DESYS srl

BORING MACHINE Mod. GF 21G
GF 27G
GF 35G

INSTRUCTIONS

SPARE PARTS

CE

GRIGGIO S.p.A.
WOODWORKING MACHINERY

Via Ca' Brion, 40 - 35011 Reschigliano (PD) ITALY
Tel. 049/9200920 Fax 049/9201433
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GRIGGIO S.p.A.
WOODWORKING MACHINERY

BORING MACHINE

MODEL

BORING MACHINES
GF21 spindles
GF27 spindles
GF35 spindles

MACHINE N°

YEAR OF MANUFACTURE

GRIGGIO S.p.A. WOODWORKING MACHINERY
Via Ca' Brion, 40 - Reschigliano (PD) ITALY
Tel. 049. .9200920
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WE WOULD LIKE TO THANK YOU FOR HAVING CHOSEN ONE OF OUR PRODUCTS

This manual contains all information, advice and warnings that our technicians deemed essential to operate the machine properly.
It also contains routine maintenance rules, so that your machine will always be kept in perfect working order.
We advise you to read this manual entirely before operating the machine for the first time.

INDICE

1. CONFORMITY STATEMENT

Griggio S.p.A. declares that this Boring machine has been manufactured accurately, by using the best techniques available to manufacture a quality product. We also declare that our boring machine complies with EEC 89/392 Machines Guideline, as well as with the following standards:
EN 292/1
EN 292/2
EN 60240
EN 60240/1
EN 73/23 CE
IEC 408

The machine is hence commercialised with CE conformity mark:

GRIGGIO S.p.A.
Via Cà Brion,40 - 35011
Reschigliano (PD) ITALY

The President

2. SAFETY AND GENERAL SAFETY INFORMATION

2.1 USAGE AND MAINTENANCE ADVICE

In this manual we have considered all routine maintenance operations.
We advise you not to carry out any other working, repair or intervention than the ones envisaged in this manual.
We suggest that you keep this manual with care and in a location where it can easily be found and consulted by the operator.

2.2 MACHINE IDENTIFICATION

The machine can be identified by means of the information written on the plate located in the front of the machine on the left-hand side. When spare parts are ordered or advice is required to operate the machine or to carry out maintenance operations, always indicate the machine's model number written on the plate, as well as voltage and nationality.
It is absolutely forbidden to remove the plate or to change the information written on it.
On the Boring machine described in this manual, the following plate has been attached:


GRIGGIO S.P.A.
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MODELLO	
MATRICOLA Nr.	MC00058808
ANNO COSTR.	2001

MAX Kg

		TOT.MAX
KW		
V		
A		
IP		
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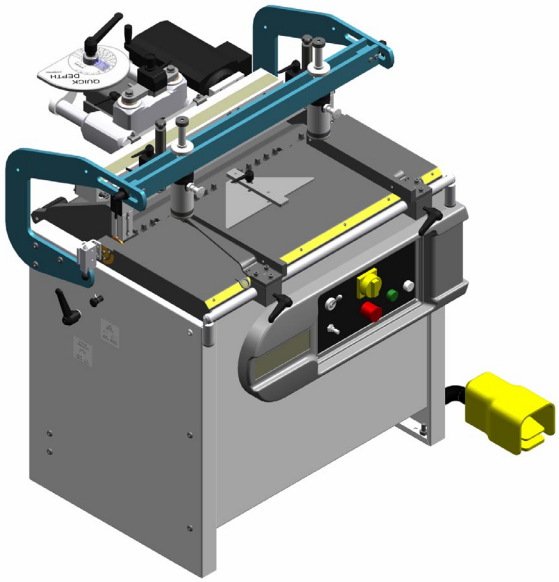


3. OPERATIVE NOTES

WOODWORKING MACHINES CAN BE DANGEROUS

1) To operate the machine safely and correctly, follow the indications contained in this manual care fully and scrupulously.
2) The machine will have to be operated only by personnel who is both qualified and over 18. People responsible for safety should make sure that the machine operator has read and fully understood all the information contained in this manual.
3) Maintenance interventions must be carried out only by personnel who is both qualified and of age.
4) Personnel responsible for periodical and extraordinary servicing must have a good knowledge of mechanics and electronics.
5) Keep away from any moving part in the machine.
Never touch the spindles and /or the drills when the machine is operational.
6) Never superimpose wood pieces to be worked. Always bore one piece at a time, after having adjusted the machine correctly.

REMOVING OR TAMPERING WITH SAFETY DEVICES MAY CAUSE SERIOUS ACCIDENTS. IT IS FORBIDDEN TO REMOVE, EXCLUDE OR MODIFY SUCH DEVICES. PERIODICAL CHECKS MUST BE CARRRIED OUT TO MAKE SURE THAT SAFETY DEVICES ARE ALWAYS IN GOOD WORKING ORDER. ANY DEFECT OR POSSIBLE PROBLEM IS TO BE DEALT WITH IMMEDIATELY.

4. DESCRIPTION OF THE MACHINE

Our Boring Machines have been manufactured to make a series of holes at a fixed 32-mm distance between centres on wooden pieces (with maximum precision).
The head has its fulcrum on the machine table and it can be tilted until a 90-degree angle. The pieces to be bored are fed by the operator, who places them on the machine table. The operator will carry out the required adjustments by pressing the control pedal before locking the pieces into place with the relevant hold down clamps and starting boring operations.

The following parts make up the machine:

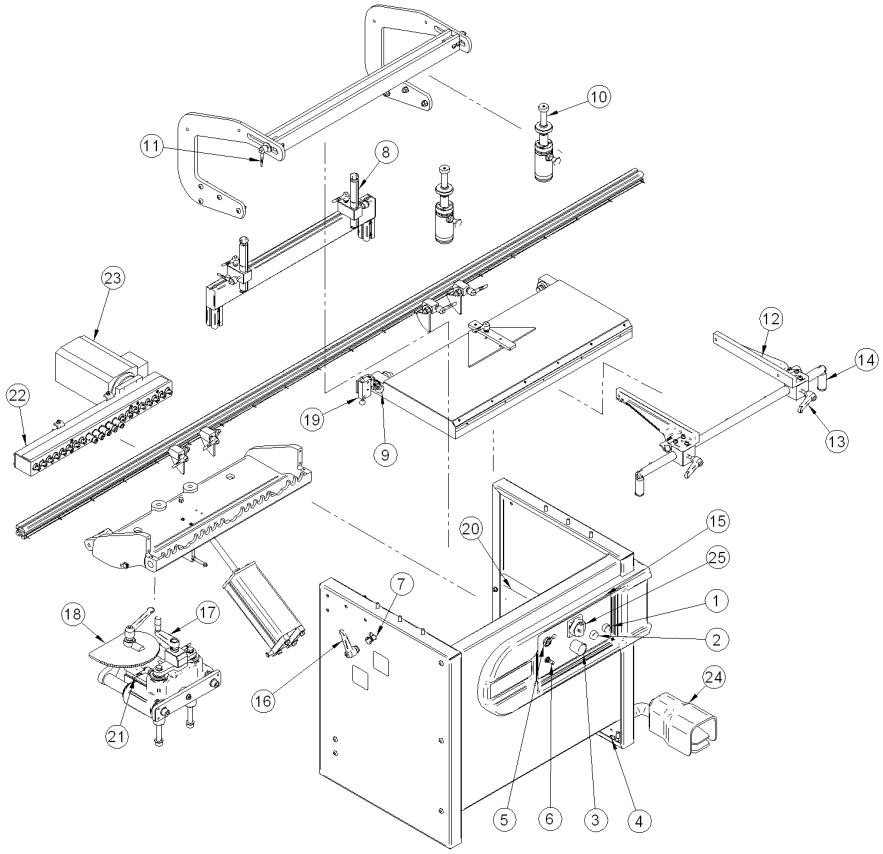
- A steel frame structure
- Spindlehead unit with transmission and drill spindles with quick-change seat (standard).
- Hold down clamps unit to clamp the piece to be cut in a vertical position.
- Pneumatic system for head positioning and head feed.
- Back stops so as to obtain the same vertical and horizontal boring distance
- Crank mechanism to adjust spindles height, equipped with mechanical counter and quick-depth device to adjust hole depth from 0 mm to 100 mm.

4.1 APPLICABLE TOOLS

Quick-change spindle drills with a 10mm-diameter shank L=20mm.
Drills up to 40mm-diametre outside the rack can be used; 100 mm maximum working length (attachment is not taken into account).

4.2 MACHINE PARTS

1) Electric power line light
2) Switch to make the engine operational
3) Emergency pushbutton
4) Machine clamping
5) Lever-operated valve for head overturning piston.
6) Piston adjustment and drills feed speed
7) 45°Block pin
8) Back stops
9) Tilting degree dial for spindlehead
10) Fast-positioning safety hold down clamps
11) Clamping handle for hold down clamps rail
12) Table limiters
13) Clamping handle for limiters rails
14) Limiters exclusion device
15) Electric control board
16) Rack rotation clamping handle
17) Control handle for drills height from table
18) Drills depth adjustment for piece to be bored
19) Reference pin to repeat sets of holes (optional)
20) Lubrication-filter-regulator air unit
21) Drills feed cylinder
22) Spindlehead
23) Engine
24) Pneumatic control pedal
25) Electrical main switch



5. SUPPLIED EQUIPMENT

The machine comes with the following equipment to adjust the machine itself:
- 45-degree head position clamp
- Protractor scale to position the boring head
- Quick-positioning safety hold down clamps
- 4 T.E. wrenches sizes 6/7, 10/11, 12/13, 16/17.
- 7 hexagon ring wrenches sizes 2.5-3-4-5-6-8-10
- 5 quick-change bushes for cylindrical-shank drills 10 mm in diameter
- 3000mm extension fence with millimetrical scale and 4 oscillating stops

The following equipment is available on request:
- 45° Triangle for frame construction
- Central spline for 90° frames
- An additional extension fence with millimetrical scale (3000 mm max)
- Additional oscillating stops for extension fence
- Reference pin for line boring (2 pins maximum)
- Additional quick-change bushes for cylindrical shank drills 10 mm in diameter

6. SAFETY PROTECTION

The main risk is due to the revolving drills. To reduce this risk to the minimum, our machines have been equipped with the following safety devices:

1) Emergency Pushbutton

It is located on the control board in the front part of the machine. When it is pressed, all machine movements are halted immediately.

2) Set of Plates

They contain an accurate description of safety precautions and indications on how to operate the machine and make it possible to identify the machine parts. One of these plates contains the identification data and the serial number of the machine itself.

3) Side Protections

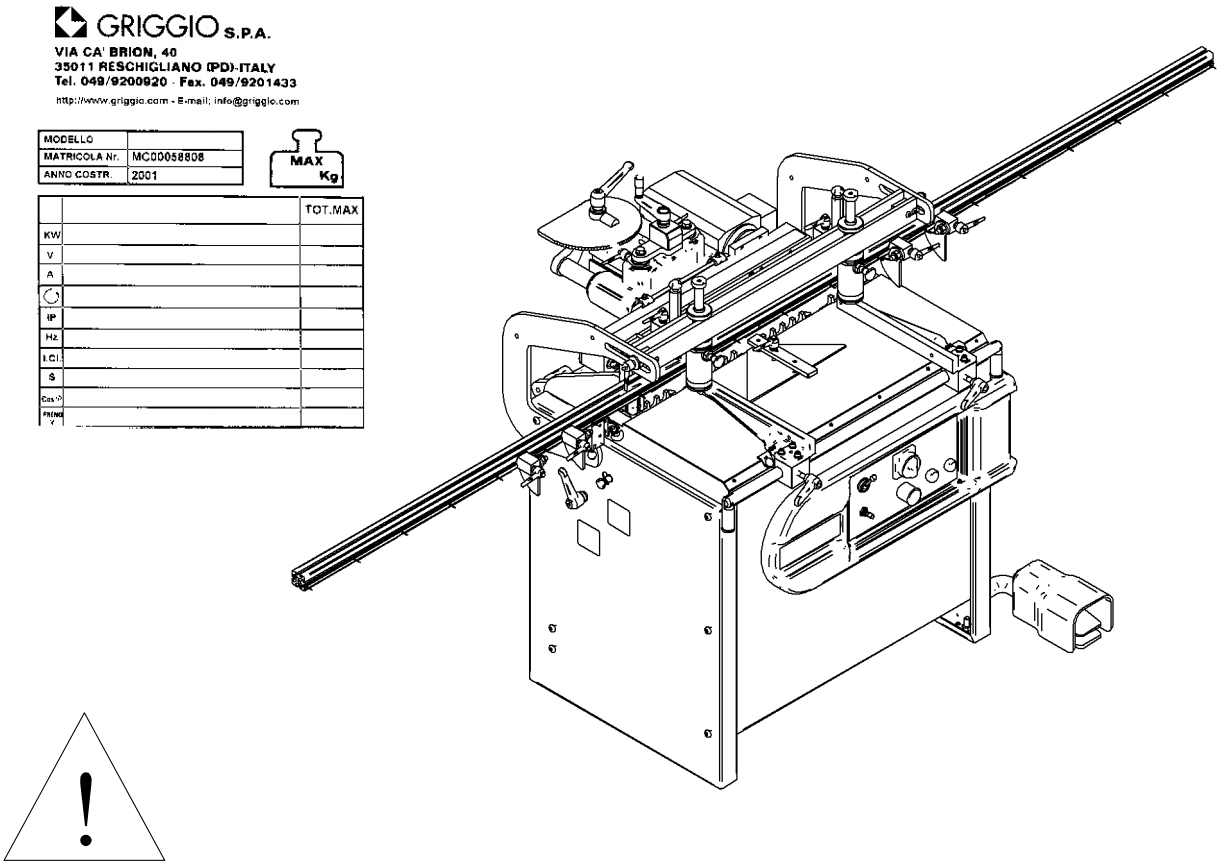
They prevent the operator from inserting his/her hands accidentally into the machine when the spindlehead is moving.

4) Safety hold down clamps (patented)

They remain either on the machine table surface or on the piece to be worked that has already been positioned, thus preventing the operator from accidentally placing his hands under one of them.

5) EL Safety Device

No-return coil to prevent accidental starting of the machine.



CAUTION SYMBOL: ALL OPERATIONS MARKED WITH THIS SYMBOL ARE DANGEROUS FOR THE OPERATOR. AS A RESULT THE OPERATOR MUST PAY THE GREATEST ATTENTION WHILE CARRYING THEM OUT.

7. INDIVIDUAL SAFETY DEVICES

Although safety devices used are valid, dangerous situations might occur resulting from:
- FALLING OR FLYING WOOD SPLINTERS WHILE PIECE IS BEING WORKED
- CLOTHING BEING TRAPPED IN MOVING PARTS OF THE MACHINE
- FIRE DANGERS
- ELECTRIC SHOCK DANGER
- RISK OF NOISE-RELATED DAMAGES

To prevent any risk occurring during positioning, installation, adjustment, usage, periodical and extraordinary maintenance operations, we advise you to wear:
- gloves (to handle machine parts, components and while replacing drills)
- anti-slip and anti-crush shoes
- goggles or face shields to protect against flying chips and splinters while the piece is being worked or when the machine is being cleaned

Clothing must also be suitable to prevent
- trapping danger
- dragging danger
- crushing danger
- slipping danger

For further information and advice, please read chapter 3 “OPERATIVE NOTES”

8. TECHNICAL SPECIFICATION

8.1 WEIGHT
NET WEIGHT

Version. GF 21	320 Kg
Version. GF 27	360 Kg
Version. GF 35	444 Kg

8.2 OVERALL SIZE

Version. GF 21	1100 x 780 x 1300 mm
Version. GF 27	1200 x 780 x 1300 mm
Version. GF 35	1350 x 1040 x 1250 mm

8.3 MAXIMUM SIZE OF PIECE TO BE BORED

Version. GF 21	850 x 3000 mm
Version. GF 27	990 x 3000 mm
Version. GF 35	1308 x 3000 mm

Maximum thickness of piece to be drilled is 90 mm (all machine models)

8.4 ELECTRICAL CHARACTERISTICS

The electrical characteristics of the machines are:
- Supply voltage: 220/400 – 230/460 Volts
- Frequency: 50/60 Hz
- Number of current phases: 3
- Power: 1.5 kW (n.2 Hp) (Versions GF2132 GF2732)
  2 X 1.5 kW (n.2 X 2 HP) (Version GF3532 – 2 Engines)
- Single-phase 220V (optional). For other voltage values please contact us.

8.5 TABLE SIZE

Version GF 21	900 X 380 mm
Version GF 27	1050 X 380 mm
Version GF 35	1360 X 410 mm

8.6 INTERAXIAL DISTANCE BETWEEN SPINDLES

The interaxial distance between spindles is 32 mm.

8.7 NUMBER OF SPINDLES

Version GF 21	21 spindles
Version GF 27	27 spindles
Version GF 35	35 spindles

8.8 INTERAXIAL DISTANCE BETWEEN FIRST AND LAST SPINDLE

Version GF 21	640 mm
Version GF 27	832 mm
Version GF 35	1088 mm

8.9 SPINDLE REVOLUTIONS

Spindles revolutions are …2800 r.p.m. at 50 Hz
Spindles revolutions are …3300 r.p.m. at 60 Hz

8.10 MAXIMUM BORING DEPTH

Maximum boring depth is …100 mm.

8.11 WORKING PRESSURE

Working pressure is … 6/7 bar

8.12 AIR CONSUMPTION

Air consumption is …10L/Cycle

9. AUTHORISED USAGE

9.1 MATERIALS

This boring machine has been designed and manufactured to bore holes in the following materials:
- heart-wood
- M.D.F.
- Chip-wood boards, laminated wood, ennobled wood etc.

Maximum board thickness is 82 mm with maximum size indicated in paragraph 8.3
Other materials than the ones indicated above can be worked only after having received written approval by machine manufacturer. In particular it is forbidden to work materials containing toxic substances or substances that are hazardous for operator's health and safety. It is also forbidden to bore metals or substances that might impair the machine good performance of might cause fire or explosions.
- Any modification to the machine is forbidden without the written approval by the machine manufacturer.
- It is forbidden to tamper with the machine safety devices

9.2 IMPROPER USAGE

Any operation that does not comply with the indications given in this manual is to be regarded as improper usage.
Moreover:
WE ADVISE YOU NOT TO: lay tools against or on the machine during machine installation, usage or maintenance operations for any reason whatsoever.
WE ADVISE YOU NOT TO: get on the machine or on any of its parts.

