="list-style-type: none"> • must be clean and free from dust 	<p>The work station and all the parts outside the machine must be cleaned and all dust and objects must be removed which could impede correct operation and/or compromise the machine's original safety conditions.</p> <p>Remove all shavings from the machine with a jet of compressed air and lint-free cloths.</p> <p>For any type of intervention or to replace parts, call in the maintenance service.</p>
When necessary	Visual inspection: <ul style="list-style-type: none"> • blocked V-nails 	<p>During operation it is possible that V-nails come out of the magazine and remain in circulation near the nailing head. Remove them using the magnetic pen provided.</p> 
At least once a week	Visual inspection of the condition: <ul style="list-style-type: none"> • of all dataplates 	<p>If they become unreadable new ones must be requested from the manufacturer or they must be replaced by the user with others carrying the exact same information.</p>

Parts must always be replaced using original spare parts or at least parts which provide equivalent quality and safety .

The instructions concerning the replacement are not given in this manual and they must therefore be explicitly requested from the machine manufacturer, which reserves the responsibility for the replacement interventions.

5.8. TASKS THAT CAN BE PERFORMED ONLY BY MAINTENANCE TECHNICIANS

The ROUTINE MAINTENANCE operations which must be performed by a maintenance technician are indicated below.

The instructions concerning the replacement are not given in this manual and they must therefore be explicitly requested from the machine manufacturer, which reserves the responsibility for the replacement interventions.

FREQUENCY	CHECK	METHODS AND RESULTS
Every 1,000,000 V-nails used	Check / replace: • Hammer	Replace every 1,000,000 V-nails used

FREQUENCY	CHECK	METHODS AND RESULTS
Every 200 of hammer service hours	Check / replace: • Mechanical parts	Lubrication of moving parts

FREQUENCY	CHECK	METHODS AND RESULTS
Every 5,000,000 V-nails used	Check / replace: • Head V-nail selection	Head replacement, V-nail selection

FREQUENCY	CHECK	METHODS AND RESULTS
Every 5,000,000 V-nails used	Check / replace: • L-block support	Replace the L-block support, V-nail guide channel

REPLACING THE CABLE

1. Remove the knob which holds the cable in the pedal fork (1)
2. Extract the CLIP which secures the cable to the upper fork on the V-nail firing unit (2).
3. Remove the pulley from the column moving unit to free the cable (3).
4. Insert the new cable before reinstalling the pulley.
5. Hook the upper end of the cable to the upper fork.
6. Hook the bottom end of the cable to the pedal fork based on the required height.



5.9. CLEANING



DANGER – CAUTION

It is prohibited to manually clean, oil or grease moving machine parts and elements unless this is strictly necessary for some specific technical requirement. If this is the case all suitable measures must be taken to prevent hazards.

Workers must be informed by means of clearly visible warning signs.

Cleaning operations which can be performed by maintenance technicians are indicated below.

Normally, some cleaning operations can be performed by the machine runner; i.e., in the case of normal operations on the outside of the machine that call for the use of simple personal protective equipment..

Cleaning operations of the internal parts of the machine must be performed by the maintenance service.

To avoid inadvertent untimely and hazardous activation of the machine or unwanted and inadvertent modifications of any kind, cleaning operations should be carried out by the same personnel who usually work on the machinery rather than personnel from a cleaning company who may not observe all the recommendations indicated herein.

All cleaning operations must be carried out only after the machine has been cut off from external power supplies and all accumulated energy has been discharged.



DANGER – CAUTION

Never use petrol, solvents or other inflammable and/or corrosive fluids to clean the machine or its components. Use exclusively commercial, approved non-flammable and non toxic solvents.

Comply with the methods of use and use all the necessary personal protective equipment specified by the supplier of such substances.

The machine, its on-board components must never be washed with water, especially not in the form of jets of any type or intensity; i.e. it must not be washed using buckets, hoses, or even sponges.

For the identification of the components mentioned and details on their position, refer to the “mechanical components” layout and the layout provided with the machine.

Fixed guards must be removed in order to gain access to some of the parts requiring lubrication.

Fixed guards are identified by the following sign:



Once all cleaning operations have been completed, all the fixed guards must be refitted and secured in place.

Being as the machine is of simple and sturdy construction, it does not require any particular mechanical maintenance.

It is however advisable to adhere to the following indications:

- periodically remove any traces of glue or other residues from the firing head and from the top part of the hammer;
- always keep the V-nail magazine seat clean and free;
- remove any residues which may build up along the support of the V-nail guide (L-block).

The cleaning operations must not be carried out using water as this could lead to oxidization of the metal parts.

LUBRICATION

During lubrication operations:

1. Avoid bringing oil and/or grease into contact with the skin.
2. During oil and/or grease changes use protective gloves.

Both spent and fresh lubricants are highly polluting: for disposal of lubricants consult your lubricant dealer or contact a specific toxic waste disposal company.

