

SIKA PLUS

USE AND MAINTENANCE MANUAL SPARES CATALOGUE

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1 GENERAL INFORMATION

Comply carefully with the technical instructions before setting the machine to work and follow all directions contained in this manual.

This manual, and all literature attached, should be stored in a place within easy reach and known by all employees in charge of operation and maintenance.

1.1 WARRANTY

The company guarantees that this machine has been tested under peak running conditions with excellent results. This guarantee is valid for a period of **12 months** and covers construction materials and defects only. The client has the right solely to the replacement of faulty parts, excluding transport and packing costs.

This guarantee does not cover damage caused by dropped components, tampering or bad operation, disgregard of maintenance instructions or faulty handling by the operator. No compensation will be made in case of machine inactivity. This guarantee is not binding if payment conditions have not been met.

All labour and replaced parts costs not covered by this guarantee must be paid directly to the service technician who will present the client with a maintenance slip. A regular invoice will subsequently be supplied. Maintenance charges and spares costs are taken from Price Lists in force at the time.

2 PRELIMINARY INFORMATION

2.1 FOREWORD

This manual contains instructions for use and maintenance as well as drawings and directions for ordering spares for **SIKA PLUS**, a machine manufactured by **FOM INDUSTRIE**. All info concerning installation and operation of this machine are contained in this manual, together with notes on adjustments and maintenance.

WARNING:

- All transport, installation, maintenance and running operation of this machine must be carried out by skilled operators.
- By "OPERATOR" we mean people able to carry out such operations as cleaning, servicing, connecting, adjusting, handling and putting the machine into service.

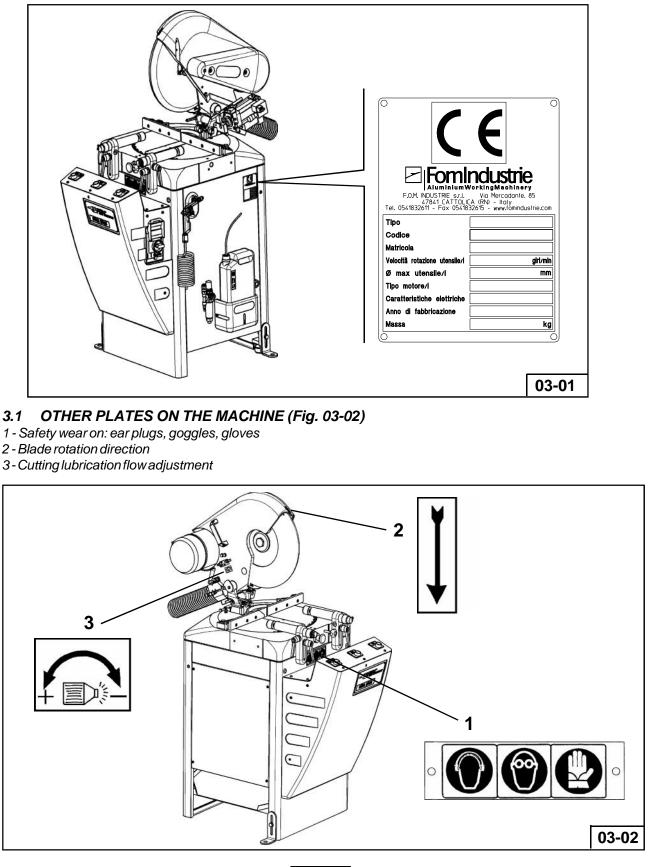


3 IDENTIFICATION PLATE AND CERTIFICATION (Fig. 03-01)

Figure shows plate in detail and its location on the machine.

NOTE:

Type, code and production number marked on the plate, must be referred to anytime you contact the manufacturer either for information or for ordering spares.



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3.2 TECHNICAL SPECIFICATIONS

- Tungsten carbide saw blade: Ø 400 mm
- Three phase motor: 2.2 Kw (3 HP) 2800 rpm 230/400V 50 Hz
- Blade rotation speed: 2800 rpm
- Blade spindle: Ø 32 mm
- Motor-blade transmission by belt
- Blade protective guard
- Cuts with: head at 90°

head angled to 45° LH, to 45° RH and to positions in between head angled to 45° LH and turned to 90°, to 45° Lh (and to positions in between)