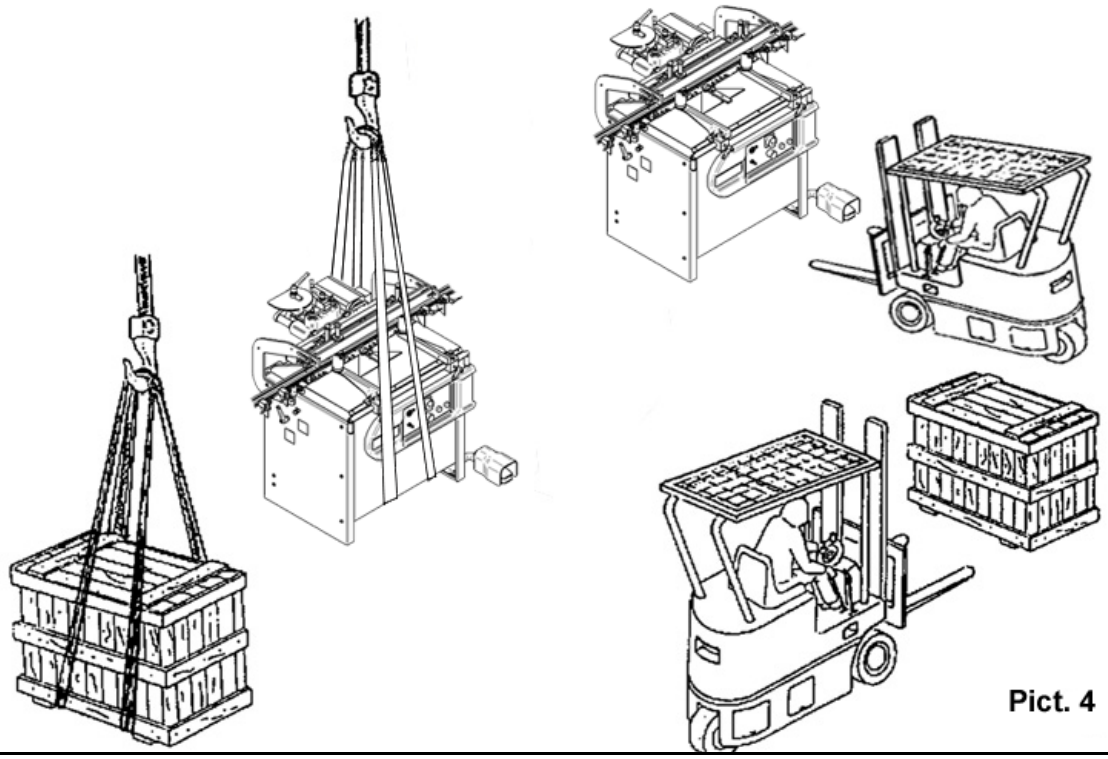
The manufacturer cannot be held responsible for any damage caused to people, animals, or objects resulting from improper usage of the machine.

10. SHIPMENT

This boring machine is packed in a wooden box and/or in a cardboard and nylon box.
Machine handling is possible with:

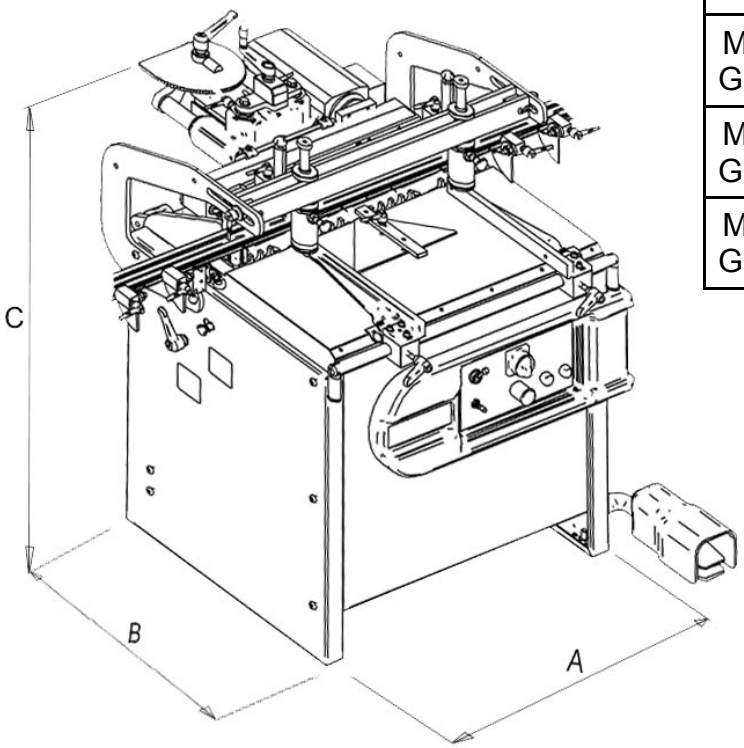
- fork-lift trucks
- bridge cranes
- pallet trucks

Weight is indicated in paragraph 8.1 and hoisting points can be seen in the picture below. When the machine is handled it is necessary to make sure that the surrounding area is free from obstacles. If the machine is stored, it must be kept in a dry place, protected from rain, snow or dampness. During all handling operations, we advise you to pay great attention in order to prevent any damage to people, things or to the machine itself.



Pict. 4

11. MACHINE SIZE



Pict. 5

	A	B	C
Mod. GF21	1100	780	1300
Mod. GF27	1200	780	1300
Mod. GF35	1480	1040	1250

12. INSTALLATION

The machine must be installed on a surface strong enough to sustain its weight so as to prevent harmful vibrations from impairing the good performance of the machine.

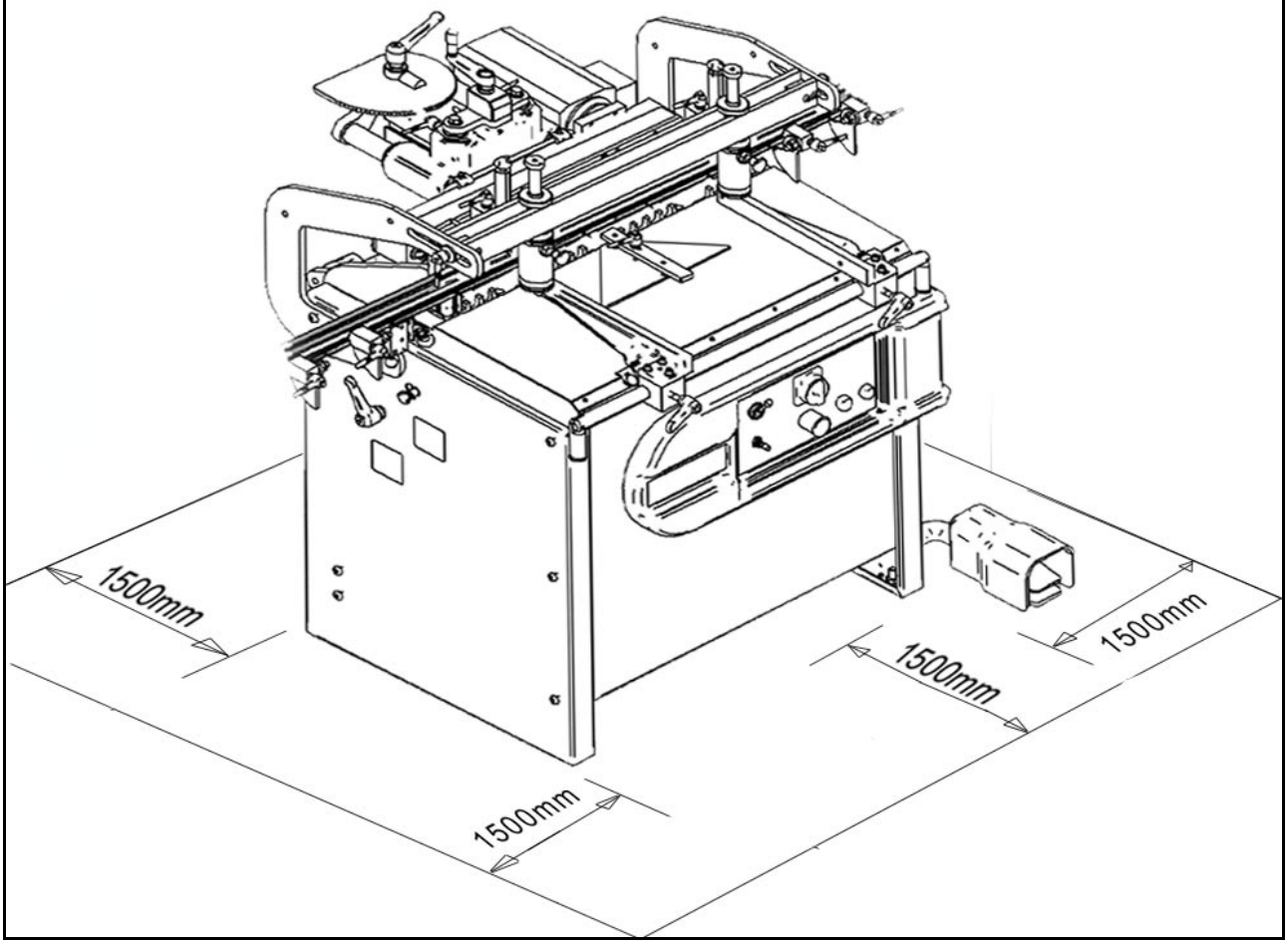
To guarantee maximum machine efficiency and safety, the surface where the machine is located must be made of well-levelled concrete. If the surface does not meet such requirements, we advise you to make a suitable one.

Place the machine in a room, in a suitable position to be used and to be easily connected to
- power supply network
- compressed air network
- suction plant

The location where the machine will be placed must be equipped with suitable lighting to execute working or maintenance operations.

13. WORKING AREA

To be able to use the machine properly, the areas indicated in the picture below must be left free.



14. ASSEMBLY AND PRELIMINARY STEPS TO OPERATE THE MACHINE FOR THE FIRST TIME

When the machine is delivered, it is partially assembled. It is therefore necessary to assemble those pieces that are delivered disassembled for packaging reasons.
Before starting assembling operations, the purchaser must make sure that all machine parts are intact and have not been damaged during shipment.
In particular, we advise you to check the most fragile components, such as electrical or mechanical parts, pneumatic tubes or the machine's safety devices.
When assembly operations are over, the machine must be cleaned by removing protective oil, so that wood pieces do not get stained while being worked.

CAUTION: THE MACHINE IS SUPPLIED WITHOUT A SUCTION PLANT. TO KEEP DUST CONCENTRATION BELOW THE T.L.V. SET IN THE COUNTRY WHERE THE MACHINE IS LOCATED, THE USER MUST INSTALL A SUITABLE SUCTION PLANT ACCORDING TO USAGE, MATERIAL AND FREQUENCY OF USE.

Saw dust disposal

Saw dust and work scraps disposal is to be carried out in compliance with the regulations in force in the country where the machine is used. We advise you to ask the relevant bodies of your country for the relevant legislation so that you know what steps are to be taken.

15.CONNECTING THE MACHINE TO EXTERNAL ENERGY SOURCES

After assembling and installing the machine correctly, the machine has to be connected to:
- power supply mains
- compressed air system

15.1 CONNECTING THE MACHINE TO POWER SUPPLY MAINS

Engine (or Engines) voltage and frequency are indicated on the plate located on the engines.
The user's electric installation must comply with CEI 64.8 (CENELEC HD 384, IEC 364-4-41) standards.
The electric installation must have:
- Equipotential earthing system
- Automatic protection devices installed on the machine and connected so as to guarantee that the machine is automatically cut off from power supply in compliance with the above-mentioned standards.

Connection to the power supply is made with a three-phase plug (or with a single-phase plug according to the board required).
Wire for the earthing system is yellow-green.
Allowed oscillation of electric voltage is +/- 10%
Connect the machine cable to the power supply mains.
Switch the machine on and make sure the machine's engines are revolving clockwise. Make sure that spindles rotation matches the direction indicated on the spindlehead. (R= right L= left). If rotation direction does not match, invert connection cables to the engine.

Refer to the electrical diagrams enclosed in this manual.

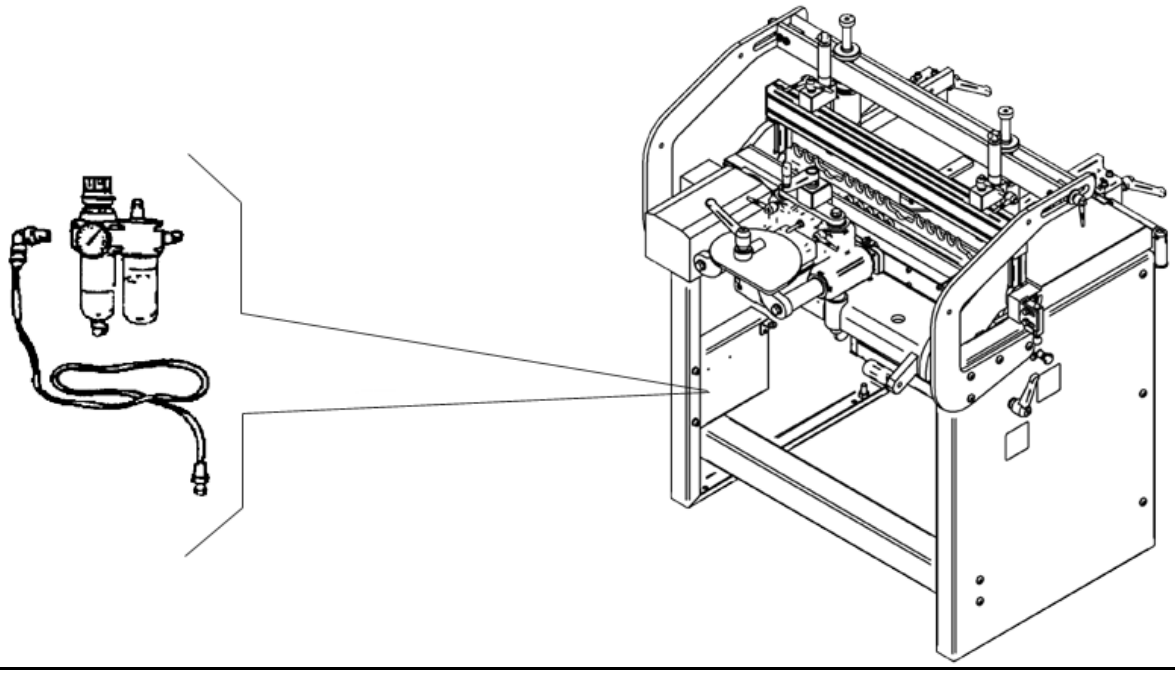
15.2 PNEUMATIC CONNECTION

1) Connect the machine to the compressed air system and make sure that the connection tube is compatible with the one provided alongside the machine itself and located on the lubrication-filter-regulator unit at the back of the machine, in the lower left-hand side.
Pressure should range between 6 and 7 bar maximum.

1) The lubrication-filter-regulator unit is made up by:

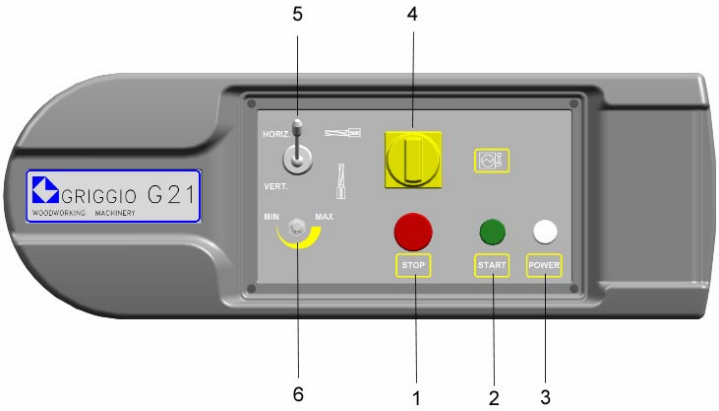
A) A filter, whose function is to purify air from dust and humidity that might damage the valves or gaskets in pneumatic cylinders.

B) A regulator that adjusts compressed air working pressure by keeping this value within the above-mentioned limits.
C) A lubricator that puts a determined amount of oil into the system to lubricate cylinders, valves, gaskets and moving parts.



15.3 CONTROL PANEL

The control panel is located on the left-hand side of the machine:



1	EMERGENCY PUSHBUTTON TO HALT THE ENGINE (THE BUTTON IS NOT AUTOMATICALLY RELEASED)	1 - By pressing this button all electrical functions of the machine are switched off. 2 - To switch electric functions on, turn the mushroom pushbutton in the direction indicated by the arrows.
2	PUSHBUTTON WITH PILOT LIGHT TO MAKE ENGINE OPERATIONAL	1 - It gets the engine ready to be started and hence it gets the spindles ready to rotate during the working cycle.
3	ON/OFF POWER INDICATOR PILOT LIGHT	1 - If the light is on power is available. 2 – If the light is off power is not available.
4	MAIN SWITCH	1 - It the switch is turned on power is supplied
5	HEAD UNIT OVERTURNING VALVE	1 – If the valve is switched on the head-unit is overturned
6	FEED SPEED ADJUSTMENT	1 – It adjusts drills boring feed speed

16. CHECKS AND ADJUSTMENTS

WE ADVISE YOU TO DISCONNECT THE MACHINE FROM POWER SUPPLY AND FROM THE PNEUMATIC SYSTEM WHENEVER YOU NEED TO SERVICE THE MACHINE ITSELF OR TO REPLACE DAMAGED OR WORN PARTS. IF THIS IS THE CASE, FOLLOW THE PROCEDURES INDICATED BELOW AND PAY ATTENTION TO THE ADVICE GIVEN IN CHAPTER 6 OF THIS MANUAL.

16.1 DISCONNECTING PROCEDURE

Before carrying out any maintenance intervention on the machine, follow this procedure:

1. Make sure the machine is in a suitable position to carry out the needed intervention. After having fastened the machine mechanically in this position, disconnect the machine from power supply and from the pneumatic system.
2. Make sure the machine is not connected to any other energy supply and that no residual power is left.