All lubrication operations must be performed:

1. after first cutting off all external energy supplies,
2. strictly observing the safety indications given in the "safety datasheets" provided with each individual lubrication product used.

The lubrication operations which must be performed by maintenance technicians are indicated below.

To obtain high performance and faultless operation, it is important to lubricate moving parts of the machine on a regular basis.

The position of machine components which need lubricating is shown in the layout provided as an appendix to this manual.

For the disposal of spent oil and grease, observe the relative legislation in force.

Do not disperse spent oil in the environment. Consign it to specifically authorised collection centres.



NOTES

Fixed guards must be removed in order to gain access to some of the parts requiring lubrication.

Fixed guards are identified by the following sign:



Once lubrication operations have been completed, all the fixed guards must be refitted and secured in place.

6. TROUBLESHOOTING AND RELEASE OF MOVING PARTS


These interventions must always be carried out by suitably trained personnel and all precautions must be taken to prevent inadvertent start-up of the machine.

The PROBLEMS OR FAULTS which could lead to a MACHINE STOPPAGE are:

PROBLEM / FAULT	POTENTIAL CAUSE(S)	METHODS AND ANCILLARY NOTES
When the pedal is pressed the V-nails are not fired properly	V-nails badly positioned in the loader.	<ul style="list-style-type: none"> - Check that the sharpened part (edge with glue) is pointing up. - Check the direction of the V-nails
When the pedal is pressed the V-nails are not fired properly	Guide channels blocked or damaged	<ul style="list-style-type: none"> - Check that the "V" of the nails is pointing towards the outside of the machine
When the pedal is pressed the V-nails are not fired properly	Insufficient thrust from the V-nail pusher	<ul style="list-style-type: none"> - Check that the V-nails show no signs of faulty gluing, uneven profiles, etc., replace if necessary.
When the pedal is pressed the V-nails are not fired properly	Head does not match the height	Check that the V-nail guide channels are not dirty or clogged.
When the pedal is pressed the V-nails are not fired properly	Faulty V-nails	<ul style="list-style-type: none"> - Check that the number inscribed on the V-nail head matches the height of the V-nails used - Replace the V-nails; - Use the V-Nails for the smaller sticks
When wishing to insert more than one V-nail in the same they do not overlap in height or when inserted they end up in a slanting position.	Unsuitable V-nails	<ul style="list-style-type: none"> - Change the V-nails for suitable ones
When wishing to insert more than one V-nail in the same they do not overlap in height or when inserted they end up in a slanting position.	Incorrect frame clamping (the frame moves around during V-nail insertion)	<ul style="list-style-type: none"> - Check and if necessary correct the position of the vertical stopper - Replace the stopper with a more suitable one

PROBLEM / FAULT	POTENTIAL CAUSE(S)	METHODS AND ANCILLARY NOTES
When wishing to insert more than one V-nail in the same they do not overlap in height or when inserted they end up in a slanting position.	Worn hammer	Replace the hammer
When wishing to insert more than one V-nail in the same they do not overlap in height or when inserted they end up in a slanting position.	Clogged hammer	Clean the top part of the hammer to remove any product which may have clogged the upper profile

7. REINSTALLATION AND REUSE

 **CAUTION - DANGER**
MOVING AND REINSTALLING THE MACHINE IN A DIFFERENT LOCATION ARE HIGHLY DELICATE OPERATIONS WHICH CALL FOR SIGNIFICANT EXPERIENCE. CONSEQUENTLY TO ENSURE THAT THE OPERATIONS ARE CARRIED OUT WITHOUT ANY RISKS FOR PERSONNEL OR THE MACHINE, THESE OPERATIONS MUST BE CARRIED OUT SOLELY AND EXCLUSIVELY BY PERSONNEL APPOINTED DIRECTLY BY THE MACHINE MANUFACTURER OR AUTHORISED BY THE SAME.

8. EXTINGUISHING MEDIA


The indications on extinguishing media are of fundamental importance as any operations/interventions which are not carried out in compliance with the indications provided below or are not foreseen, may damage the machine, its internal components, the power supply system, the product being handled/produced not to mention injury to operators. Failure to observe the indications will also nullify the warranty.

 **CAUTION - DANGER**
ALL OPERATIONS TO PUT OUT A FIRE MUST BE CARRIED OUT BY PERSONNEL WHO ARE ADEQUATELY INFORMED AND TRAINED CONCERNING THE RISKS AND HAZARDS THAT MAY ARISE DURING EXECUTION OF SAID ACTIVITIES. THEY MUST HAVE READ AND UNDERSTOOD THE SAFETY PRESCRIPTIONS PROVIDED IN THIS INSTRUCTION MANUAL AND BE IN GOOD PSYCHO-PHYSICAL SHAPE.

In the event of a fire affecting parts of the machine, or the processed product, always use a type "C" C₀₂ extinguisher.