- Head positioning to 90° and 45° LH/RH with conical pin and self-retaining release
- 2 pneumatic vices with safety servovalves
- Double working pressure servocontrolled in low pressure
- Working pressure: 7 bar
- Head down feed: hydraulic (adjustable down feed speed, rapid up feed) SIKA PLUS code XZ-10567
 manual- SIKA PLUS code XZ-10568
- Air consumption per work cycle: 1.3 NI (XZ-10568) 3 NI (XZ-10567)
- Atomised cutting lubrication
- Set up for the installation of chips and fumes extraction system
- Set up for connection to roller table

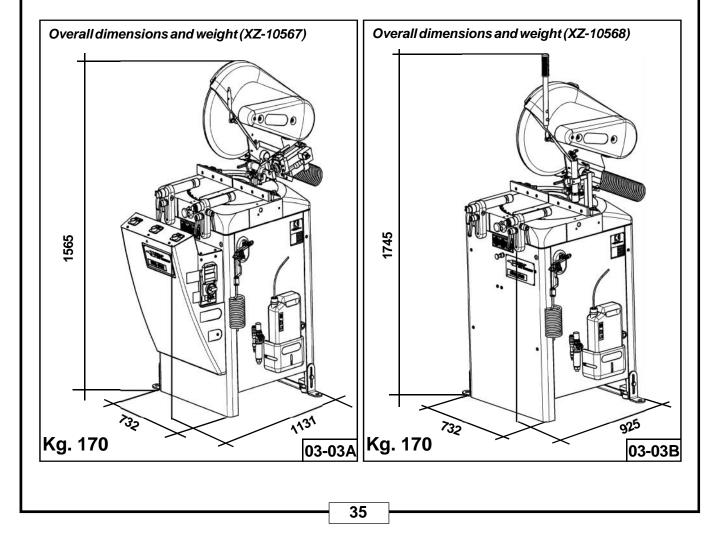
Supplied as standard:

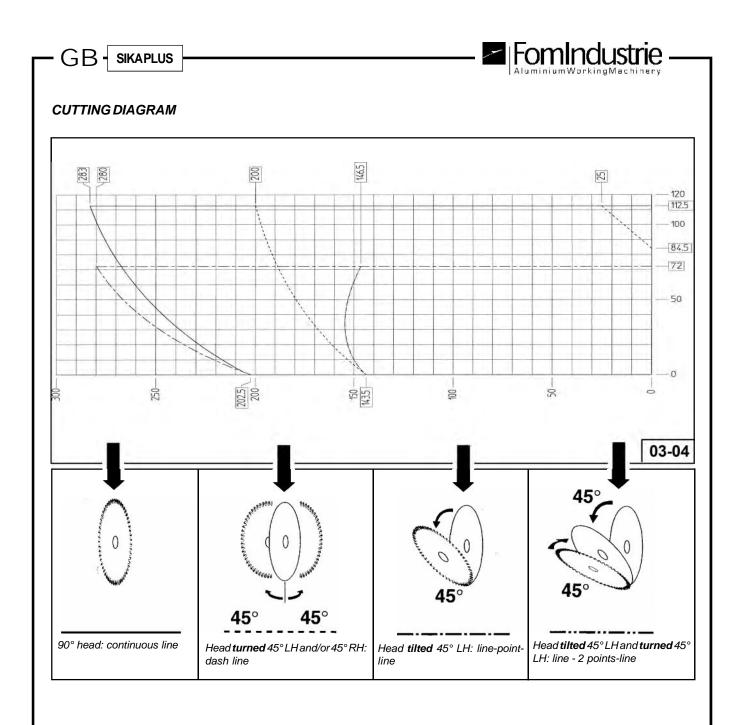
Compressed air gun

Optional:

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Vertical LH/RH vice Kit for microdrop pure oil cutting lubrication





3.3 NOISE EMISSION OF THE SIKA PLUS SAWING MACHINE

NOISE LEVELS ACCORDING TO ISO 3746

LWA	Acoustic power level dB (A) 110.9	
LpA	Acoustic power level at operator station dB (A) 111.2	



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4 HEALTH AND SAFETY DIRECTIONS

4.1 FOREWORD

Every operator of the machine should be fully aware of the location and function of all controls and also of machine characteristics, therefore they should read this manual thoroughly. Unauthorized tampering or replacement of machine parts, use of tools, accessories, materials other than those recommended by the manufacturer, can lead to accidents for which the manufacturer cannot be held responsible.

4.2 INTENDED MACHINE USE

The **SIKA PLUS** sawing machine has been designed for cutting profile sections made of aluminium, plastic or light alloy profile sections.

Other materials are not compatible with its characteristics.