It is essential that this procedure is carried out by a single person only, who will then have to make the

16.2 PREVENTION CHECKS

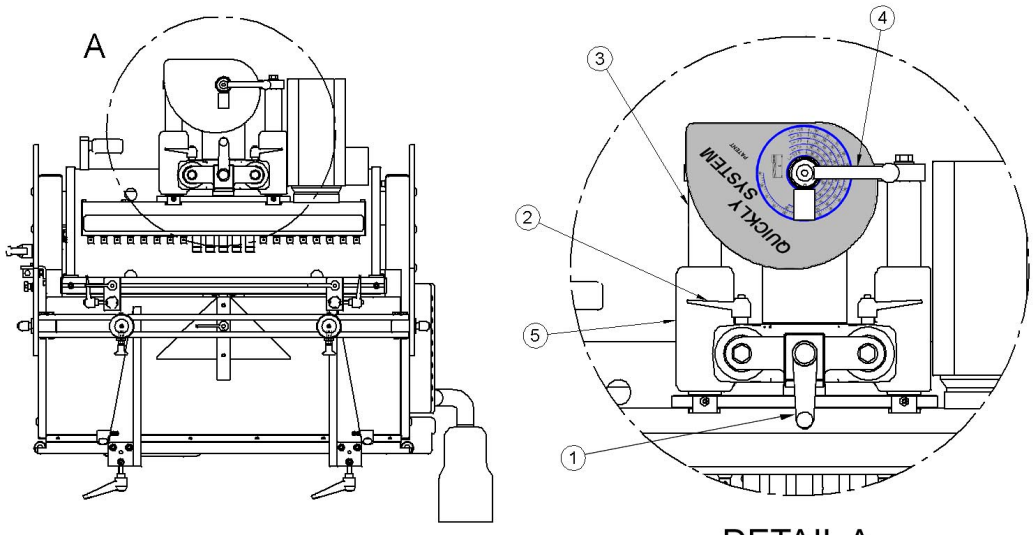
Make sure the area surrounding the machine is neat and clean and that no working scraps are left around, such as saw dust and wood pieces.

MAKE SURE ALL SAFETY AND PROTECTION DEVICES ARE IN PLACE, IN GOOD WORKING ORDER AND READY FOR THE OPERATIONS THAT HAVE TO BE CARRIED OUT.

16.3 BORING DEPTH

To carry out the required boring, follow these procedures:

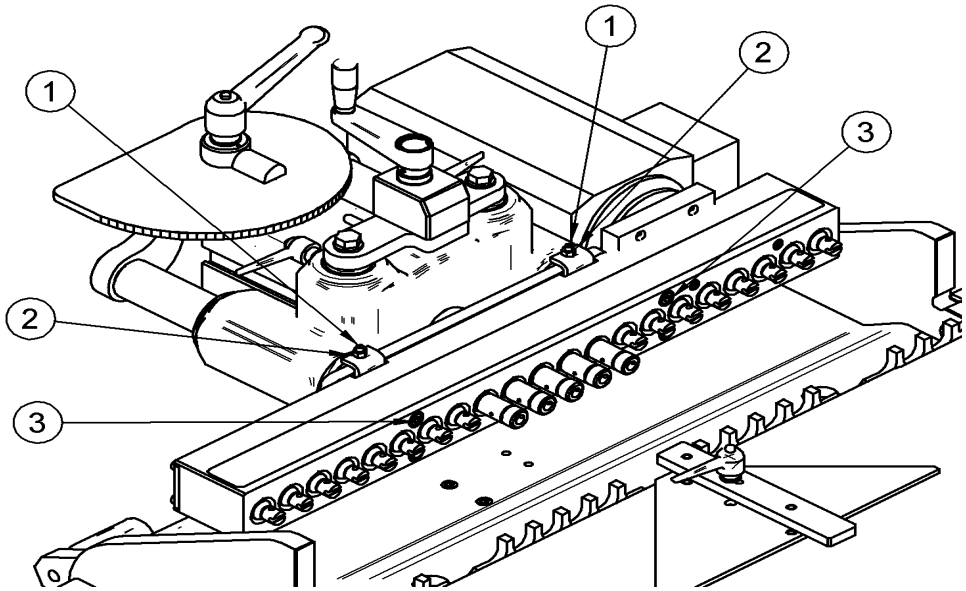
A) Insert suitable drills in the desired position on the spindlehead.
B) Turn the handle (1) to adjust the desired distance between drills and working table with spindlehead at a 90° angle from table surface. Drill distance is indicated in mm. on the mechanical counter (2). Turn the handle so that the screw is stretched in the required position at the required height, so that greater boring precision is obtained. Drill height chosen depends on wood thickness, on the position of the hole and on the diameter of the hole itself.
C) To set boring depth follow this procedure. Once the overall length value of the drill being used has been found on the depth selection screw (3), it is possible to set (no calculation is needed) the actual boring depth value. By unclamping the handle (4) and by turning the depth selection screw (3) until the desired value, the pointer (5), which is also a magnifier, will indicate the chosen depth value. Tighten the handle before starting boring operations.
D) Usually use a scrap wood piece to test the machine settings before boring a good piece of wood.



DETAIL A

16.4 HOW TO ADJUST HEAD PARALLELISM

To adjust head parallelism according to the working table:
- partially unscrew the screws (3) and operate alternatively on the screws (1) and screw nuts (2)
- position the drills parallel to the table
- tighten the screws very well (3)



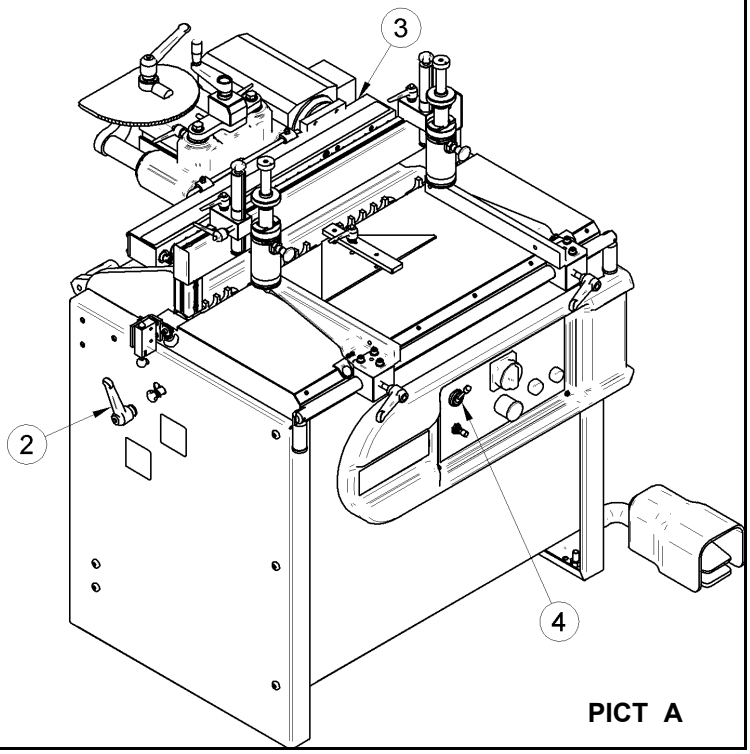
16.5 HOW TO POSITION SPINDLEHEAD VERTICALLY AND HORIZONTALLY

WARNING DANGER!
Follow the procedure described below very carefully.

To position the spindlehead at 90°, follow this procedure:
With spindlehead at 0°:
Unfasten the head by turning the handle (2) located on the left-hand side of the machine.
Operate on the boring head (3), by switching the lever (4) located at the front of the machine; lock the head into position by tightening the handle (2).
To position the spindlehead at 0° do as follows:
With spindlehead at 90°:
Make sure the lever at the front of the machine is also set at 90° and that the pneumatic system is on (hence overturning lever must be active)
Unclamp spindlehead clamping handle (2) on the left-hand side of the machine.

SELECT 0° POSITION WITH HEAD-POSITIONING LEVER (4). ONCE THE HEAD IS IN ITS NEW POSITION CLAMP IT WITH THE CLAMPING HANDLE (2).

How to set Spindlehead at 45°
If the spindlehead is set at 0°:
- Make sure the head-overturning lever (4) is also at 0° and that pneumatic pressure in the pneumatic system is correct.
- Insert lock at 45°in locking position;
- Clamp head-clamping handle (2);
- Lower head-rotating lever (4) located in the front of the machine at 90°;
- Once the machine has been set at 45°, tighten the clamping handle until it is clamped (2).

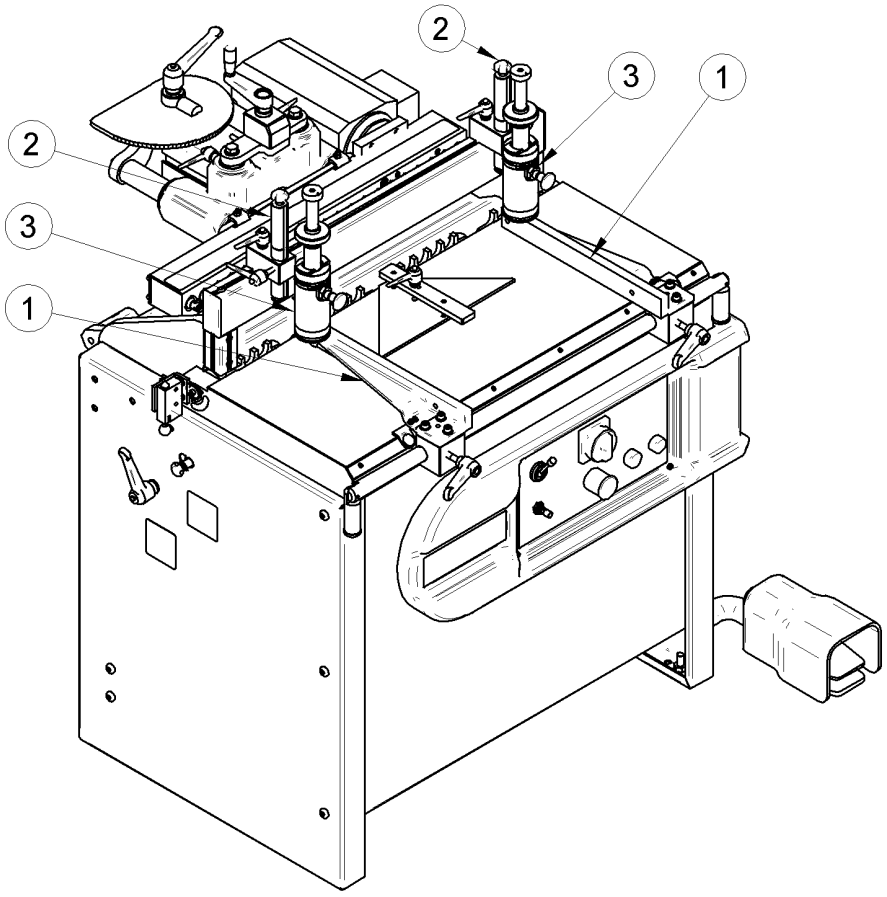


PICT A

16.6 HOW TO USE REFERENCE STOPS FOR STANDARD 0°-90°WOODWORKING

Side rails and back stops are used to position the piece to be worked in a standard working cycle.
With spindlehead at 90° and spindle unit locked into position:

- Set side rails at the right distance from drills that will be used and fasten them.
- Position the hold-down cylinder (or hold-down cylinders) (3) on the table where the piece to be worked will be located.
- Position the piece to be bored against side limiters and use them as rails to position the piece under the hold down clamps and right against the rack.
- Now position the stops (2) over the piece to be bored, lower stop reference block itself on the piece, and clamp the stop itself with the handle.
- The piece is in the right position and it is now possible to start the working cycle by pressing the pedal that starts drills feed with engine switched on (make sure engine switch is on). At the same time hold down clamps will lock the piece into position.



When the first phase is over, release the pedal to release the piece and take the bored piece out of the machine.
Unfasten the spindlehead unit and switch the overturning lever to reposition the spindlehead at 90°. Once the head has been repositioned and locked into position, the second phase can begin:

- Position the piece that has to be joined to one that has just been worked against the side limiter under the hold down clamp (or hold down clamps) (3) and against the back stop block.
- Once you are sure the piece has been positioned correctly, press the pedal to activate hold down clamp lock, drills rotation and drills feed.
- Once the pedal is released, the piece will be released and the working cycle will be over.

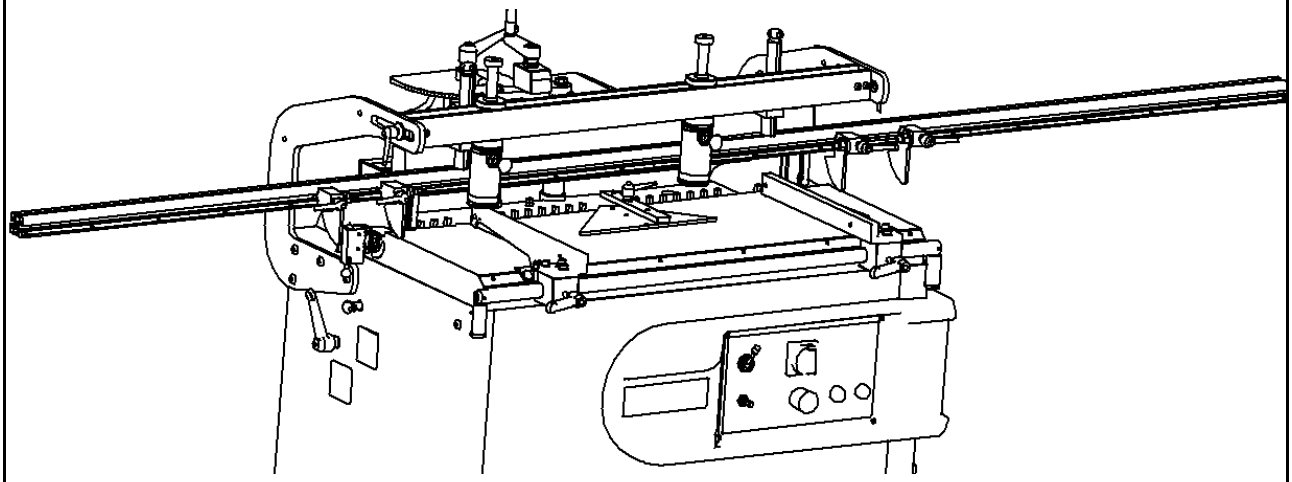
THE TWO PIECES THAT HAVE BEEN OBTAINED (0° -90°) ARE NOW READY TO BE JOINED

16.7 HOW TO USE EXTENSION FENCE (3000 MM STANDARD)

The extension fence is used to make a set of larger holes than the ones the machine can make or to bore large pieces. To use the extension fence you usually have to exclude side limiters completely or partially. To position the extension fence you usually have to exclude side limiters completely or partially and to set the spindlehead at 90°. If you use the extension fence longitudinally, we advise you to exclude side limiters completely, since it is possible to use mobile reference stops on the extension fence itself to position the piece to be worked. (The extension fence is provided with 4 mobile stops with positioning screws, stop screw and extension fence clamping device).

LONGITUDINAL POSITION OF EXTENSION FENCE:

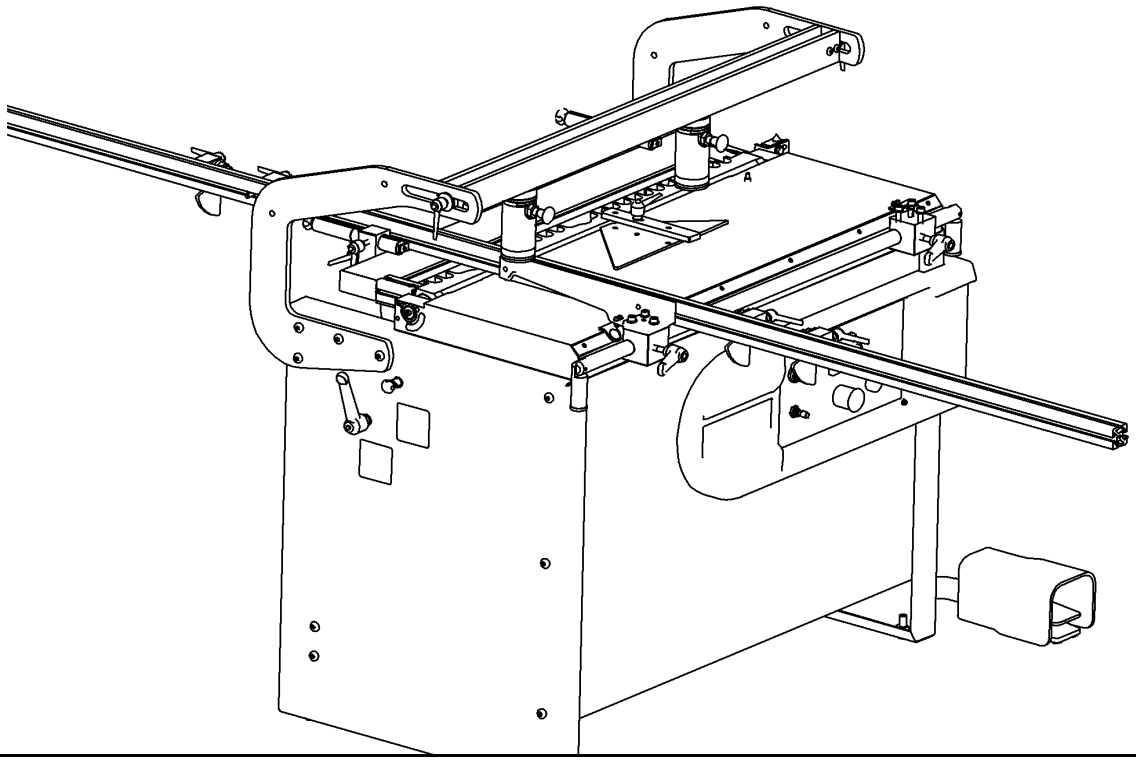
- Unfasten the appropriate handles and turn side limiters over to bring them out of the table, making sure they are under the working table.
- Once the working table has been cleared, position the extension fence against the back stops and fasten it with the apposite screws.
- After positioning the extension fence longitudinally, by means of stop screw on the fence itself, use back stops to find boring line parallel and distance between extension fence and drills line with drills height handle.
- Lock the fence into position and the fence is now positioned correctly. By using the mobile stops it is now possible to bore sections or repeat set of holes on long pieces.
- Add a suitable support for the fence and the board to be bored (i.e. a stand)



TRANSVERSAL POSITION OF EXTENSION FENCE:

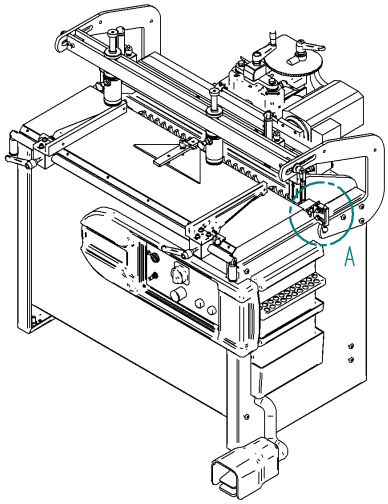
To use the extension fence transversely, you have to fasten the fence to the side limiter with the apposite screws provided.
Follow this procedure:

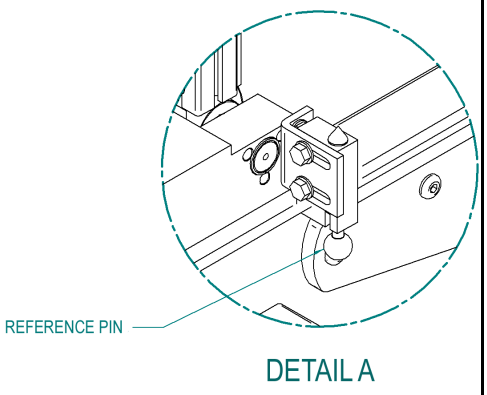
- Position the extension fence along the inner side of the side limiter and lock it into position with the stop screw on the extension fence itself.
- Once the extension fence has been positioned, exclude, if necessary, the other side limiter.
- It is now possible to use the mobile stops to co-ordinate the relative positions of the parts to be bored on long pieces.
- Add a suitable support (i.e. a stand) for the fence and the piece to be bored.