A fire extinguisher of this type must be kept next to the machine work station at all times.

9. SCRAPPING AND DISPOSAL.


 **DANGER - WARNING**
IF YOU DECIDE NOT YOU NO LONGER WISH TO USE THE MACHINE DESCRIBED IN THIS MANUAL BECAUSE IT HAS BECOME OBSOLETE AND/OR IRREPARABLY DAMAGED OR WORN TO A POINT WHERE ANY FORM OF REPAIR WOULD NOT BE AN ECONOMICALLY VIABLE SOLUTION, IT MUST BE PUT OUT OF SERVICE AND RENDERED INOPERATIVE AND FREE FROM ALL POTENTIAL HAZARDS.

Decommissioning of the machine must be carried out by specialised and suitably equipped personnel.

If the client does not have the right personnel or tools to be able to proceed with demolition of the machine in total safety and in such a way as to safeguard the operators involved, he must seek the assistance of the machine manufacturer's technical staff.

Before starting the scrapping procedures display signs informing persons in the area that work is in progress.

9.1. SCRAPPING

 **NOTES**
To be able to perform the necessary tasks in maximum safety, the areas around the machine, for a whole 360° and over a distance of at least 2000 mm, must be free of walls, other machinery, equipment or other elements, such as support pillars, which might get in the way.

The main sequential stages for dismantling and scrapping include the following (the list is provided as a guideline and is not exhaustive): disassemble all machine components and consign them to an authority or company for differentiated collection in compliance with the relative legislation in force.

All operations to disconnect the machine must be carried out using suitable equipment and tools of an appropriate size (e.g. a flathead or Phillips screwdriver, hex wrenches, Allen keys, etc.), depending on the type of fasteners.

During dismantling procedures do not enter the interior of the machine or climb under or on top of it for any reason: always work while standing alongside the machine.

Before disassembling parts and/or disconnecting and/or loosening any joining elements, take steps to ensure that the connected parts cannot subsequently fall on top of yourself or other exposed persons.

This must be achieved also using ancillary supports or restraints, or approved and certified lifting devices in compliance with statutory legislation in force in your country.

Never carry out dismantling procedures single-handedly. Always make sure there is someone there to provide assistance and/or help in the event of accidents. Said assistant must have the professional training of a maintenance technician or higher.

Pay attention to any decals affixed to the components to be disconnected and next to terminal boxes.

When the machine has been fully dismantled all the identification plates of the machine and all documents referring to the machine must be destroyed.

9.2. DISPOSAL

! DANGER - WARNING
DISPOSE OF THE MACHINE COMPONENTS IN ACCORDANCE WITH OPERATING METHODS WHICH OBSERVE THE MAIN REGULATIONS GOVERNING SAFETY AND ENVIRONMENTAL PROTECTION IN THE COUNTRY OF DISPOSAL.

The machine can be disposed of without having to reduce it to small pieces; simply separate the main units it is made up of and load them onto a lorry for transfer to a scrap merchant.

Clearly, this operation must be performed using adequate lifting and handling equipment including forklifts, hoists, A-frames, overhead travelling cranes, etc., all of which must be approved and certified in compliance with statutory legislation and applicable regulations.

Proceed with disposal operations in accordance with the relative legislation in force by contacting the relative bodies and/or specialized waste disposal companies authorized to handle industrial machinery and/or waste disposal to make sure that all plastics, metal materials and electrical components which must be disposed of separately are duly sorted.

The employer must be aware of all the statutory legislation in force in the country of disposal and must operate in compliance with the relative provisions.

It is prohibited to dump the machine in environment. All violations are punishable by law.

IDENTIFICATION DATA

MANUFACTURER

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Name	FRAME ASSEMBLING MACHINE
Function	ASSEMBLY OF FRAMES BY INSERTION OF METAL V-NAILS
Model / Type	U200 (previous version A2M 200)
Serial number	
Year of manufacture	2011
Manual Revision	01