WARNING:

This machine is not suitable for working in areas subject to fire or blast risks.

4.3 GENERAL SAFETY WARNINGS

- The term "OPERATOR" specifically refers to the person or persons entrusted with installing, operating, adjusting, carrying out maintenance, cleaning, repairing and handling the machine; "DANGEROUS AREAS" refers to any area inside and/or near the machine in which the presence of an exposed individual constitutes a risk to the health and safety of that person; "EXPOSED INDIVIDUAL" refers to any person standing fully or partially in a dangerous area.
- According to the provisions of "lighting in work areas", the place where the machine is used must have no areas in shadow, glaring lights, or dangerous strobe effects caused by the lighting in the workshop.
- Furthermore, efficient ventilation must be guaranteed in the workplace with the use of a suitable extraction system where necessary.
- The machine must be operated by skilled staff only and is designed for machining "NON-TOXIC" and "NON AGGRESSIVE" materials; the use of any products other than these absolves FOM INDUSTRIE from any responsibility for damage caused to the machine, persons or property.
- The machine can work at ambient temperatures of 0 °C to + 40 °C
- The removal of guards and safety devices is absolutely forbidden.
- The areas where the operator works should always be kept clear and clean from any oil residue.
- Before setting to work, the operator must have a perfect knowledge of the location and working operations of all controls as well as the machine characteristics.
- The work commands must be carried out by one operator only; action by more than one operator is only allowed in the loading phase.
- Routine and special maintenance operations must take place when the machine is idle and disconnected.
- Any work on the pneumatic systems must only be performed after having discharged the pressure inside the circuit.
- Electrical connections should be made according to the general installation rules for the preparation and operation of electrical systems.
- Electrical installation and connections must only be made by skilled personnel.

NOTE:

The term "skilled personnel" refers to people trained at special courses and with a previous experience in the field.

- Skilled personnel must also be familiar with first-aid techniques in the event of accident.

 Staff involved in operating, maintenance, cleaning, inspection etc. will in any case have to carefully observe the safety rules in force in the country where the machine is to be used.
 All operators should dress in a suitable manner for the work place and for the job to be carried out.

Machine and maintenance operators should not wear neck chains, bracelets or rings.

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4.5 AREAS OF RISK AND RESIDUAL RISKS

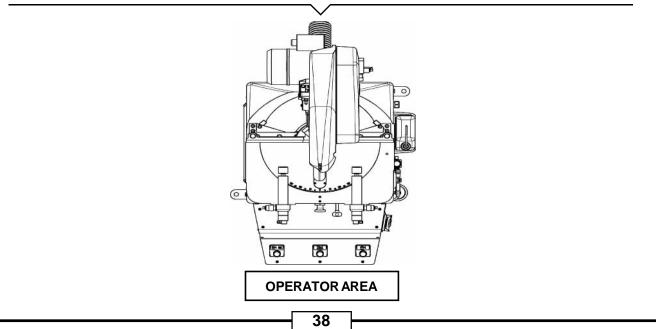
Despite the safety guards and devices provided on the machine, there are some areas to be considered "risk" areas if misused by personnel.

04-01

The picture shows the area where control and operation of the machine are handled in standard operating conditions (guard down).

That area poses no risk and is described as the "OPERATOR CONTROL AREA".

Risk area, forced evacuation of fumes; it is forbidden for anyone to stand in this area unless the machine has been connected to an extraction system.



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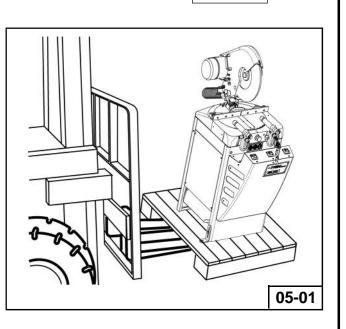
5 TRANSPORT AND INSTALLATION

The machine is delivered in one of the following ways: packed on a wooden pallet, packed on a wooden pallet and in cartons, packed on a wooden pallet and in a wooden crate.

Inside the machine (clearly in sight), the customer will find not only the instruction manual, but also a pack containing the tool kit and the elements for anchoring to the ground.

5.1 HANDLING (Fig. 05-01)

The machine, packed or not, has to be handled carefully and with suitable fork lift. When lifting or picking up before positioning, make sure not to damage the most fragile parts, namely cables or hoses, using suitable equipment.