16.8 HOW TO USE REFERENCE PIN FOR LINE BORING ON LARGE PIECES (optional)

As it can be complicated to use the extension fence to bore large pieces, our machines comes with a reference pin. This reference pin can be used for line boring on a large wood piece with higher axial distance between first and last drill than the one obtainable with this type of boring machine. The reference pin is aligned with the drills axis and it fits into a slot under the machine table once the first series of holes has been bored. To continue boring operations, the reference pin can be used once again by turning the knob to unlock the spring that allows the reference pin to come out. To make it possible for another series of holes to be bored, the reference pin has to be inserted into one of the holes that have just been bored.





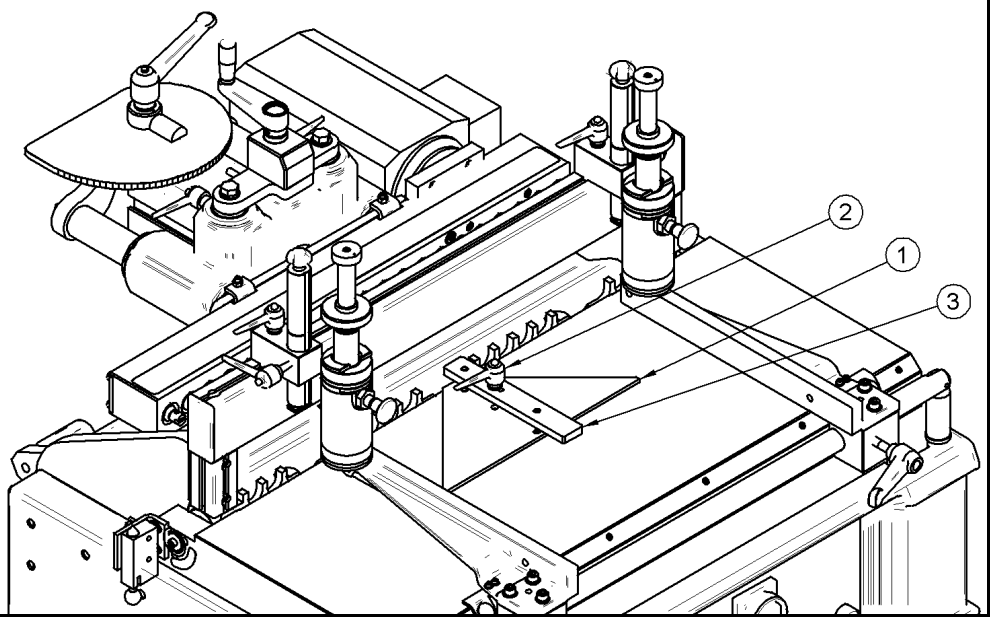
16.9 HOW TO USE TRIANGULAR FENCE FOR 45° FRAMES (optional)

45° triangle can be very useful to manufacture 45°/45° frames very rapidly. Fasten the triangle on the table in reference holes and clamp it in M8 central hole with the lever (2). In this way it is possible to lean 45-degree pieces to be bored and to join them with “dowel” wooden stakes. Machine spindlehead must be set at 90°. When position is correct, the hold down clamp is over to piece to be worked. Proceed as in a standard working cycle: press the control pedal to start the cycle and release the pedal at the end of the cycle. Repeat the procedure on both sides of the triangle to obtain two specular frame pieces ready to be joined.

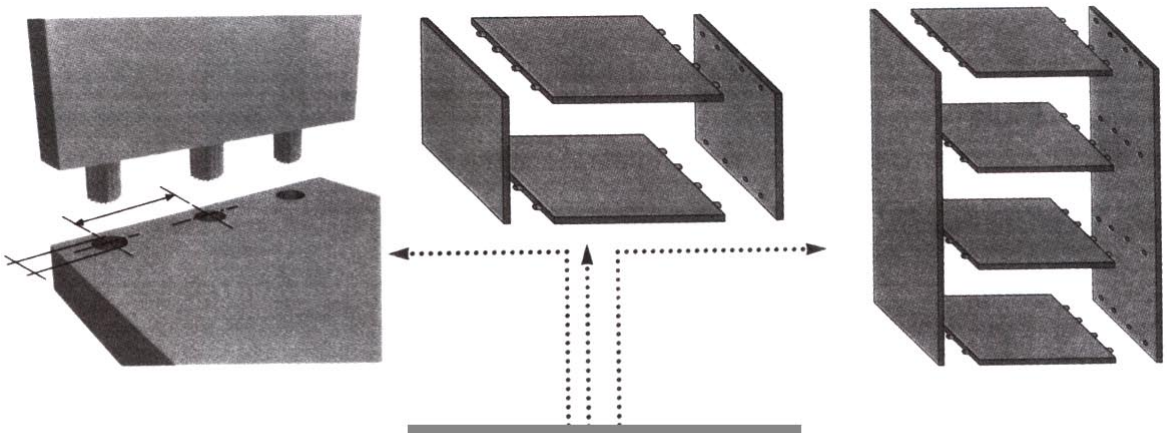
HOW TO USE CENTRAL SPLINE FOR STRAIGHT 90° FRAMES (optional)

The spline is used to combine two pieces having 90°-angle sides (used mainly to make straight frames rapidly)

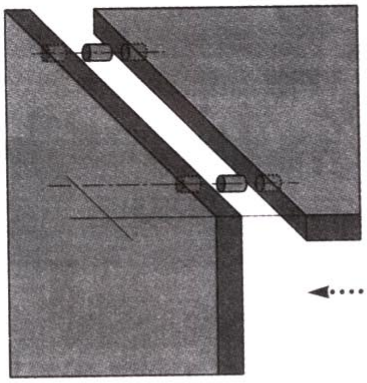
- Fasten the spline (3) in the reference holes on the working table and fasten it with the lever (2).
- Position the pieces to be worked along the spline. It is now possible to start boring operations to assemble frames with “dowel” wooden stakes.
- For a correct position the spindlehead must be at a 90° angle and the hold down clamp must be above the piece to be bored. Proceed as in a standard working cycle: press the control pedal to start the cycle and release the pedal at the end of the cycle. Repeat the procedure for both sides of the spline to obtain the two bored parts of the frame ready to be joined.



16.10 WOODWORKING EXAMPLES

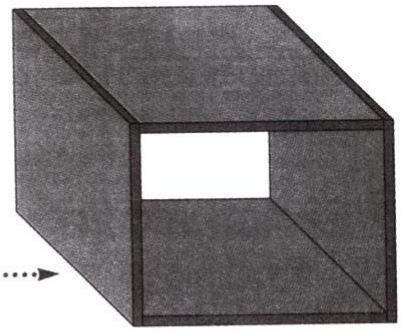


EXAMPLES OF HOW TO COMBINE PIECES PREPARED WITH OUR BORING MACHINE.

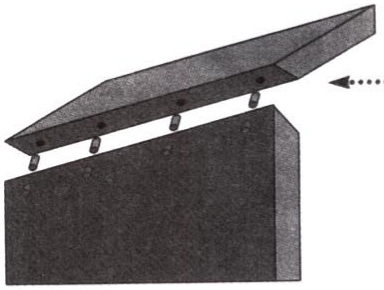


PIECES COMBINATION

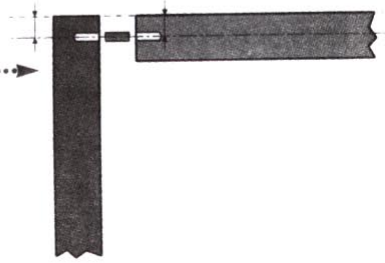
PIECES ASSEMBLY



COMBINATION OF PIECES WITH ANGLES RANGING FROM 0° TO 90°



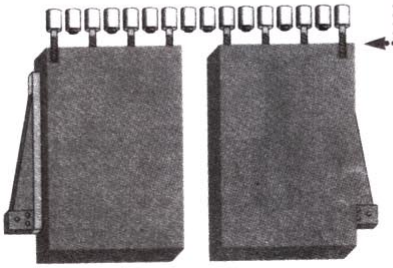
0° - 90° ASSEMBLY

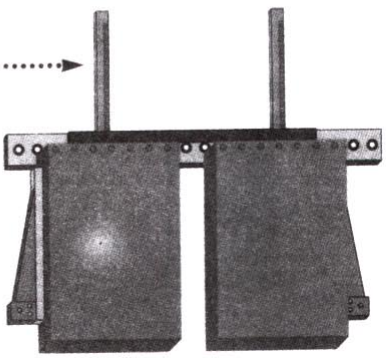


SIMULTANEOUS BORING OF TWO SPECULAR BOARDS

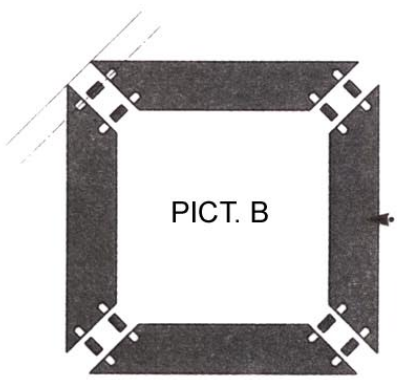
HORIZONTAL BORING OF PANELS SIDES WITH HEAD AT A 0° ANGLE

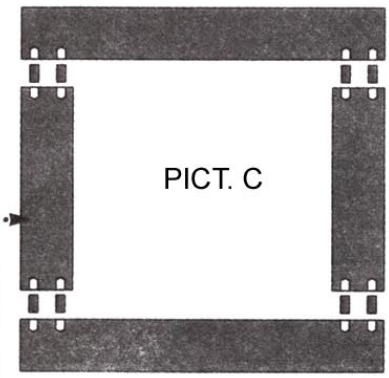
LONG PANEL BORING FOR SHELVES POSITIONING

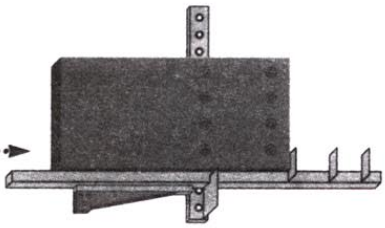




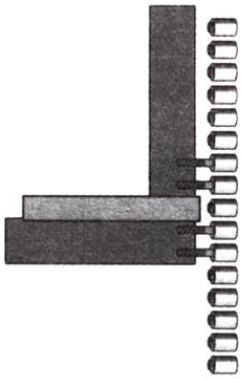
PICT. A



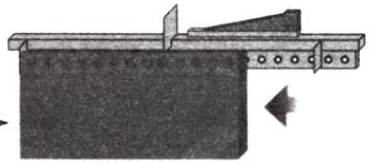




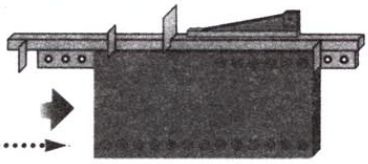
EXAMPLES OF HOW TO COMBINE PIECES FOR FRAMES AT 0° AND AT 45°



LONG PANEL BORED WITH EXTENSION FENCE WITH PERPENDICULAR LINES OF HOLES

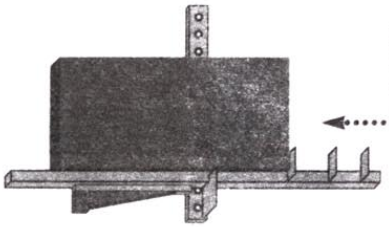


HOW TO USE STANDARD MEASURE TO BORE TWO PIECES SIMULTANEOUSLY FOR A 0° -90° FRAME

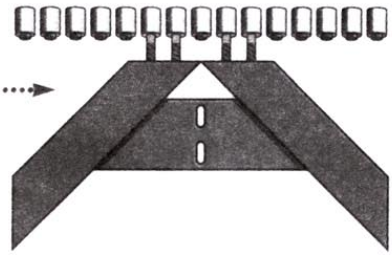


ANOTHER EXAMPLE OF HOW TO USE EXTENSION FENCE TO BORE A SET OF HOLES ALONG THE LONG SIDE

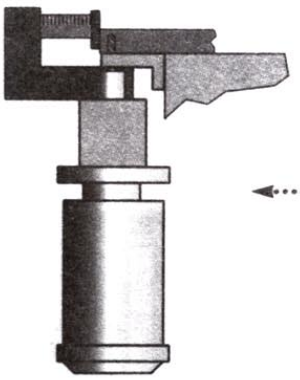
HOW TO BORE HOLES FOR HINGE SLOT



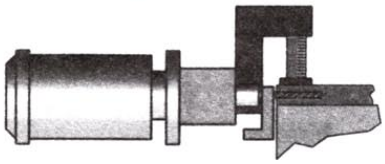
HOW TO USE 45° TRIANGLE TO BORE SIMULTANEOUSLY 45° -45° FRAME PIECES TO BE COMBINED

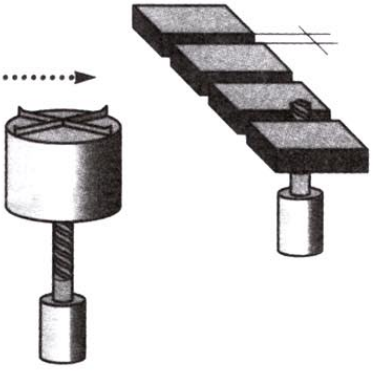


BORING OPERATION TO MAKE HINGE HOLES WITH DRILLS HAVING A DIAMETER RANGING FROM 20mm TO A MAXIMUM OF 33mm MUST TAKE PLACE OUTSIDE THE RACK (40mm from the zero for maximum diameter)



0° AND 90° BORING





17 HOW TO START THE MACHINE

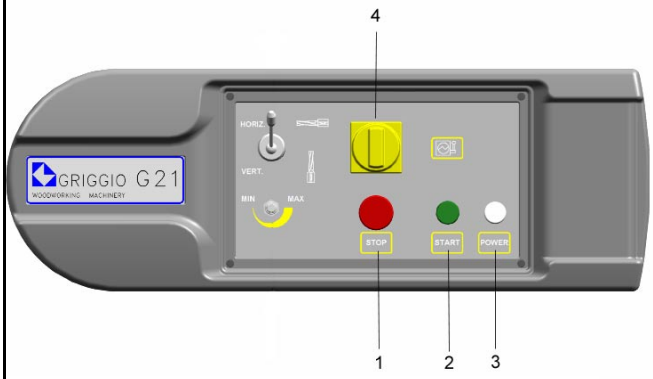
The operator's site and the control board are located in front of the electrical control panel of the machine.

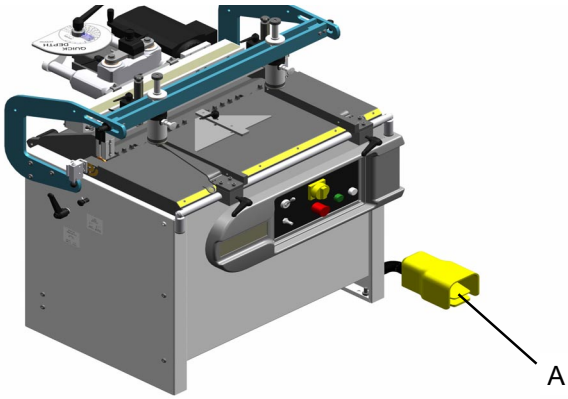
17.1 WORKING CYCLE

After having programmed the machine, follow the instructions given in the following paragraph to start the working cycle:

1) Turn the main switch (4), set it to position 1 and press MOTOR button (2). The corresponding light will light up and the machine is ready to start the working cycle.
2) Press the pedal (A); the spindles will turn, the head will progress while the hold down clamps will block the piece.
3) If the pedal is released, the head will return in its initial position and the spindles will stop.
4) Hold down clamps will release the block

Should you need to interrupt the working cycle, press the emergency pushbutton (1)





18. MAINTENANCE

Adequate servicing is a fundamental factor in guaranteeing longer life to the machine and to keep the machine itself in good working order.

All maintenance operations must be carried out while the machine is switched off.
Always wear protective gloves and goggles.

CAUTION – SLIPPING DANGER!
While cleaning the working area, mind working scraps and liquids on the floor around the machine, since they might cause the operator to slip.

18.1 MACHINE CLEANING (DAILY)

The machine and the working area must be kept clean from wood scraps or any other object that might hamper the working cycle or might prevent the operator from easily reaching the machine itself. The machine must be cleaned daily. Make sure that material that is not needed to operate the machine does not accumulate on the machine itself, thus preventing the machine from functioning safely and jeopardising the operator during the every day working cycle.

18.2 RAILS CLEANING (WEEKLY)

Rails and slide shafts must be kept clean from working scraps since they might hamper movements of the machine and damage its performance. Do not use detergents or lubricants.
ELECTRICAL CABLES CHECK:
Check electrical cables condition. Make sure they are not worn out or abraded.