DOCUMENT

INSTRUCTION MANUAL

No. of volumes: 1

Date: 17/12/2015

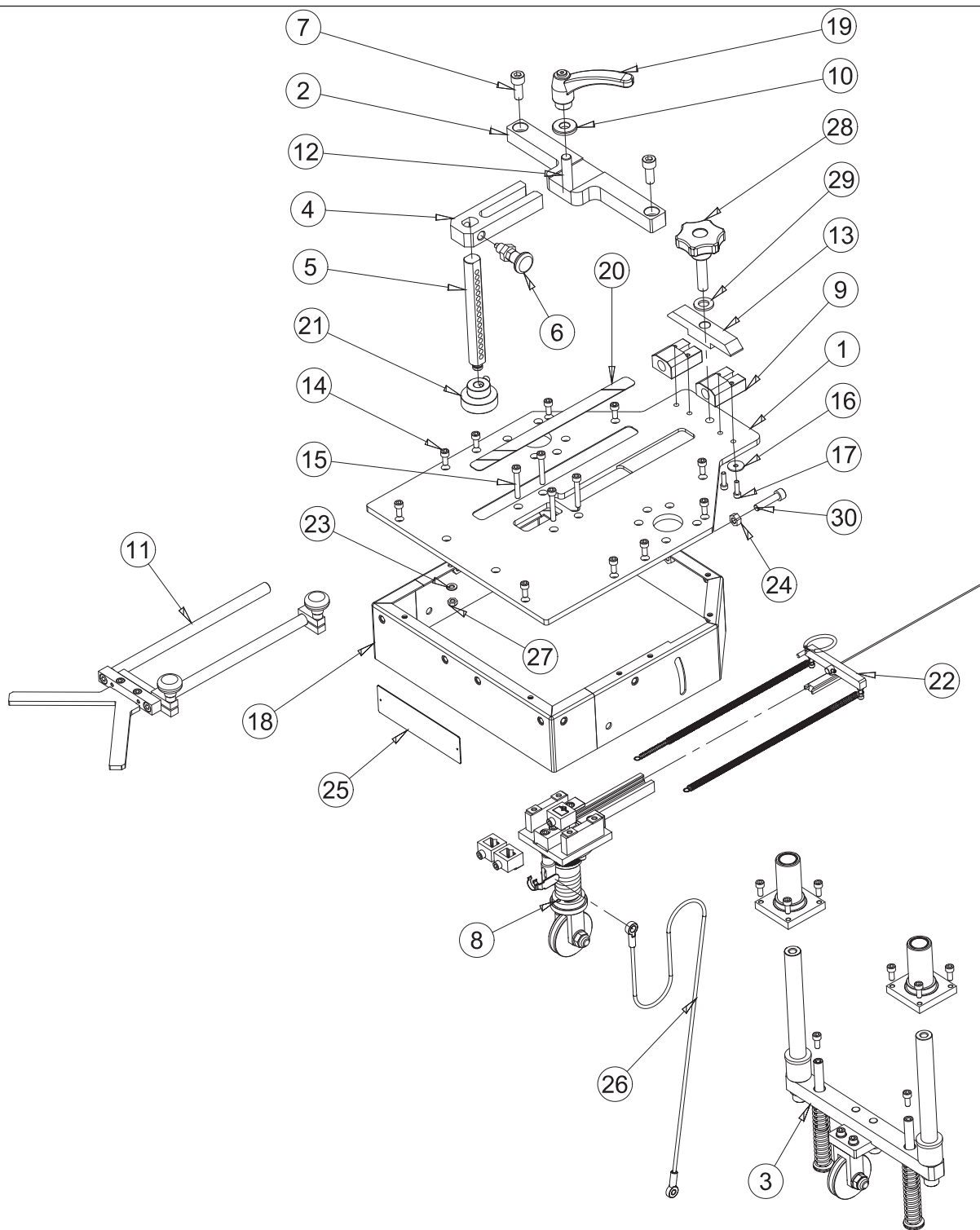
Revision: 01

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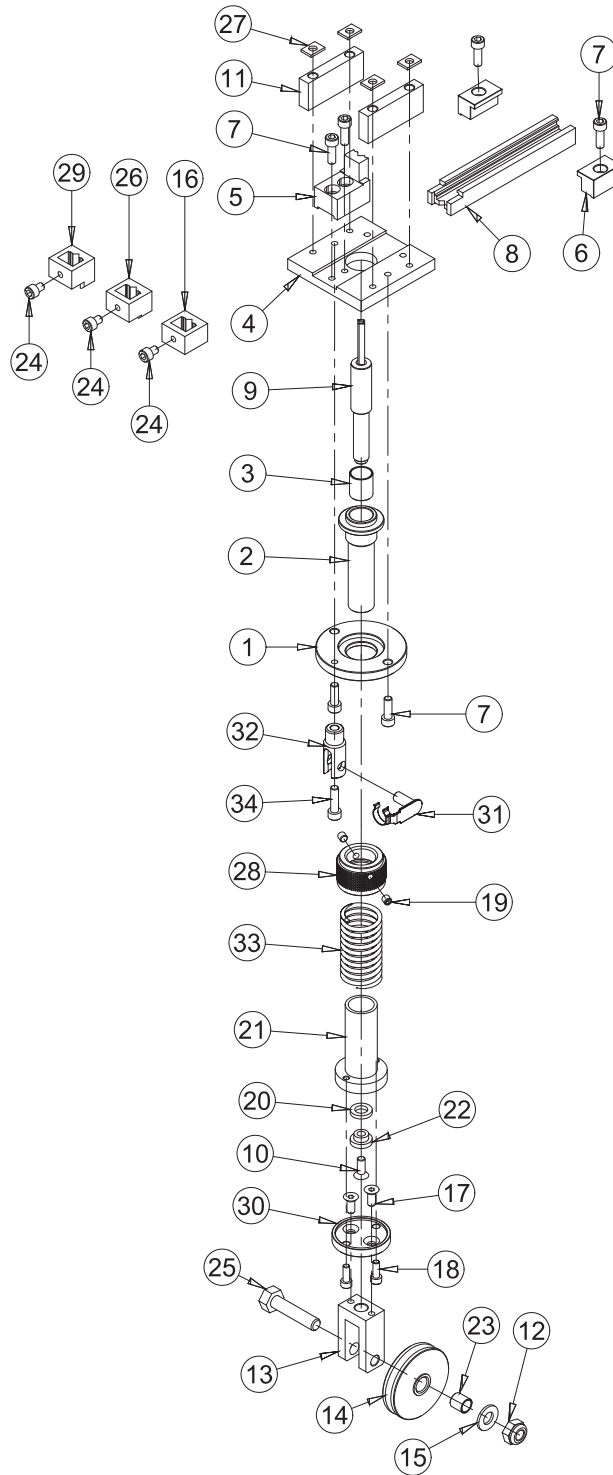
TABLE 1 - MACHINE UNIT