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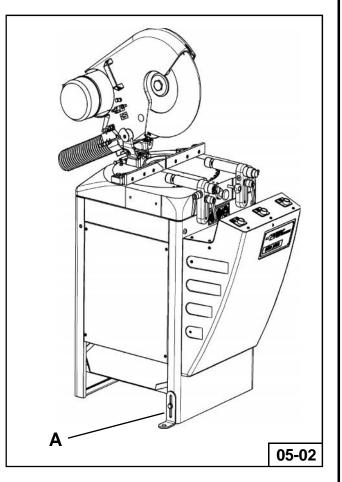
5.2 INSPECTIONS

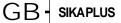
- Make sure that environment has no areas in shadow, dazzling rays or dangerous stroboscopic effects due to lighting.
- Make sure that no damage occurred during transport.
- Make sure that machine rests evenly on floor.
- Make sure that there is enough room around the machine to carry out all maintenance operations safely and easily.

5.3 POSITIONING AND INSTALLING THE MACHINE

After choosing the place, installation begins. Secure the machine to the floor using the two corner brackets **"A" - Fig. 05-02** supplied with it.

Secure the brackets to the machine and floor as shown in **Fig. 05-02** below, make sure that the machine is level (if necessary, place little pieces of plate under the stand) before fixing the corner brackets).





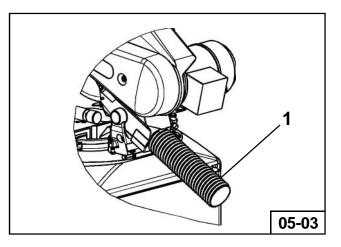
5.4 CHIPS AND FUMES COLLECTION

At the back of the machine there is a flexible hose, for connection to an extraction system to take away the flying chips and fumes produced by cutting (see Ref. **"1" - Fig. 05-03**).

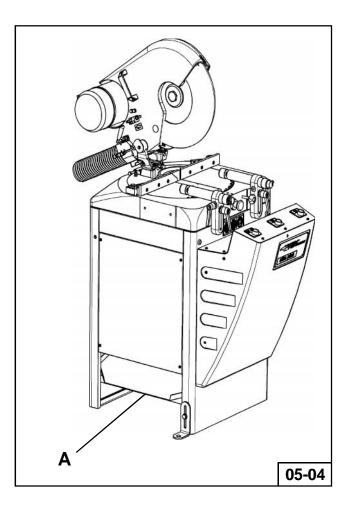
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Prima di allacciare l'aspiratore alla macchina (direttamente con un tubo flessibile di diametro 80 mm. oppure attraverso una riduzione), é consigliabile rimuovere il tubo **"1" - Fig. 05-03** allentando la relativa fascetta.

N.B. The exhauster must be installed by the user under his own responsibility.



It is advisable to fit a container to collect chips and oil residue from cutting which should be positioned laterally next to slide "A" (see Fig. 05-04).

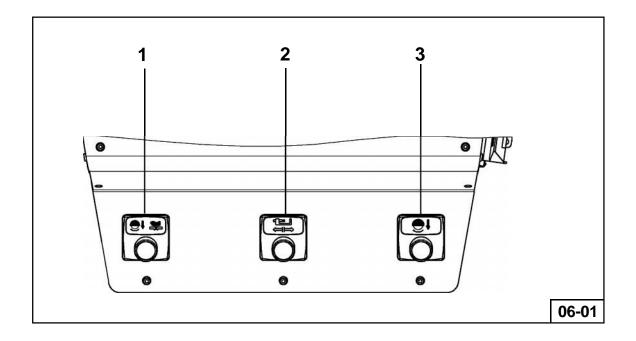




6 CONTROLS

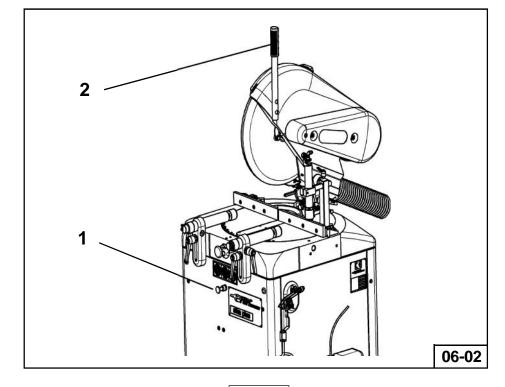
6.1 CONTROL PANEL - SIKA PLUS cod. XZ 10567 (Fig. 06-01)

- 1 CLOSE VICES / HEAD DOWNSTROKE CUT button
- 2 OPEN VICES button
- 3 HEAD DOWNSTROKE CUT button