18.3 KINEMATICS CLEANING AND CHECKS (MONTHLY)

Regularly check bearings and gears acoustically and visually inspect the spindlehead and all moving parts of the machine (sliding shafts, overturning piston shaft etc.)

18.4 EXTRAORDINARY MAINTENANCE

- Make sure electrical system is safe.
- Check clamping of mechanical components.
- Check lubricating oil level in air-filtering unit and refill if necessary.
- Make sure the machine is lubricated regularly.
- Check air pressure. Line feed must be at 6 bar.
- Check condensate level and compressed air impurities settling in the transparent sump in the air-purification system.
- Make sure spindlehead is lubricated. We suggest that you use Castrol WP30 grease, Schell Alvania EP2 grease, Agip grease or other similar lubricants.

19. COMMON FAILURES - CAUSES AND SOLUTIONS

Some failure causes can be eliminated by the operator himself, while others failures need qualified personnel intervention. Here is a list of the most common failures, along with the correspondent service intervention.

CAUTION: Before carrying out any intervention you must strictly follow the cutting-off procedure described in chapter 16.

19.1 DRILLS ARE NOT TURNING

POSSIBLE CAUSE	WHAT TO DO
A. The engine is not running	- Press the engine operational button - Release emergency pushbutton and check fuses - Check air pressure (to switch pressure switch on)
B. The engine is burnt out	- Replace the engine

19.2 ENGINE IS RUNNING BUT DRILLS ARE NOT TURNING

POSSIBLE CAUSE	WHAT TO DO
A. Possible breakage in -gears -bearings	-replace them (call technical service)

19.3 IL FORO NON E' PRECISO

POSSIBLE CAUSE	WHAT TO DO
A. Drill is not clamped correctly	-Check clamping. If it is correct call service intervention.
B. Drills are worn	- Replace or call technical service
C. Piece to be worked is not clamped correctly	- Check hold down clamps, hold down clamps gaskets and working pressure

20. FAILURES THAT MIGHT OCCUR DURING MACHINE WORKING CYCLE

20.1 DRILLS LEAVING SCORCH MARKS

This problem might occur whenever the piece is not set at a 90° angle or whenever drills are worn. Drills might also be turning in the opposite direction.

20.2 BORED PIECES ARE NOT SET AT A 90° ANGLE TO TABLE

This problem might be due to the fact that the drills have not been set at a 90° angle to the table. Check angle of table limiters to rack as well as parallelism of drills line to table.

20.3 HEAD CANNOT ROTATE PROPERLY

If boring unit finds it difficult to reach other positions or cannot reach other positions altogether, check hinge and shaft of overturning pneumatic piston.

20.4 HOLD DOWN CLAMPS CANNOT CLAMP WOOD PIECE

If hold down clamps cannot clamp pieces, check air pressure and connection tubes.

To solve these problems, we suggest that you contact GRIGGIO S.p.A. Post-sale Assistance Service or your local dealer.

21. A. NOISE LEVEL

Assuming the machine is functioning properly and that tool balancing and sharpness are correct, noise emissions can vary according to the material being worked, to drills diameter and to boring depth. Length of time operators are expected to stay close to the machine can vary over the 8-hour working day.
Other factors play a role in determining the exposition level, such as surrounding environment and other sources of noise as well as the presence of other machines nearby. We advise you to inform operators about risks resulting from a long exposition to noise and, if necessary, provide them with suitable individual protection devices.
The acoustic pressure level detected with a class-1 integrating noise meter at operator's working position is 76.1dB (A).

This measurement has been carried out in compliance with ISO 3745 standard. During the measurement, the machine was functioning at steady state as far as pressure and speed were concerned, and was drilling a wooden shaving panel with PVC covering.
The measurement has been carried out at a 1.5-m height in front of the machine at the operator's working location.
The following reference measurements have been obtained by following the same procedure:

Acoustic pressure level in Atm.
dB(A):78.3

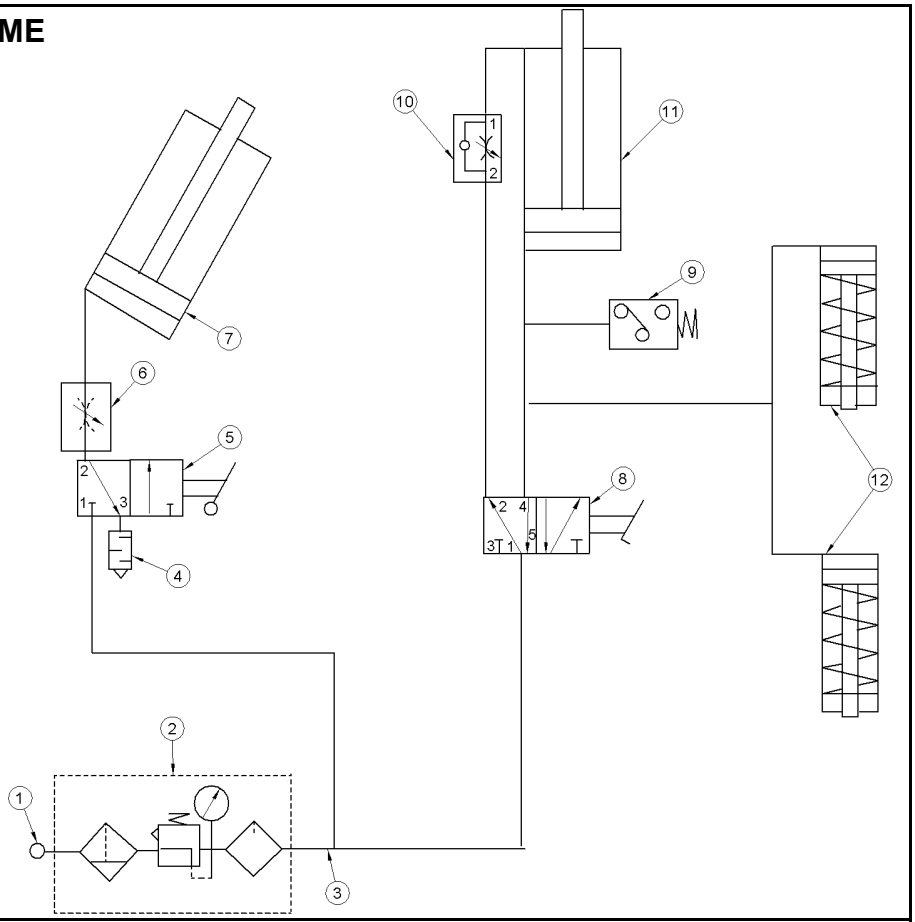
Acoustic power level
dB(A):93.3

21. B. DUST EMISSIONS

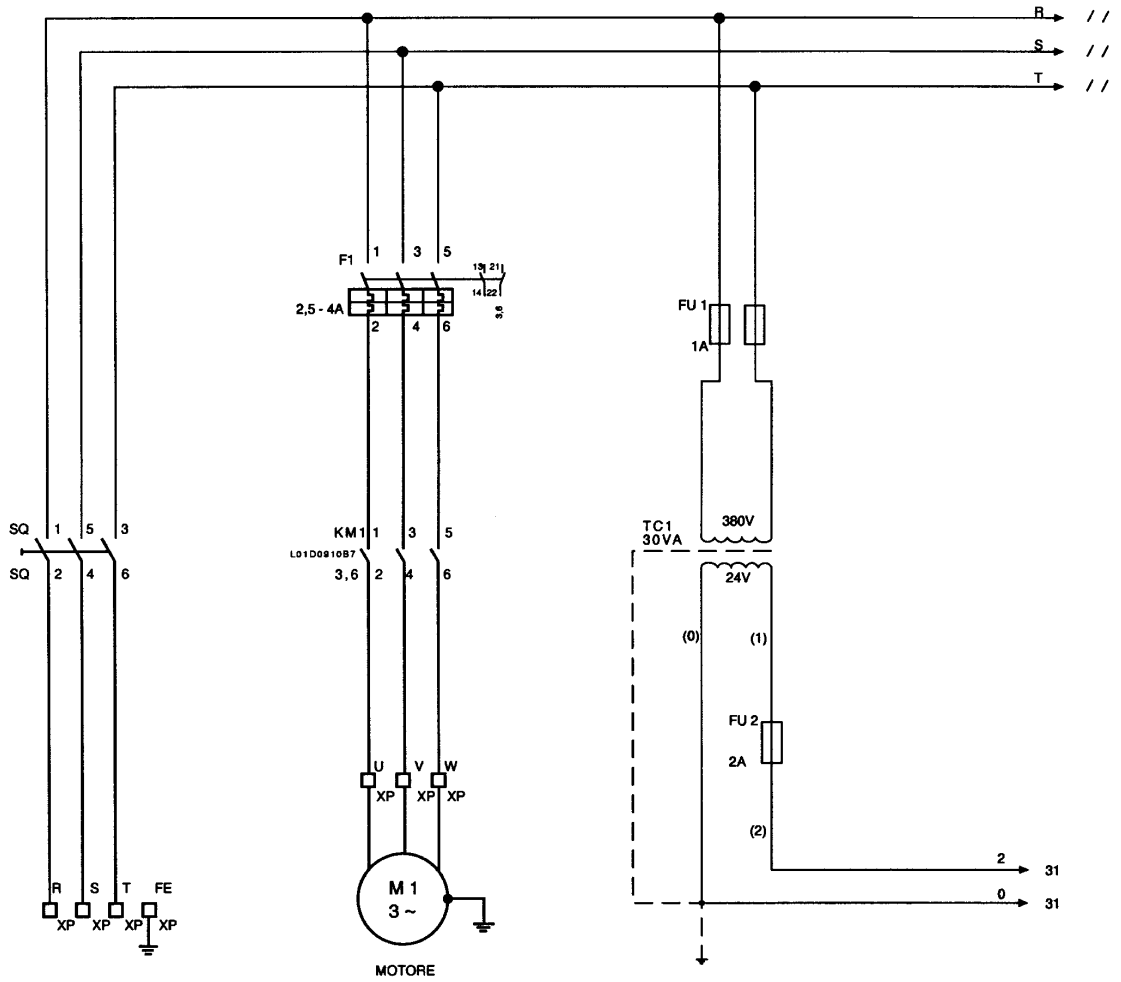
These are the results of a test carried out to determine the level of dust emissions during a non-stop one-hour working span, while a 22 mm-thick fir panel with a PVC covering was being drilled.
Dust emission amounted to 13.9 mg/N cu.m at operator's working location, which is at a 1.5-m height in front of the machine.

22. PNEUMATIC SCHEME

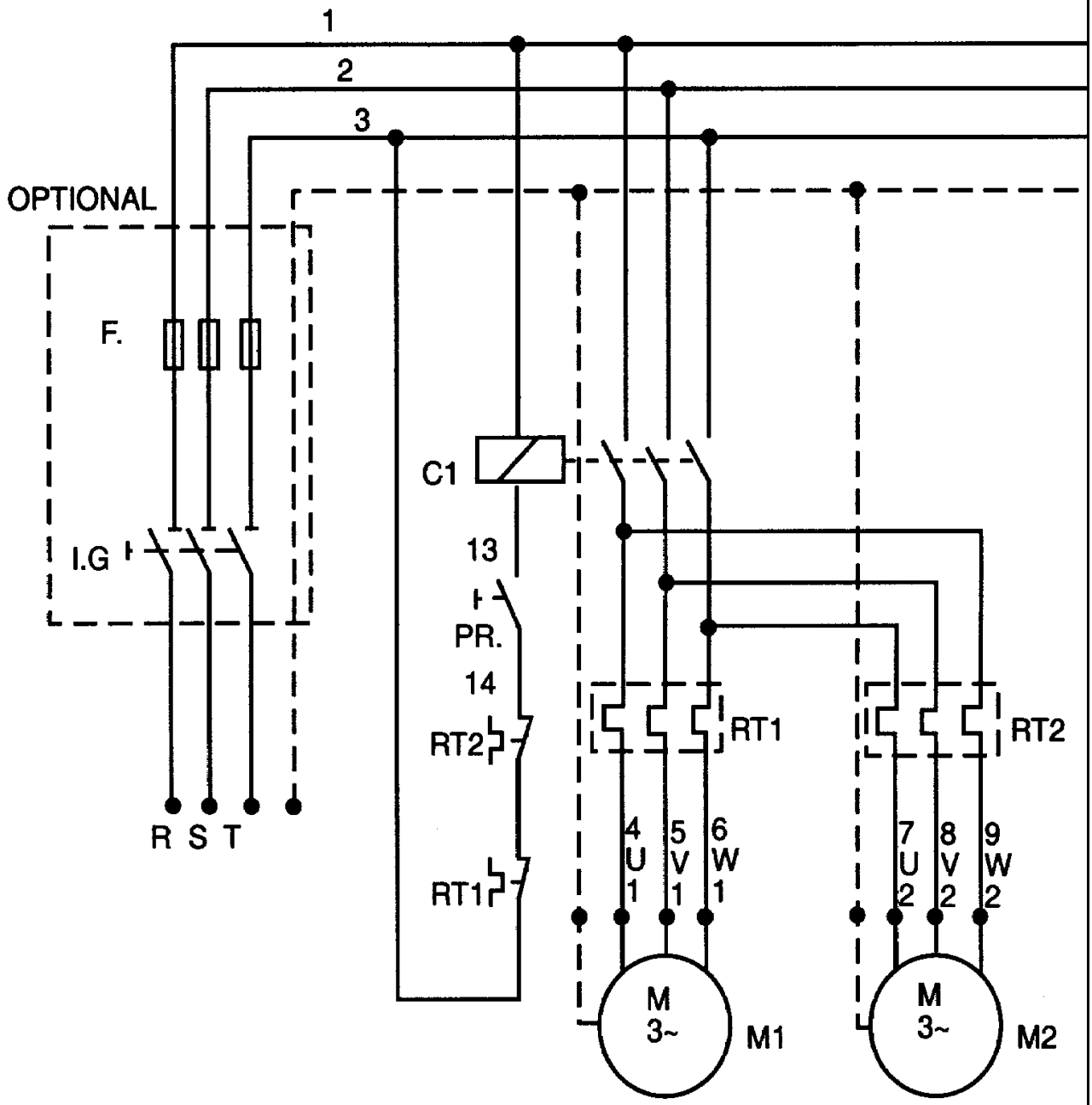
1) ¼" Male quick-change
2) G ¼" lubrication-filter-regulator unit
3) ¼" Wye
4) Wire muffler
5) Overturning lever Ø 30
6) G ¼"Flux Reg.
7) Overturning cylinder
8) 5/2 Pedal G ¼"
9) 1/8" Pressure switch
10) G ¼"Flux reg.
11) Drill feed speed
12) Clamping clamps



23A. ELECTRICAL SCHEME FOR GF21 AND GF27 (WITH ONE ENGINE)



23B. ELECTRICAL SCHEME FOR GF35 (WITH TWO ENGINES)



I.G.: main switch;
RT ½: temperature relay;
C1/2: engine contactor;
PR: air pressure;
M1/2: driving shaft rotation;
F: main fuse.

24. MACHINE IS PUT OUT OF COMMISSION

If the machine has to be put out of commission, you will have to follow the following instructions strictly so as to guarantee people's safety and to protect the environment around the machine.
Therefore, after disconnecting the machine it is advisable to:

- Disassemble drills and put them in a suitable container, where they will be stored and protected from damage.
- Disassemble electrical, pneumatic and hydraulic components so that they can be re-used after an inspection or an overhaul.
- Empty oil out of hydraulic gearcase without spilling it into the environment.
- Disassemble all metallic components in the machine and divide them into separate groups according to material.
- Call a firm specialised in material regeneration and disposal (solid and liquid materials).

25. GUARANTEE CERTIFICATE

This machine has been manufactured in compliance with technological and safety standards and has undergone a test on the manufacturer's premises before being shipped.
GRIGGIO S.p.A. guarantees that the machine is in good working order and that it is a quality product according to law requirements, for a 12-month period. The guarantee is not valid in case of improper usage and servicing that do not comply with the regulations contained in this handbook and in case of adjustments and modifications that have not been approved by the manufacturer. Guarantee terms concerning the machine's working order are valid provided all indications given in this

USAGE AND MAINTENANCE HANDBOOK

are complied with.

Defective pieces will be replaced free of charge only after having ascertained that the machine has been used correctly.
Complaints and service interventions covered by guarantee will only be accepted upon presentation of the machine serial number engraved on the identification plate.
Upon receiving the machine, the purchaser must make sure that packages are whole and undamaged.
Unless otherwise agreed, the manufacturer is not responsible for damages caused to the machine during shipment.
Should the packages be visibly damaged, we advise you to contact the shipment company immediately.
Our company will be available to provide all assistance required.

GUARANTEE AND ASCERTAINMENT COUPON

Type……..……Identification number……...……

Name……..

Address……..

Postcode……...……...Town……

Date of purchase…….Dealer…..……

Owner's signature

……..

The owner of the machine hereby declares that he accepts the terms of guarantee and that he has ascertained that the machine is in perfect working order.