POS.	CODE	DESCRIPTION
1	A3010001	PIANO SUPERIORE U200
2	A30100027	TRAVERSA U200
3	TABLE 3	GRUPPO RAVERSA E COLONNE
4	383600070	SUPPORTO ASTA BLOCCAGGIO VERTICALE
5	ALF334000100	ROD
6	ALF753320010	PLUNGER PIN
7	ALF710100151	SCREW
8	TABLE 2	GRUPPO TESTA
9	383900010	SUPPORTO GUIDAASTA
10	ALF336100030	WASHER
11	TABLE 4	GRUPPO SQUADRA
12	366210120	GRANO TRAVERSA
13	383600040	ARRESTO ASTE DI SCORRIMENTO
14	ALF710100074	SCREW
15	710100082	VITE TCEI M6X40 UNI 5931 8.8 Z.B.
16	718250005	RONDELLA PIANA 5X20 UNI 6593 Z.B.
17	710100046	VITE TCEI M5X18 UNI 5931 8.8 Z.B.
18	A29000004	CARCASSA U200

POS.	CODE	DESCRIPTION
19	ALF244660010	HANDLE
20	366710130	RIGA MILLIMETRATA/POLLICI U200
21	ALF244120130	MAGNETIC SUPPORT
22	TABLE 5	GRUPPO SPINGIPUNTI
23	718100003	RONDELLA PN M 6 UNI 6592 6X12.5 Z.B.
24	715650004	DADO M8 MEDIO UNI 5588 6S P.G. Z.B.
25	365211400	TARGETTA U200
26	ALFA29100008	CABLE
27	715650008	DADO AUTOBLOCCANTE M6 BASSO Z.B.
28	753320003	VOLANTINO M12X50
29	ALF718100006	WASHER
30	710100117	VITE TCEI M8X35 UNI 5931 8.8 Z.B.