6.2 CONTROLS - SIKA PLUS cod. XZ 10568 (Fig. 06-02)

- 1 CLOSE VICES / OPEN VICES button
- 2 HEAD DOWNSTROKE- CUT Lever

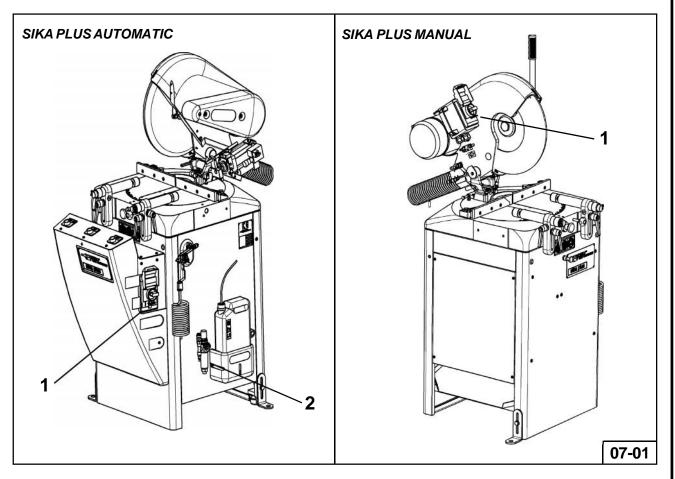


7 ELECTRICAL AND PNEUMATIC CONNECTIONS

7.1 ELECTRICAL AND AIR CONNECTION COMPONENTS (Fig. 07-01)

1 - On/Off switch

2 - Air intake filter



Before starting

Before starting the machine, it must first be checked that the mains power supply is efficient, safe and reliable, protected by an automatic supply line switch and properly earthed. This applies also to the compressed air supply which must be of sufficient section for the required capacity and a valve fitted so that the supply can be cut off to the machine. If the air distribution line is of considerable length, then appropriate release barrels must be provided at suitable points to drain off the condensation.

Before carrying out any operations of this sort, make sure that the power supply available is the same as that required by the machine. Check that the main switch (400 V - three-phase) is set to **0** (zero).

Connection to the electrical power supply

A - 400 V THREE-PHASE power lead

If the machine does not already come supplied with plugs for connection to the power supply (400 V), connect the power leads to the relative plugs.

Protect the power cables with a differential overload cutout switch.

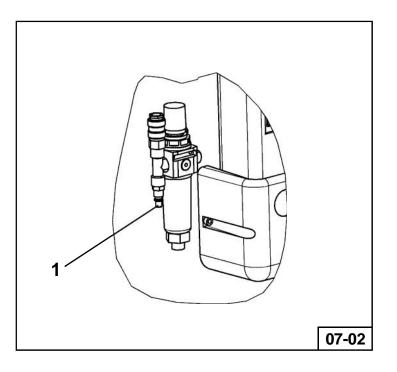
Should the power supply wire be cut, reset connection referring to the wiring diagram (Cap. 11).

If the direction of blade rotation is not the same as the one shown by the arrow on the machine, invert two of the three phases of the power supply.



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Insert hose in fitting "1" - Fig. 07-02



7.2 MOTOR STARTING SWITCH - SAFETY DEVICES

The motor starting switch:

Can be locked: when the machine is switched off for maintenance; lock the switch with a padlock to prevent accidental starting.
Is magneto-thermic: so that it switches off automatically in case of short circuit or overheating; everytime this occurs, the operator should check that the electric circuit and motor are in order.
Has a release coil: that automatically switches off in the event of a power cut. This prevents the motor from starting again all of a sudden when the voltage returns.

NOTE:

In order to comply with specific technical and safety directions, manufacturers supply the motor starting switch with one voltage only (for instance one-phase 230V, three-phase 230V, three-phase 400V, and so on).