Sale and Technical Service

GRIGGIO S.p.A

via Ca' Brion, 40 - 35011 Reschigliano (PD) ITALY

Tel. 049/9200920 Fax 049/9201433

http://www.griggio.com E-Mail:info@griggio.com

26. SPARE PARTS CATALOGUE

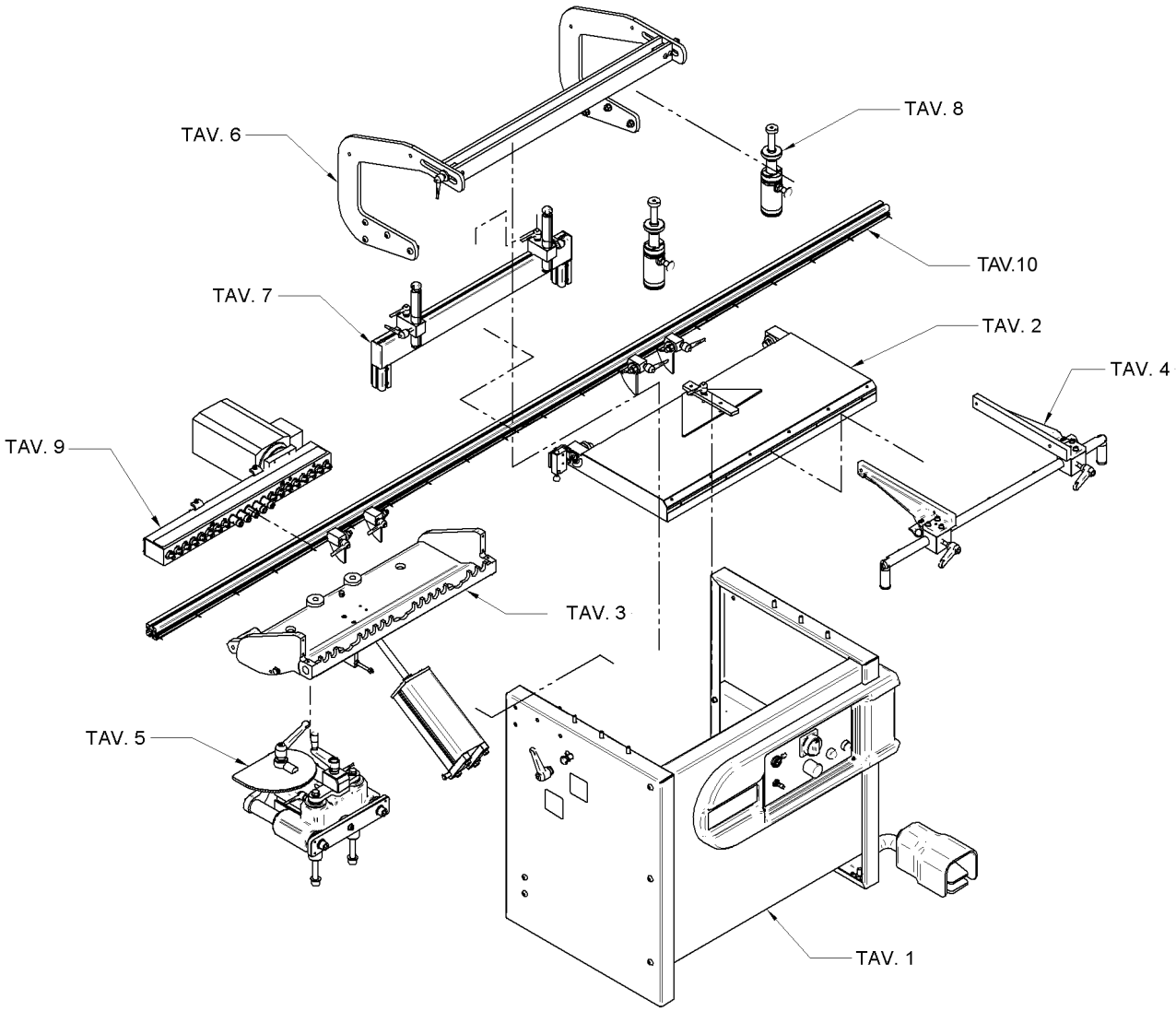


TABLE 1 FRAME

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36200084	36200084	Frame Left Side	1
2	36222147	36222147	Clamping Block	1
3	00000117	00000117	D-En M 12	4
4	00018402	00018402	V-Te M 10 X 25	6
5	36222104	36222104	Electrical Box G Version	1
6	36222122	36222122	Clamping Plate	1
7	36222123	36222123	45° Threaded Bush	1
8	00018602	00018602	V-Tbei M 10 X 20	10
9	00000109	00000109	D-Es M 8	1
10	00004047	00004047	Gn 605 Screw M8 X 18 Type A	1
11	49900045	49900045	Supporting Plate	1
12	76200030	76200030	Rod With Clamping Slot Mod G	1
13	36200080	36700080	Patterned Front Cover	1
14	36222119	36222119	Vacuum Plastic Front Cover	1
15	00018421	00018421	V-Tspei M5x10	12
16	36222124	36222124	Clamping Hexagon	1
17	36200082	36200082	Frame Right Side	1
18	00018522	00018522	R-Cild M 10	6
19	36222120	36222120	Block Spacer	1
20	36222121	36222121	45° Stop Pin	1
21	00018523	00018523	R-Cild M 12	1
22	00018403	00018403	V-Te M 12x35	4
23	00015224	00015224	Flow Control G1-4 Pnmx Cod6.01.14n	1
24	00003947	00003947	Release Lever Krp-100 M12x60	1
25	00018501	00018501	D-En M 8	2
26	36222117	36222117	Plate Version G	1
27	00015223	00015223	Cover Lever D30 Pnmx Cod228.32.5-2-3vie	1
28	36200086	36700086	Table Back Cross Beam	1
29	36000087	36000087	Air Unit Plate	1
30	00000017	00000017	Galvan. Steel Washer Uni-6592, Ø Nom. Mm 5	4
31	00018297	00018297	Galvanised Tcbei-Screw M5x12	4
32	00018531	00018531	Deb M 4	2
33	00018290	00018290	Vcce-5931 M 4 X 12	2
34	00003104	00003104	Boteco 732-25 M8x16	1
35	0003303	0003303	Seeger Ring E 15	2
36	36222118	36222118	Clamping Unclamping Plate Version G	1
37	OPTIONAL	OPTIONAL	Drill Holder	1
38	36222105	36222105	Control Board Sheet	1
39	00018521	00018521	R-Cild M 8	2
40	00018307	00018307	Vcce-5931 M 8x16	2
41	36222116	36222116	Overturning Plate Version G	1

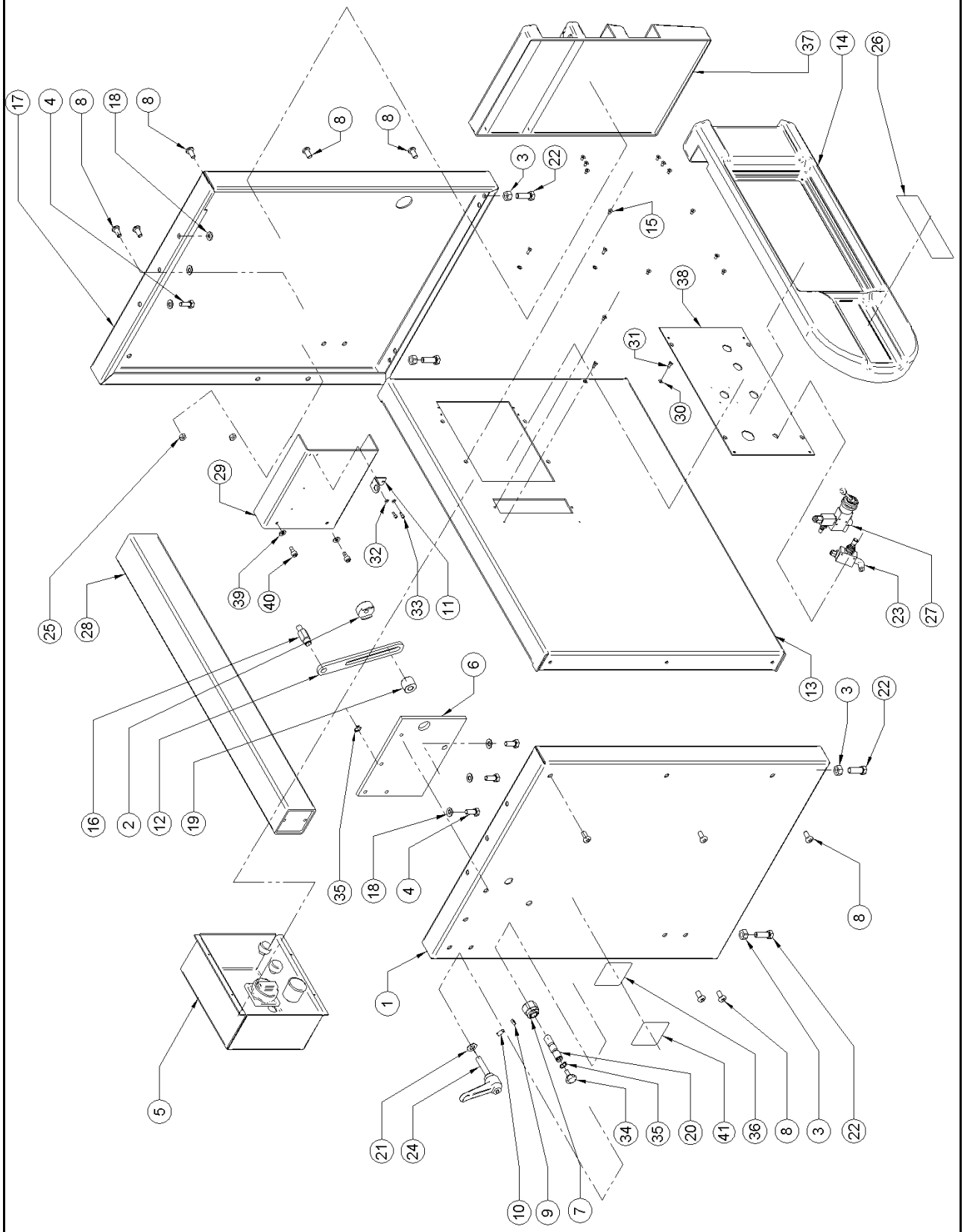

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TABLE 2 MACHINE TABLE

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36222017	36722017	Table	1
2	36222019	36722019	Millimetrical scale	1
3	0003924	0003924	Release lever 563-65 M8 L16	1
4	36000021	36000021	Central spline	1
5	36000022	36000022	45° plate	1
6	36000112	36000112	Rotation pin	1
7	36001016	36001016	Bronze shimming ring	2
8	00004238	00004238	p-st 8 x 16 casehardened	4
9	00018521	00018521	r-cild M 8	5
10	00005045	00005045	plain bearing PAP 2530P10	2
11	49900017	49900017	pin spring	1
12	00005103	00005103	self-tapping screw 3.9x9.5 galvanised 6955	6
13	36222126	36222126	index disk	1
14	45400052	45400052	Degree plate	1
15	00150909	00150909	G-EICO M 8x20	6
16	49900014	49900014	Reference Pin	1
17	49900015	49900015	Reference Pin block	1
18	00003923	00003923	Boteco ball knob Art. 100-20 M5	1
19	00004303	00004303	Elastic pin Ø 4x14 6873	1
20	49900016	49900016	Reference Pin square	1
21	00018405	00018405	V-te M 8x16	4
22	36222125	36222125	Hollow rotation pin	1
23	00018302	00018302	Round-headed screw M6x10	1

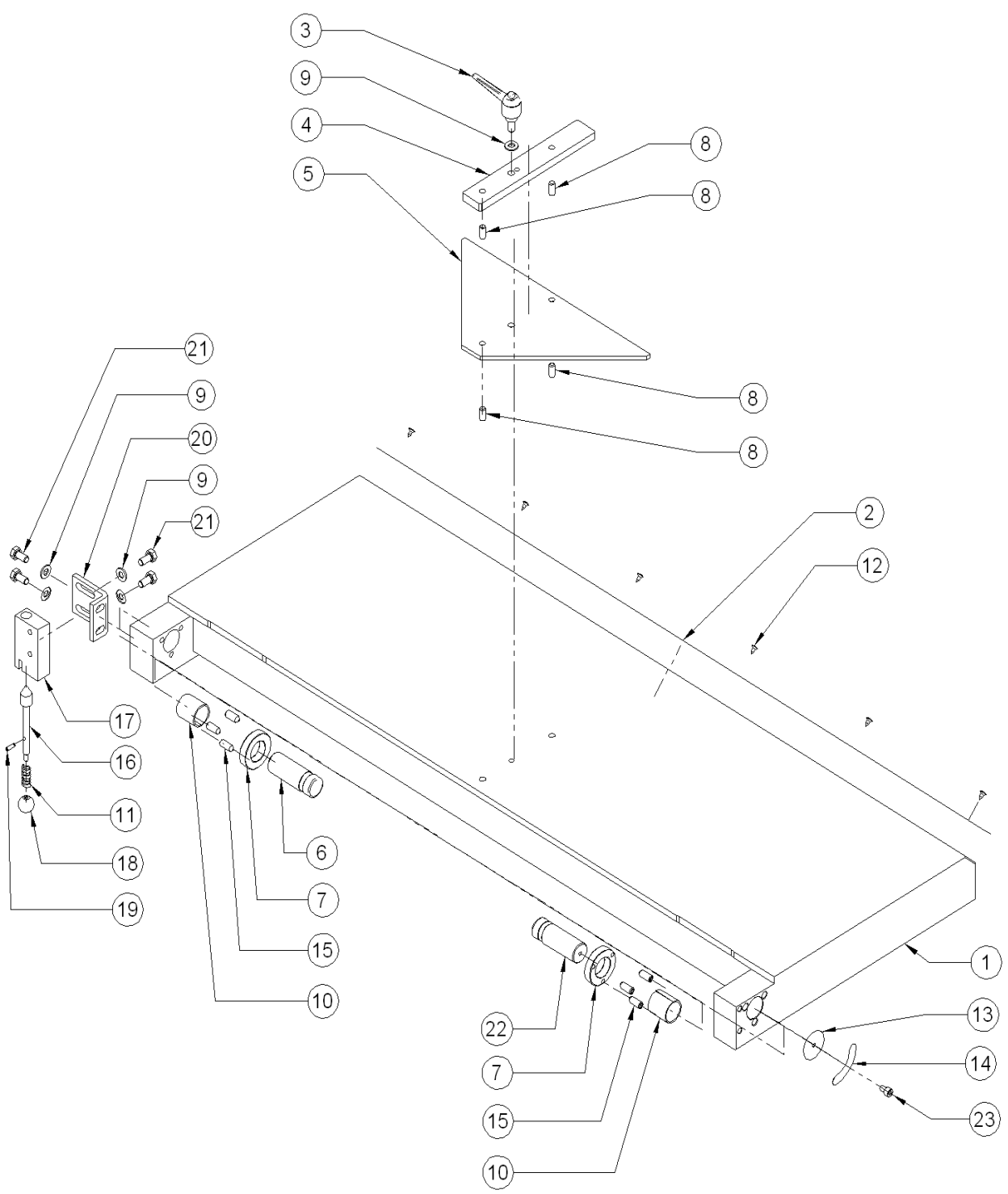
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TABLE 3 RACK

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36200005	36700005	Rack	1
2	00018608	00018608	V-tbei M 8X18	2
3	00003940	00003940	Boteco Sleeve 775-38 M12	1
4	00018307	00018307	V-tcei 8X16	10
5	36222148	36222148	90° Pawl	1
6	36222129	36222129	Hexagon stop	1
7	36222127	36222127	90° Stop cylinder screw	1
8	00018311	00018311	V-te M 10x35	4
9	00003305	00003305	A-Ela 12	4
10	00018522	00018522	R-cild M 10	4
11	00150803	00150803	G-EI M 8x10	2
12	00018501	00018501	D-en M 8	2
13	00018405	00018405	V-te M 8x 16	1
14	36222128	36222128	90° Stop screw	1
15	36222129	36222129	Hexagon Stop	1
16	36000105	36000105	Overturning Cylinder Lower pin	1
17	00000169	00000169	Gh-guk M 30x1.5	1
18	00015205	00015205	Overturning cylinder	1
19	36000106	36000106	Overturning Cylinder Upper pin	1
20	7600002	7600002	Cylinder Shaft fork	1
21	36000126	36000126	Threaded bush	1
22	36000125	36000125	Overturning cylinder new flange	1
23	00000117	00000117	D-en M12	1
24	00030507	00030507	V-TCEI M5x20	1
25	36000108	36000108	Overturning cylinder hinge	2
26	00003462	00003462	Oljembrons bearing S20x25x15	1

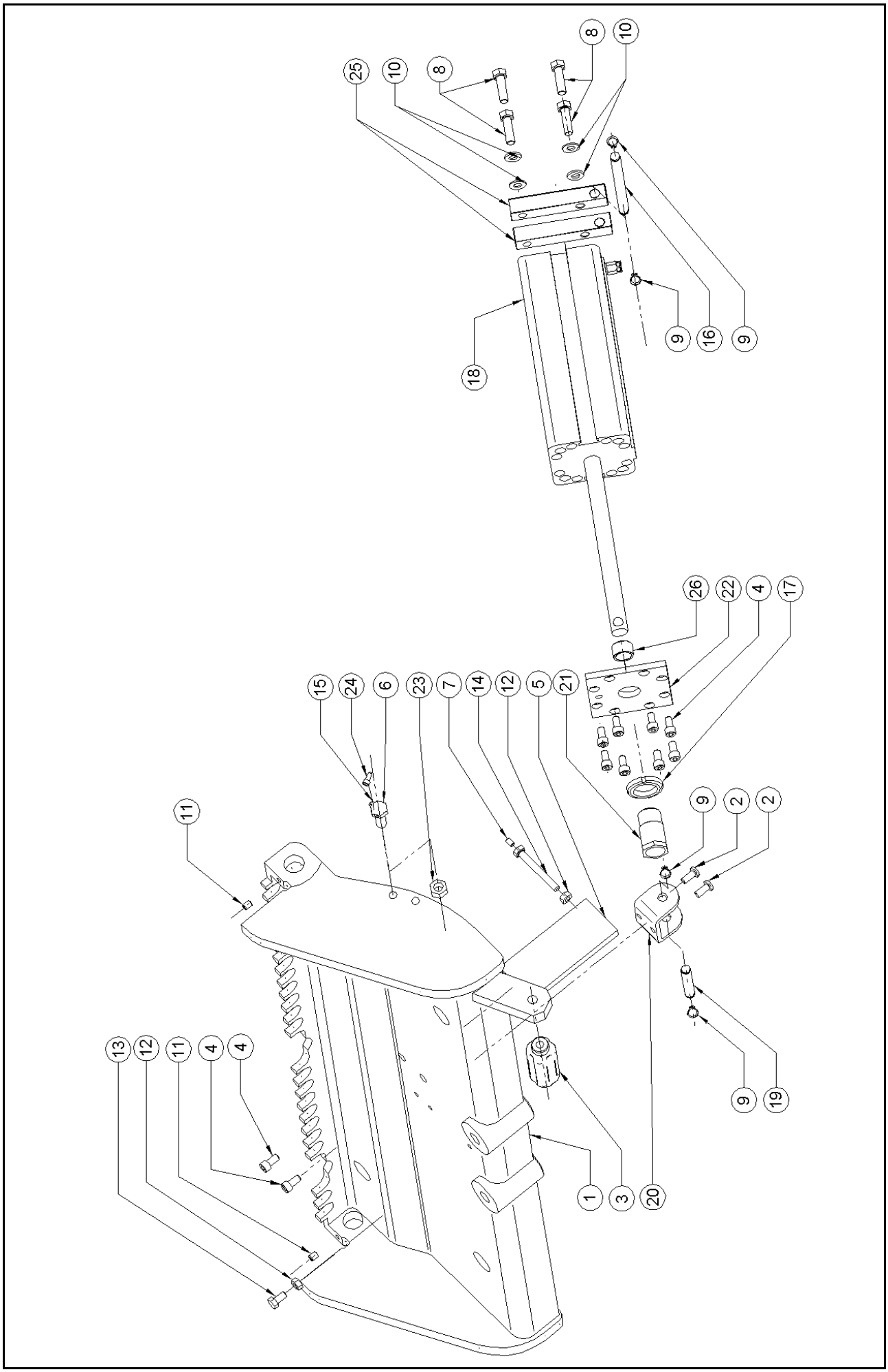
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TABLE 4 LIMITERS