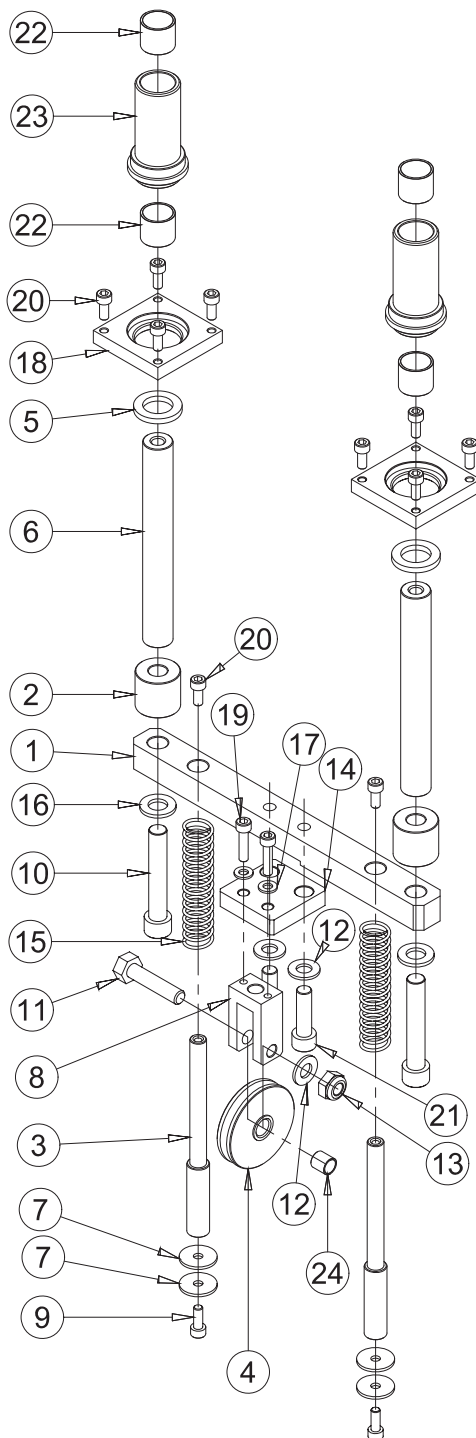
TABLE 2 - HEAD UNIT



POS.	CODE	DESCRIPTION
1	A30100005	FLANGIA GRUPPO MARTELLETTO
2	ALFA30100006	DRIVER BLADE
3	ALF753420008	HEAD BUSHING
4	ALFA30100007	HEAD SUPPORT PLATE
5	ALF384200050	L BLOCK
6	383600020	BLOCCHETTO FISSAGGIO MAGAZZINO
7	710100076	VITE TCEI M6X18 UNI 5931 8.8 Z.B.
8	ALF398350031	V NAIL STEEL MAGAZINE
9	ALF298420080	DRIVER COMPLETE
10	710200058	VITE SPEI 6X16 UNI 5933 10.9 Z.B.
11	A30100010	DISTANZIALE GRUPPO TESTA
12	715650007	DADO AUTOBLOCCANTE M10 BASSO
13	A30100008	FORCELLA CARRUCOLA
14	A30100009	CARRUCOLA
15	718100005	RONDELLA D10 UNI 6592 Z.B.
16	394950050	TESTINA H15
17	710200068	VITE SPEI 6X14 UNI 5933 10.9
18	710100044	VITE TCEI M5X14 5931 8.8 Z.B.

POS.	CODE	DESCRIPTION
19	714300015	GRANO TSI 6X6 UNI 5923 14.9
20	A30100013	RONDELLA SPESSORE MARTELLETTO
21	A30100014	CILINDRO GUIDA MARTELLETTO
22	A30100015	RONDELLA CENTRAGGIO MARTELLETTO
23	753420005	BOCCOLA ALVEOLATA Di10 De12 L12
24	710100071	VITE TCEI M6X8 UNI 59318.8 Z.B.
26	A30100033	TESTINA H10
27	394950030	SPESSORE IN GOMMA
28	A30100012	GHIERA SERAGGIO MARTELLETTO
29	394950020	TESTINA H7
30	A30100011	GIUNTO FORCELLA MARTELLETTO
31	ALF753820001	CLIP AND PIN
32	A30100004	FORCELLA ATTACCO CAVO
33	765000008	MOLA FILO 3.3 DE32 L148 SP13
34	710100078	VITE TCEI M6X22 UNI 5931 8.8 Z.B.

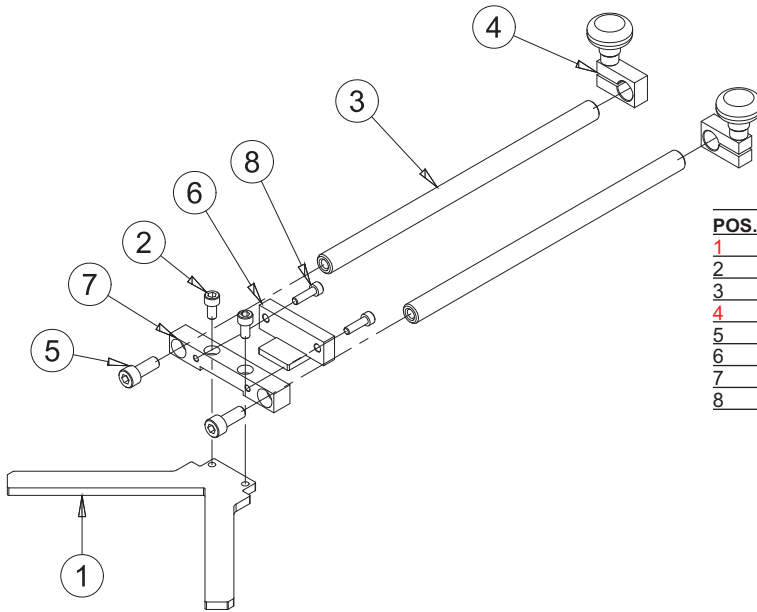
TABLE 3 - CROSSBAR AND COLUMNS UNIT



POS.	CODE	DESCRIPTION
1	A30100022	TRAVERSA MOLLE E COLONNE
2	A30100020	DISTANZIALE
3	A30100021	ASTA MOLLA
4	A30100009	CARRUCOLA
5	A30100017	RONDELLA DI BATTUTA VUKOLLAN
6	A30100016	ASTA DI BLOCCAGGIO VERTICALE
7	718250003	RONDELLA PINA 6X24 UNI 6593 Z.B.
8	A30100008	FORCELLA CARRUCOLA
9	710100075	VITE TCEI M6X16 UNI 5931 8.8 Z.B.
10	710100191	VITE TCEI M12X70 8.8 UNI 5931 Z.B.
11	A30100033	PERNO CARRUCOLA
12	718100005	RONDELLA D10 UNI 6592 Z.B.
13	715650007	DADO AUTOBLOCCANTEM10 BASSO
14	A30100023	SUPPORTO FORCELLA CARRUCOLA
15	765000006	MOLLA F2 DE20.5 L147 SP 17
16	ALF718100003	WASHER
17	A30100018	RONDELLA PM M6 UNIO 6592 6X12.5 Z.B.
18	710100105	FLANGIA GUIDA ASTA