8 ADJUSTMENTS

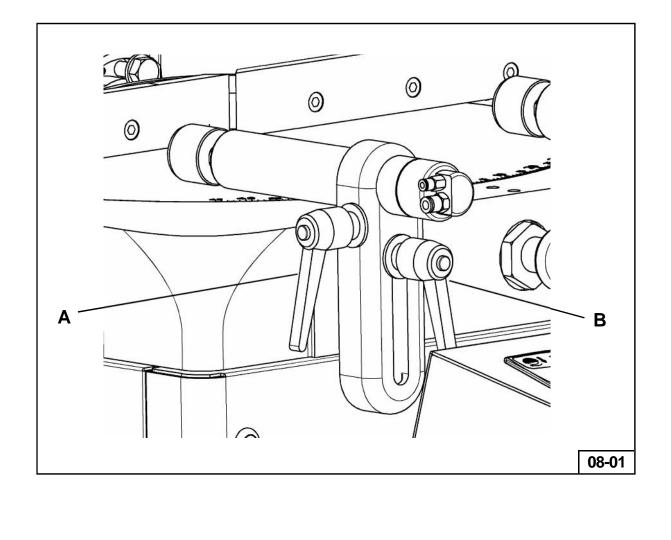
8.1 HORIZONTAL VICES POSITIONING (Fig. 08-01)

For best positioning of the horizontal vices on the surface of the profile, the methods below should be followed:
1) Undo release handle "A" to set the distance from the profile.

2) Undo release handle "B" to adjust the vices assembly both vertically and laterally.

The horizontal vices are equipped with a safety valve to prevent opening: if the air supply to the vice fails (when they are closed) they will not open; when the air supply returns the machine fucntions are restored.

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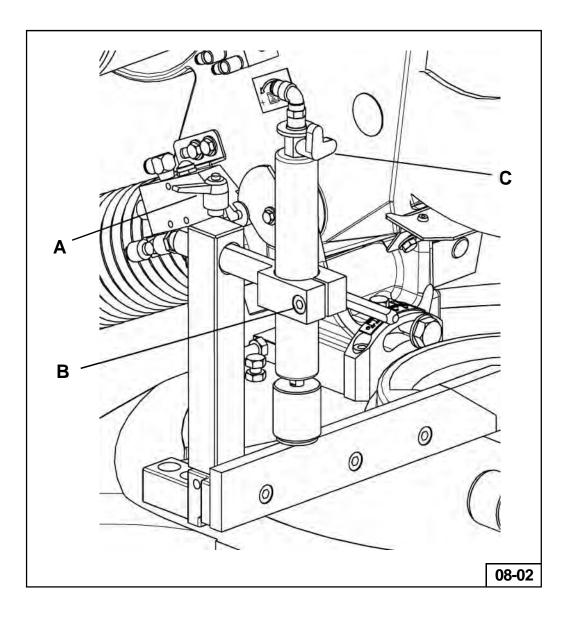


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VERTICAL VICE POSITIONING (OPTIONAL) (Fig. 08-02) 8.2

- 1) Undo release handle "A" to set the distance from the profile..
- 2) Undo screw "B" to adjust the vice vertically.

To exclude the vertical vice, turn tap "C".



8.3 CUTTING ANGLES

8.3.1 HEAD ROTATION

The head of the SIKA PLUS can be rotated as follows:

- From 90° to 45° RH

- From 90° to 45° LH

By first undoing knob "1" - Fig. 08-03 and then pulling button "2" - Fig. 08-03 the head is free to rotate. Use the handle "3" - Fig. 08-04 to rotate the head to the required position. Mechanical end of travel stops determines the positions:

- 90°
- 45° RH

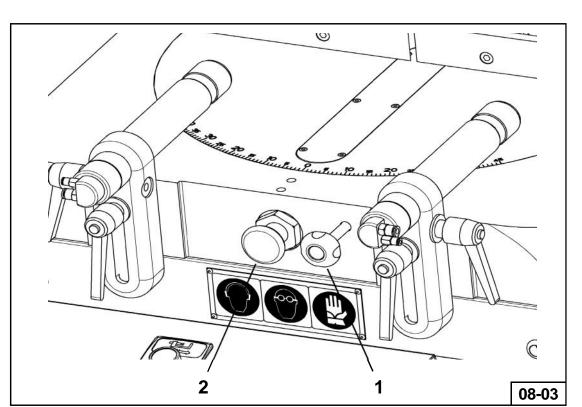
- 45° LH

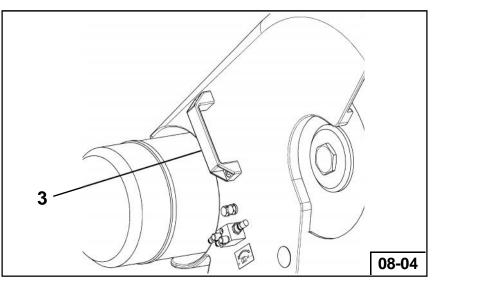
The intermediate cutting positions are obtained, after pulling out button "2" - Fig. 08-03, by rotating the blade using the handle "3" - Fig. 08-04.