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36222139	36222139	Limiter Unit	2
2	36222134	36722134	Right limiter	1
3	36222136	36222136	Slide rail	1
4	36222135	36222135	Vertical Slide rail	2
5	00018521	00018521	r-cild M 8	6
6	00018531	00018531	DEB M 4	4
7	00018290	00018290	VCCE-5931 M 4 x 12	4
8	36222137	36222137	Left limiter	1
9	00018340	00018340	Socket head screw M8x25	6
10	00003936	00003936	Release lever KRP-80 M10 L30	2
11	00004239	00004239	Sp-K-28744 8x16	2
12	36222131	36222131	Right lens support	1
13	36222132	36222132	Left lens support	1
14	00000035	00000035	Washer with cone-shaped base G shape D12-30 SP 5	2
15	00018325	00018325	Round-headed screw M6x16	2
16	36222142	36222142	Lens D22	2
17	36222141	36222141	Contrast	2
18	00550806	00550806	V-tspei M 10x12	2
19	00018302	00018302	Round-headed screw M6x10	2
20	00018303	00018303	V-tcei M 6x20	5

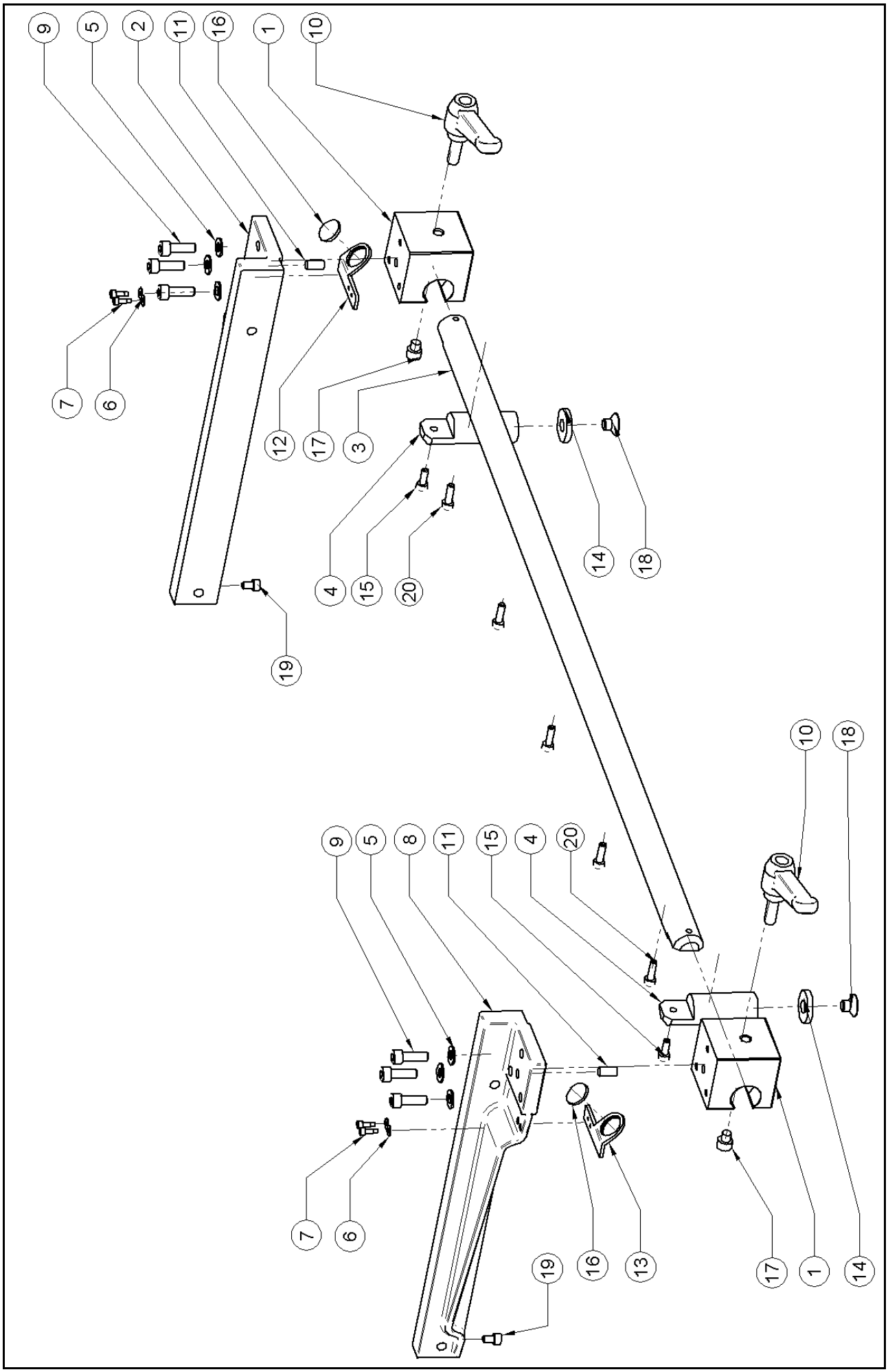
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TABLE 5 SPINDLES UNIT

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36000047	36000047	Spiral stop support	1
2	00018314	00018314	VCCE-5931 M16X40	2
3	36000043	36000043	Spiral washer	1
4	00018524	00018524	r-cild M16	4
5	36000042	36000042	Spiral spigot	1
6	36000045	36000045	Lens support	1
7	00018523	00018523	r-cild M 12	4
8	00018403	00018403	V-te M 12x35	4
9	00018522	00018522	r-cild M 10	1
10	00018313	00018313	VCCE-5931 M 10x110	1
11	36000044	36000044	Plexiglas index	1
12	00003960	00003960	Counter	1
13	00003942	00003942	Botecoplast Lifting crank 216-80	1
14	36222046	36222046	Depth spiral stop	1
15	36222097	36222097	G-type Spiral plate	1
16	00015206	00015206	Drills feed cylinder	1
17	00018315	00018315	VCCE-5931 M 16x100	2
18	36222051	36222051	Cross beam for hoisting screw (G)	1
19	36000050	36000050	Hoisting screw	1
20	36000009	36000009	Head support	1
21	36000048	36000048	Vertical guide shaft	2
22	00003934	00003934	Boteco 522-104 M10	1
23	36000049	36000049	Horizontal slide shaft	2
24	49900048	49900048	Back shaft contrast	2
25	00004380	00004380	s-el 4x26	1
26	36000052	36000052	Head-supporting plate	1
27	36000053	36000053	Rubber washer	1
28	36000111	36000111	Cylinder shaft extension	1
29	36000124	36000124	Spiral washer	1
30	40000003	40000003	Sintered bush	2
31	00000213	00000213	LI-PIA 5X5X10	1
32	00018312	00018312	V-TCEI m 10X60	1
33*	00018455	00018455	G-EI M 5X6	1
34	00018419	00018419	V-tspei M 4x16	1
35	00003456	00003456	Ring INA AS 1730	4
36	00003455	00003455	Bearing INA AXK1730	2
37	00018310	00018310	V-tcei M 8x160	4
38	00003922	00003922	Release lever KRP-63 M8 L20	2
39	00005047	00005047	Plain bearing PAP 4020P10	8
40	00000168	00000168	Self-locking ring nut	1
41	00018521	00018521	r-cild M 8	1
42	00018501	00018501	D-en M 8	1

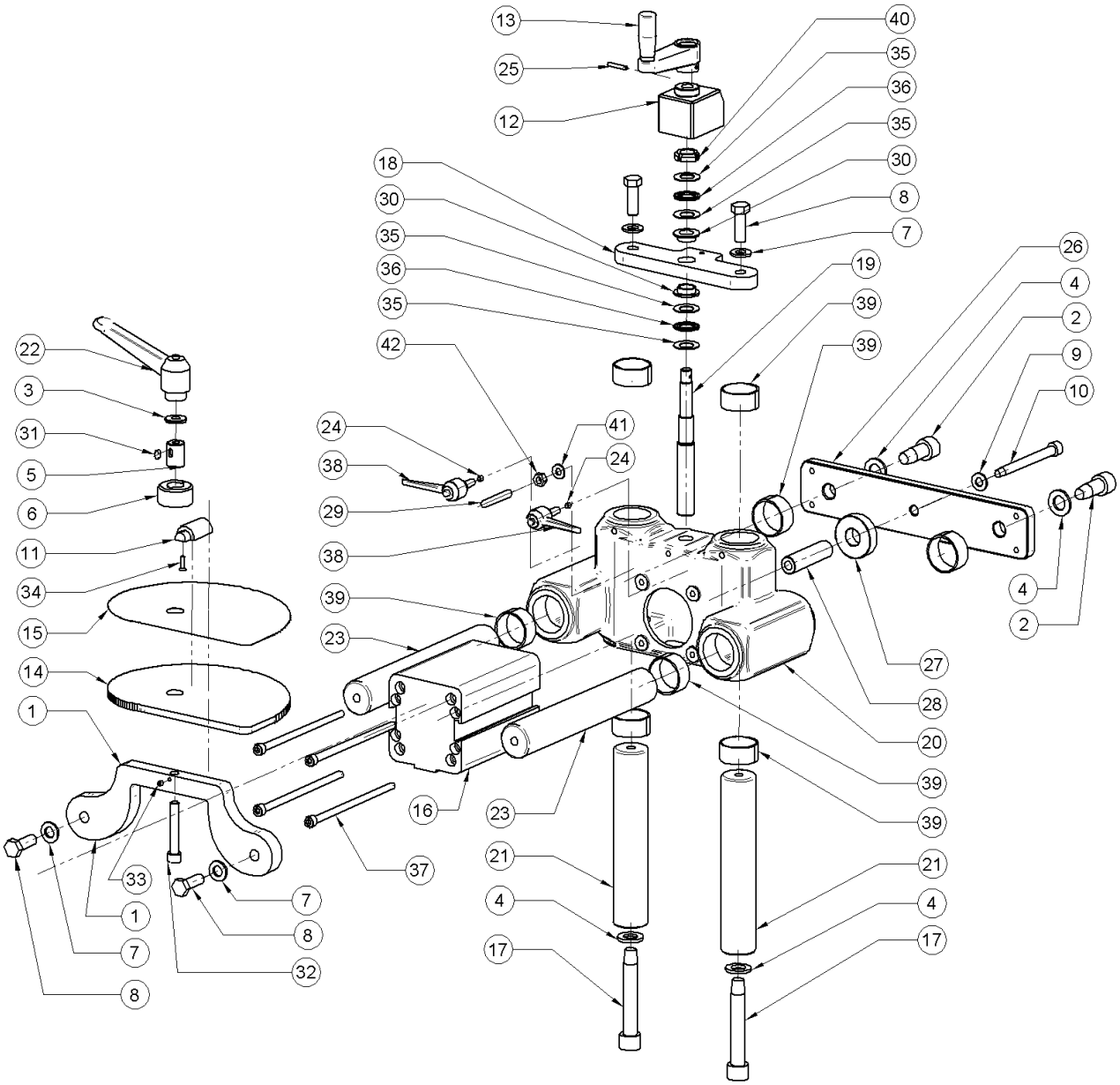
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TABLE 6 HOLD DOWN CLAMPS FRAME

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36200101	36200101	Right and left hold down clamps support	2
2	36200041	36700041	Cross beams	2
3	36000091	36000091	Spacing block	2
4	00018602	00018602	V-tbei M 10x30	8
5	49900051	49900051	Cross beam clamping washer	2
6	00018607	00018607	V-tbei M 8x60	4
7	00003922	00003922	Release lever KRP-63 M8 L20	2
8	00018521	00018521	r-cild M 8	4
9	00018502	00018502	Galvanised D-es M 8	4
10	00018522	00018522	r-cild M 10	4
11	00018503	00018503	D-en M 10	4

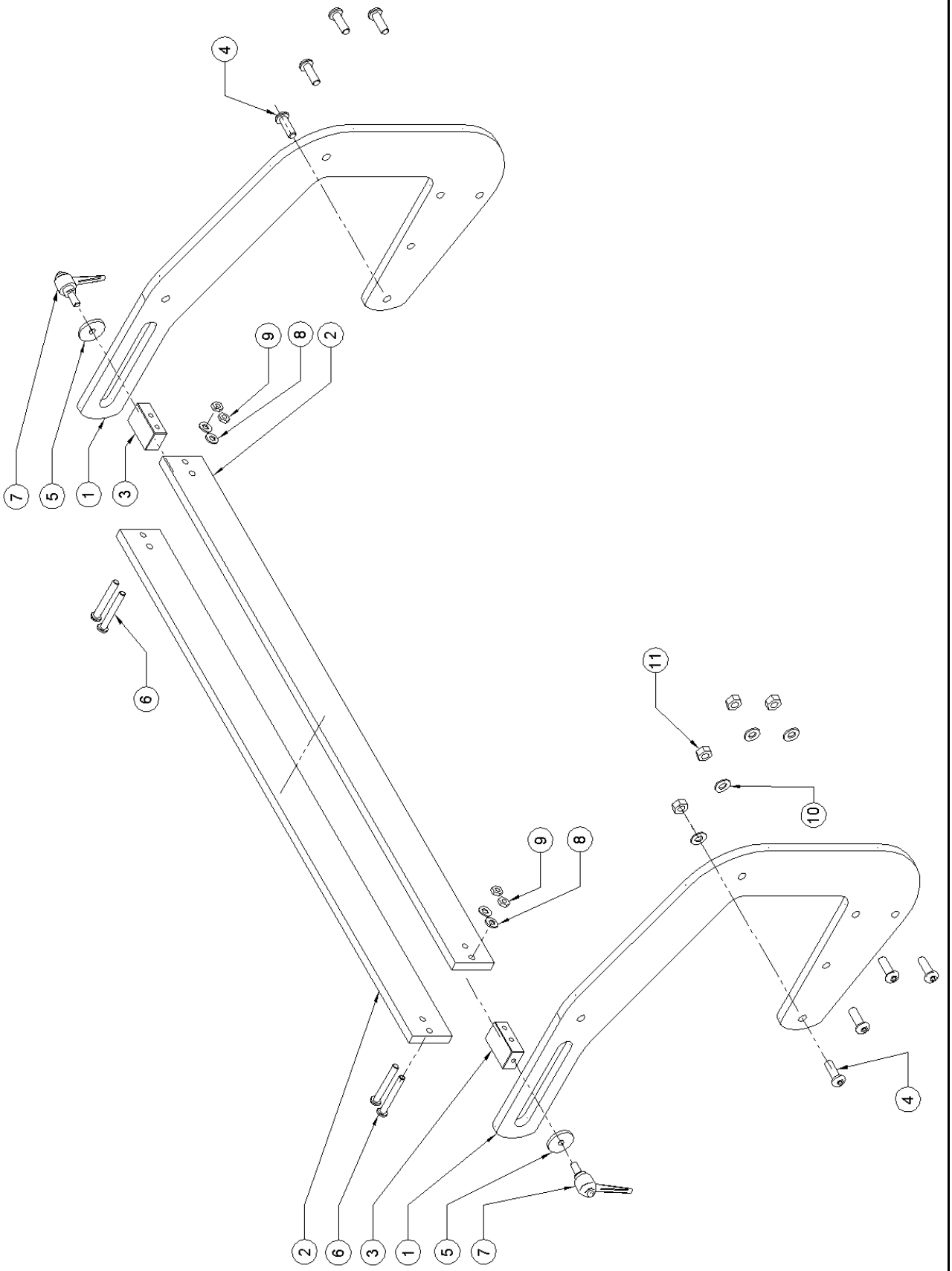
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TABLE 7 BACK STOP

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36222070	36722070	Back stop rail	1
2	36222130	36222130	Extruded thickness	2
3	00003111	00003111	Boteco 732-30 M8 L200	2
4	00004025	00004025	Release lever M8 L50	1
5	36222010	36222010	Back stop Shaft	2
6	00003922	00003922	Release Lever KRP-63 M8 L20	3
7	36000113	36000113	Small block for extension fence	4
8	00018521	00018521	r-cild M 8	2
9	49900070	49900070	Cap 8 80x40 – 0002602	2
10	36222009	36222009	Front Fence shaft	2
11	36000153	36000153	Thickness plate 36000153	2
12	00018327	00018327	V-tcei M 8x35	6
13	36222011	36222011	Right back stop trolley	1
14	36222021	36222021	Stops millimetrical scale	2
15	36222012	36222012	Left back stop trolley	1