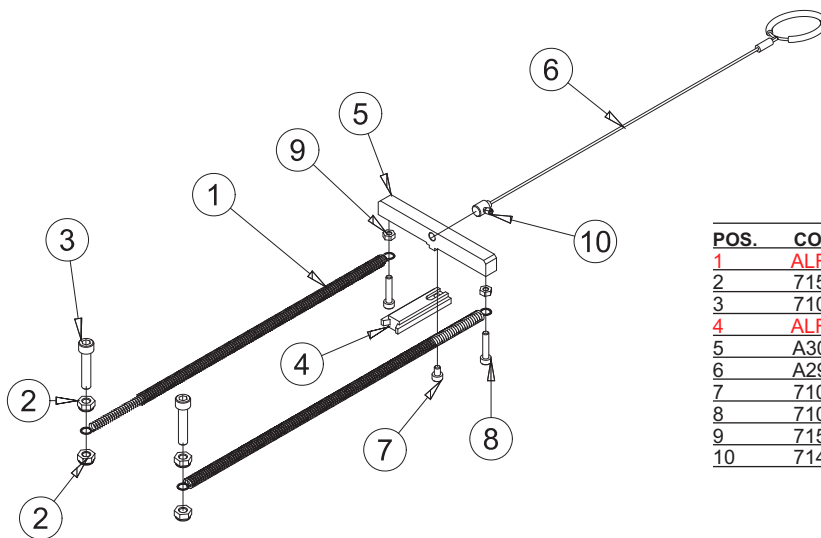
POS.	CODE	DESCRIPTION
19	710100105	VITE TCEI M6X25 UNI 5931 8.8 Z.B.
20	ALF710100074	SCREW
21	710100153	VITE TCEI M10X35 UNI 5931 8.8 Z.B.
22	753420013	BOCCOLA ALVEOLATA Di20 De23 L20
23	A30100019	GUIDA ASTA
24	753420005	BOCCOLA ALVEOLATA Di10 De12 L12

TABLE 4 - FENCE UNIT



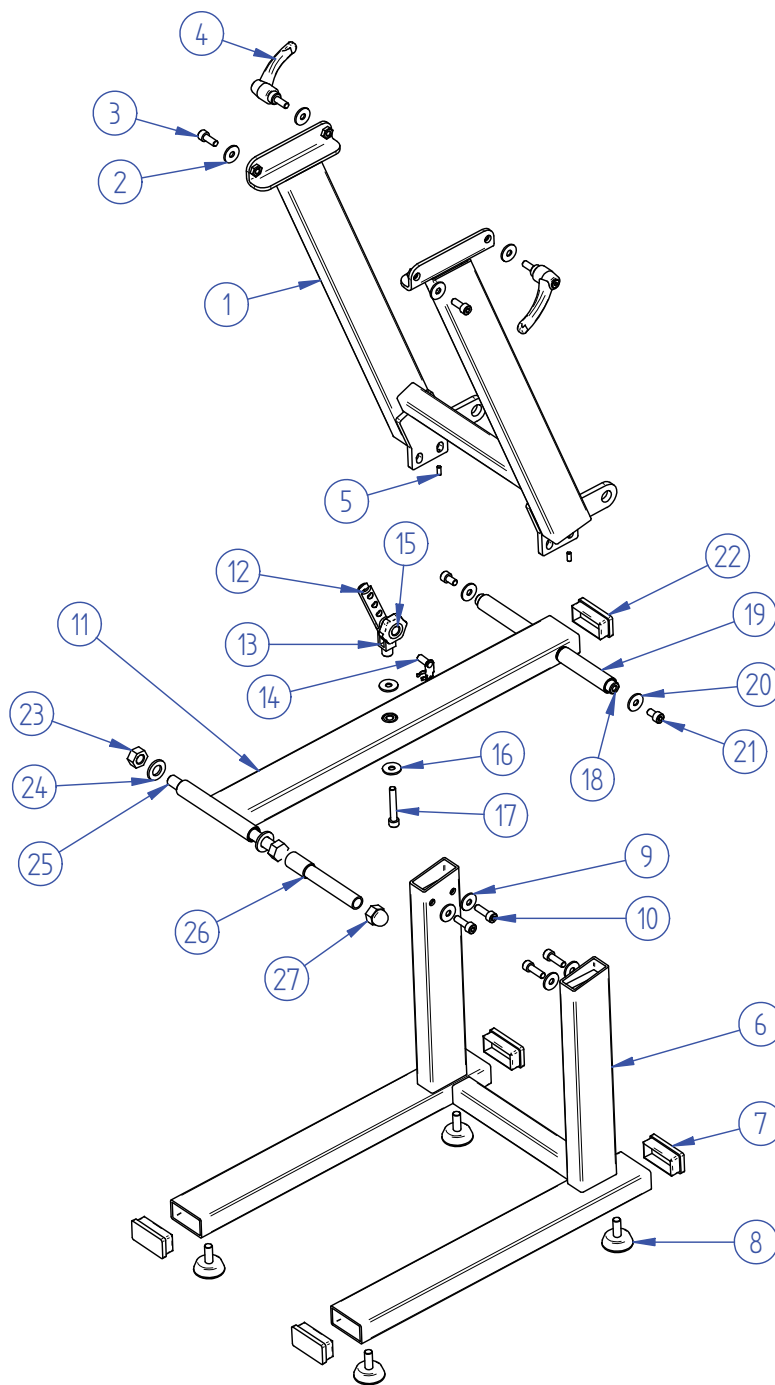
POS.	CODE	DESCRIPTION
1	ALF375200010	FENCE ALPHA
2	710100073	VITE TCEI M6X12 UNI 5931 8.8 Z.B.
3	A30100028	ASTA DI SCORRIMENTO SQUADRA
4	ALF243150010	CLAMP ASSEMBLY
5	710100139	VITE TCEI M8X20 UNI 5931 8.8 Z.B.
6	A30100029	GUIDA PER SQUADRA
7	383900020	SUPPORTO GUIDA ASTE
8	710100046	VITE TCEI M5X18 UNI 5931 8.8 Z.B.