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The vernier scale is etched into the work table

Reading off the angle required, secure the head by tightening knob "1" - Fig. 08-03 and releasing button "2" - Fig. 08-03.





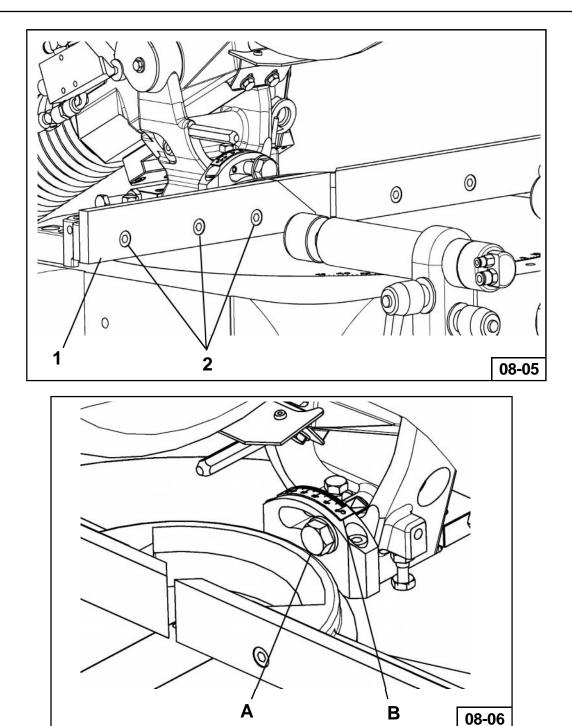


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8.3.2 HEAD INCLINATION

IMPORTANT:

before inclining the head the LH vice jaw "1" - Fig. 08-05, must be removed by undoing the screws "2" - Fig. 08-05, and substituting it with the vice jaw provided.



To incline the head from 90° to 45° to the left including the intermediate angles, undo screw "A"-Fig. 08-06, then incline the head while reading the angle off the vernier "B" - Fig. 08-06. Lastly, tighten screw "A" - Fig. 08-06.

The head can also be rotated and inclined simultaneously to the left.

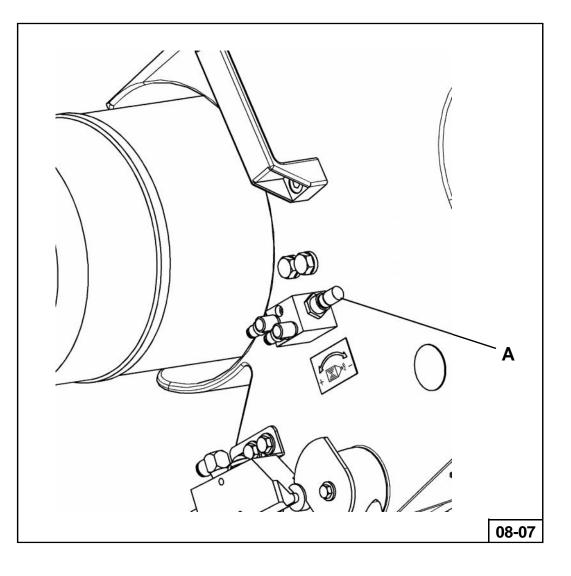
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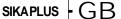


8.4 ADJUSTING THE BLADE LUBRICATION FLOW (Fig. 08-07)

The flow of lubricant for the blade is adjusted by the following procedure Turning the knurled knob **"A"** clockwise decreases the flow, turning it counter clockwise increases the flow.

IMPORTANT: In the oil tank for cutting (or blade) lubrication, put only: OIL FOR CUTTING ALUMINIUM.







8.5 ADJUSTING THE BLADE DOWN-FEED - SIKA PLUS AUTOMATIC (Fig. 08-08)

Turning knob "A" clockwise decreases the blade down-feed speed; turning knob "A" counter clockwise increases the speed.