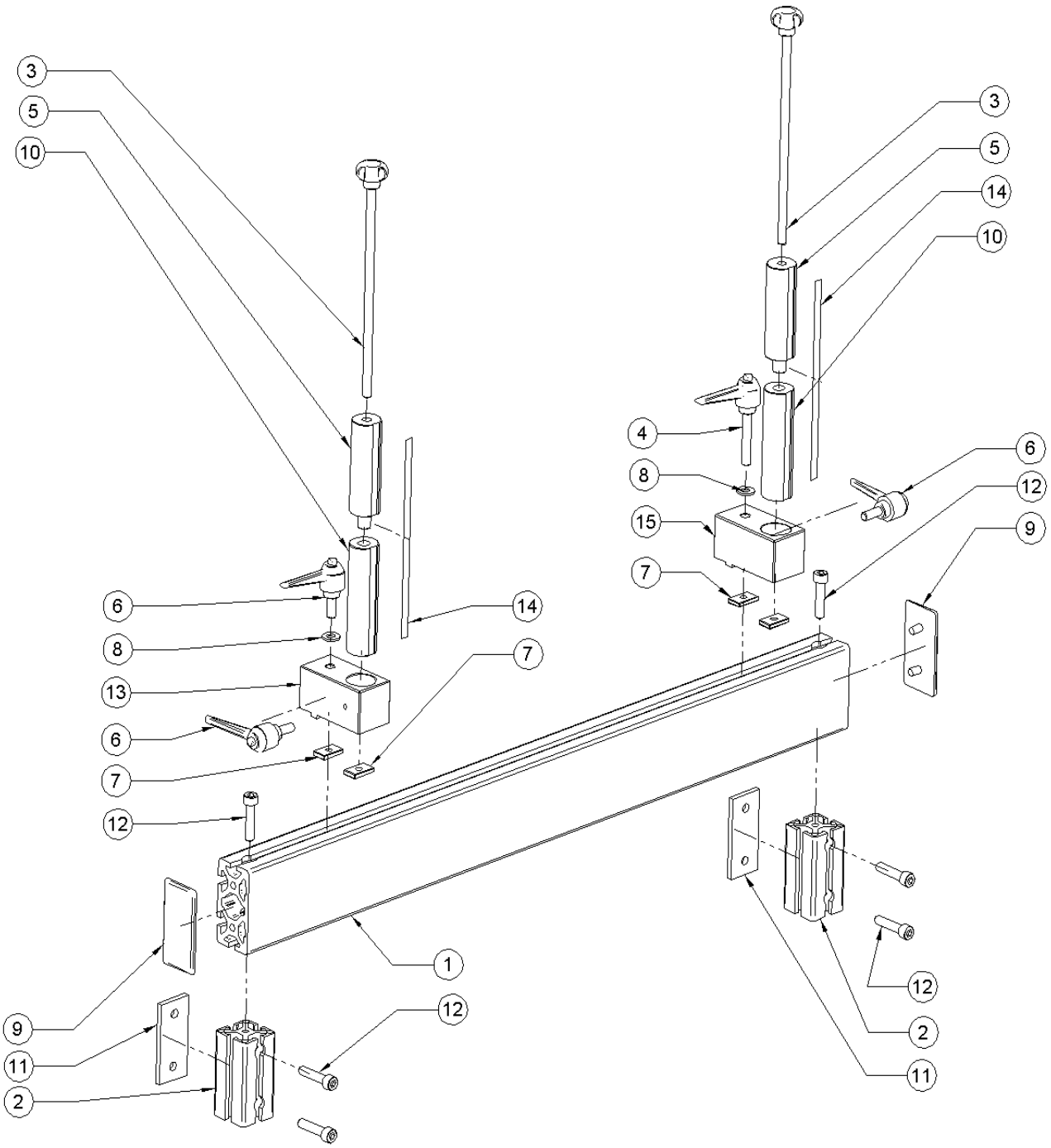
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TABLE 8 HOLD DOWN CLAMPS

Pos.	Code 21G	Code 27G	Part name	Quantity
1	00003120	00003120	Boteco 119-32 M6	1
2	49970047	49970047	Wedge-shaped piston	1
3	49970048	49970048	Threaded cylinder	1
4	00000118	00000118	Nut M14-basso-5589	1
5	49970146	49970146	Piston spring	1
6	49970045	49970045	Clamping ring nut	1
7	49900089	49900089	Head pipe	1
8	49900088	49900088	Sliding head	1
9	499700133	499700133	Spacing hold down clamp	1
10	49970042	49970042	Piston cylinder cover	1
11	49970135	49970135	Shaft protection	1
12	49970043	49970043	Piston shaft	1
13	49970049	49970049	Upper head	1
14	49900095	49900095	Nylon bumper	1
15	49970051	49970051	Lower head	1
16	00001120	00001120	Piston gasket	1
17	00001121	00001121	Or Pneumax Cod R-1502.50.5	1
18	49970040	49970040	Piston cylinder	1
19	49970041	49970041	Hollow screw M 10	1
20	00003393	00003393	Seeger ring 50	1
21	49970052	49970052	Piston	1
22	49970053	49970053	Piston spring	1
23	00018420	00018420	VSCE-5933 M4x12	1
24	00120404	00120404	G-ipp M 4x4	1
25	00005103	00005103	Self-tapping screw 3.9x9.5 galvanised 6955	1

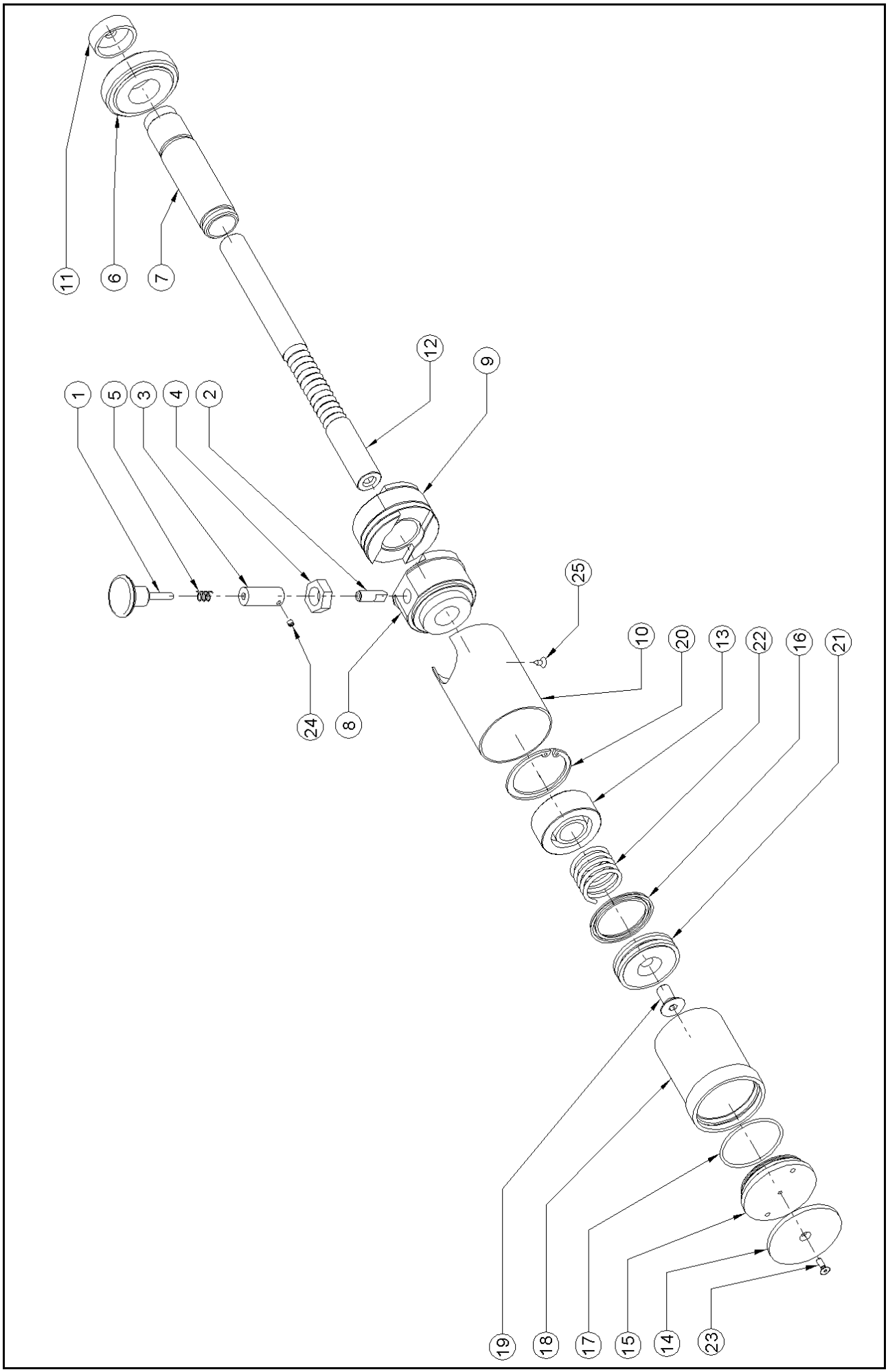
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TABLE 9 SPINDLEHEAD

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36222095	36722095	Spindles plate	1
2	36200054	36700054	Head unit	1
3	36000061	36000061	Quick-change bush	5
4	00018305	00018305	V-tcei M 6x90	4
5	00003424	00003424	Bearing 6001 2RS1	42
6	00018316	00018316	V-tcei M 8x85	4
7	00000037	00000037	Shimming washer	21
8	36200058	36700058	Head cover T/laser	1
9	00018302	00018302	Round-headed screw M6x10	12
10	00000212	00000212	Tongue 4x4x25	1
11	00000222	00000222	Flat tongue 5x5x50	1
12	26000001	26000001	Three-phase two-poles EM/63 engine 2HP	1
13	36000055	36000055	Connection plate	1
14	36000056	36000056	Engine connection	1
15	36000062	36000062	Steel gear Z 21	21
16	00000004	00000004	Knurled safety washer M8	4
17	00000005	00000005	Knurled safety washer M6	4
18	00003305	00003305	A-Ela 12	21
19	00018451	00018451	G-EI M 6x20	2
20	36000063	36000063	Bearing spacer	21
21	00018500	00018500	D-en M6	2
22	36000060	36000060	Driven spindle	20
23	36000057	36000057	Nylon connection	1
24	36000059	36000059	Driving spindle	1
25	00018303	00018303	V-tcei M 6x20	4
26	00003337	00003337	Internal ring 28	42
27	00000211	00000211	Flat tongue 4x4x12	20

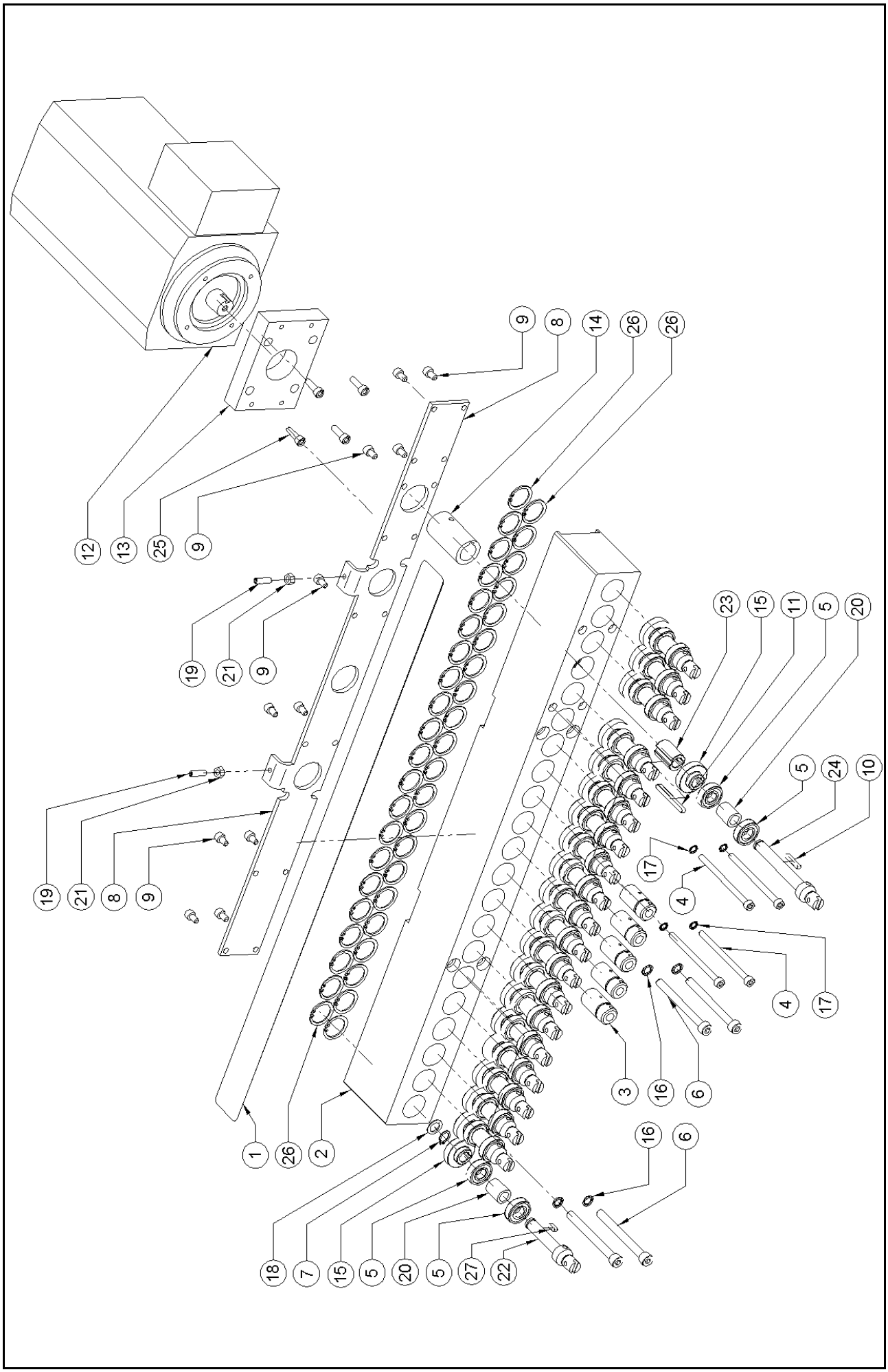
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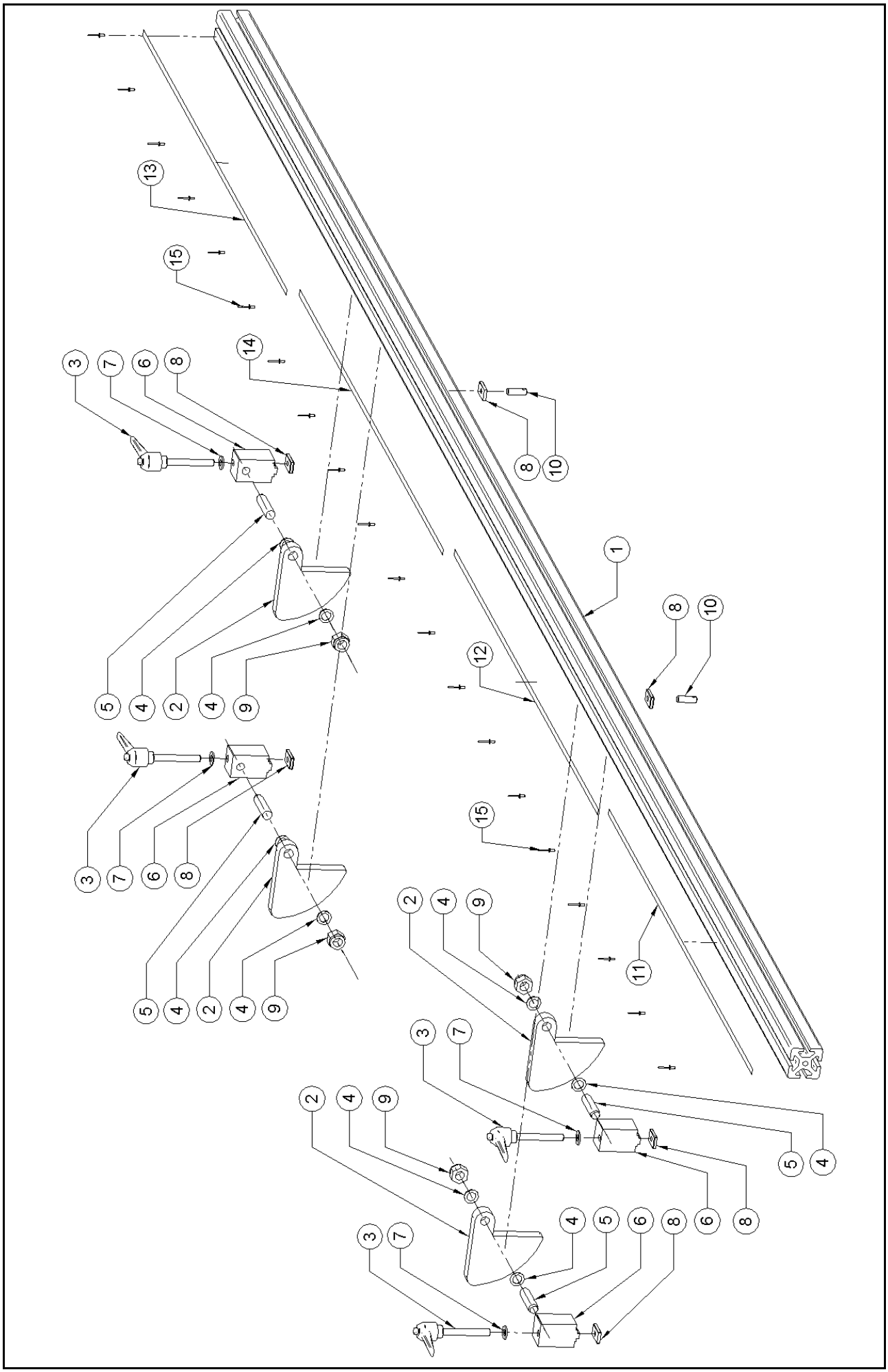
TABLE 10 EXTENSION FENCE

Pos.	Code 21G	Code 27G	Part name	Quantity
1	36222143	36222143	3-meter extension fence with stops	1
2	36222145	36222145	Crescent stop	4
3	00004030	00004030	Release lever KRP 63 M8 L60	4
4	00000037	00000037	Shimming washer	8
5	00171204	00171204	VP-RL M 12x35	4
6	36222144	36222144	Stop casing	4
7	00018521	00018521	r-cild M8	4
8	36000113	36000113	Small block for extension fence	6
9	00004021	00004021	D-enaf M 12	4
10	36001078	36001078	Drift punch	2
11	36000103	36000103	Second millim. scale for extens. fence	1
12	36000100	36000100	First millimetrical scale for extension fence	1
13	36222022	36222022	Sec. Millim. scale for extens. fence XL	1
14	36222023	36222023	First millim. scale for extens. fence XL	1
15	00008905	00008905	Rivet D 2.4x6	20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35. SPARE PARTS ORDER FORM

EVERY PART OF THIS FORM MUST BE FILLED IN.

Customer ……..

Address ……..

……..

Date …….

Telephone ……..

Fax ……..

Machine type	Serial number	Date of delivery	Table	Rev.	Quantity

NOTES

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N.B. Enclose a copy of each table where the ordered spare part is.

GRIGGIO S.p.A.

WOODWORKING MACHINERY

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