TABLE 5 - V-NAIL PUSHER UNIT



POS.	CODE	DESCRIPTION
1	ALF765000009	SPRING
2	715650008	DADO AUTOBLOCCANTE M6 BASSO Z.B.
3	710100080	VITE TCEI M6X30 UNI 5931 8.8 Z.B.
4	ALFA30100025	NAIL STICK PUSHER
5	A30100024	CURSORE MAGAZZINO
6	A29100001	CORDICELLA D. 1.6 PER SPINGIPUNTI
7	710100001	VITE TCEI M4X6 UNI 5931 Z.B.
8	710100008	VITE TCEI M4X20 UI 5931 8.8 Z.B.
9	715650001	DADO M4 MEDIO UNI 5588 Z.B.
10	714300003	GRANO STEI 4X4 UNI 5923 14.9

TABLE 6 - STAND UNIT



POS.	CODE	DESCRIPTION
	A22000002	COMPLESSIVO CAVALLETTO SUPERIORE U200
1	A29000002	CAVALLETTO SUPERIORE U200 VERNICIATO
2	718100016	RONDELLA P.L. M8 UNI 6592 8x24 Z.B
3	710100139	VITE TCEI 8x20 UNI 5931 8.8 Z.B
4	ALF753170003	HANDLE
5	714300010	GRANO 5x12 PG DIN 913 CI 45 P.P
	A22000001	COMPLESSIVO CAVALLETTO INFERIORE U200
6	A29000001	CAVALLETTO INFERIORE U200 VERNICIATO
7	810380436	TAPPO PIANO 60x30x2,5 - 4
8	ALF753690010	FEET SET OF 4
9	718100016	RONDELLA P.L. M8 UNI 6592 8x24 Z.B.
10	ALF710100115	SCREW

POS.	CODE	DESCRIPTION
	A22000003	COMPLESSIVO PEDALE U200
11	A29000003	PEDALE U200 VERNICIATO
12	A30100032	FORCELLA CAVO PEDALE
13	ALF753770001	HEAD
14	ALF753820001	CLIP AND PIN
15	A29100009	VOLANTINO D.40 M8x20 FISSAGGIO CAVO PEDALE
16	718100016	RONDELLA P.L. M8 UNI 6592 8x24 Z.B.
17	710100120	VITE TCEI 8x50 UNI 5931 8.8 Z.B.
18	A30100003	PERNO PEDALE
19	A30100002	DISTANZIALE PERNO PEDALE
20	718100016	RONDELLA P.L. M8 UNI 6592 8x24 Z.B.
21	710100112	VITE TCEI 8x14 UNI 5931 8.8 Z.B.
22	810380436	TAPPO PIANO 60x30x2,5 - 4
23	715650009	DADO M14 MEDIO UNI5588 Z.B.
24	718100020	RONDELLA P.N. M14 UNI6592 Z.B.
25	A30100030	BARRA FILETTATA ZINCATA M14 L=325
26	753320011	MANOPOLA GOMMA NERA Di=15 L=130
27	715250002	DADO M14 CIECO UNI 5721 Z.B.



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