8.6 ADJUSTING THE BLADE DOWN-FEED SPEED (RAPID - OPERATING DOWN-FEED) - SIKA PLUS AUTOMATIC (Fig. 08-08)

The machine head has two down-feed speeds:

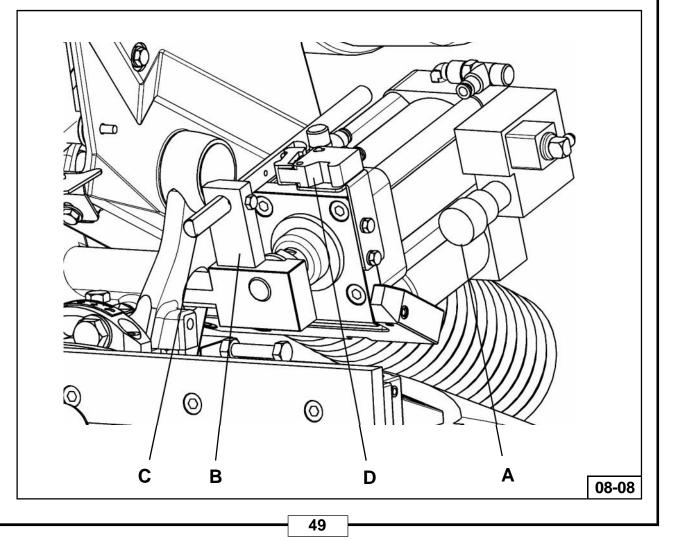
- rapid
- operating

The former allows a fast approach to the workpiece. The latter (slower) is suitable for cutting.

Loosen screw "A" and release bar "B" as shown. When the bar meets the pneumatic microswitch "C", rapid speed turns to operating speed (slow).

NOTE:

"BLADE DOWN FEED SPEED" and "BLADE LUBRICATION FLOW" adjustments are usually set to standard when machine is tested at the manufacturer's workshop.





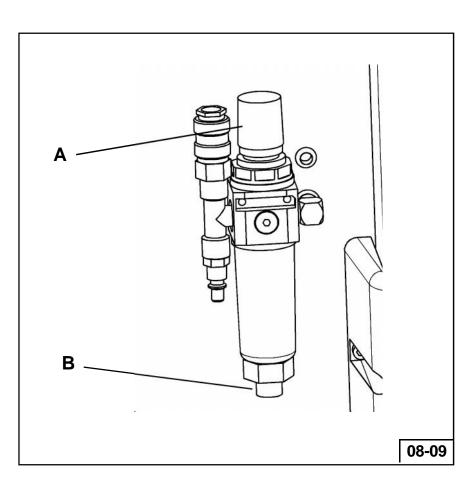
8.7 ADJUSTING THE AIR INTAKE PRESSURE (Fig. 08-09)

To increase or decrease the air intake pressure, turn knob "A" (lift up, adjust and push down again to secure).

8.8 ADJUSTMENTS ON THE AIR INTAKE FILTER (Fig. 08-09)

DISCHARGING CONDENSATION

without disconnecting the air supply hose, press knob "**B**" making sure that the relative ring is open. The condensation is in any case discharged automatically (always with the ring open) each time the air supply hose is disconnected.





OPERATING 9

OPERATING - SIKA PLUS MANUAL 9.1

The machine has a manual down-feed, while the vices and the atomised cutting lubrication are pneumatic. Check:

- That the power supply voltage is the same as that of the machine.
- The blade rotation direction.

After adjusting the position of the vices in relation to the profile to be cut, position the profile on the work table. By setting the pneumatic button "A" - Fig. 09-01 fully forwards the vices clamp the profile.

CAUTION:

Check carefully that the vices are not within the working range of the blade.

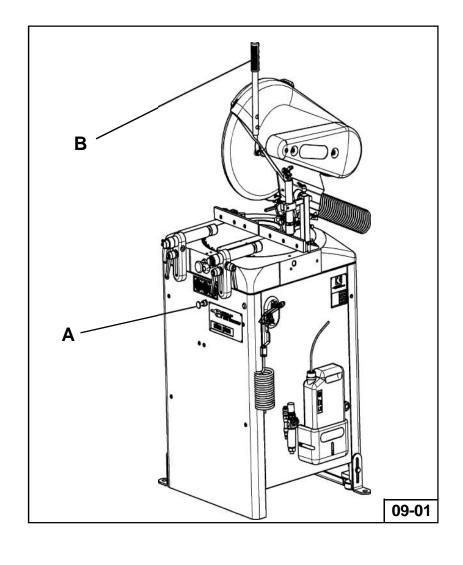
Turn the main switch to position I.

Lowering lever "B" - Fig. 09-01 activates the cutting atomisation, then the profile clamped on the work table is cut. When the head is sent back upwards the atomisation stops,

By positioning the pneumatic button "A" - Fig. 09-01 fully backwards the vices can be opened and the work table freed for the next cut.

CAUTION:

Never carry out cutting operations without first tightening the two vices.





9.2 OPERATING - SIKA PLUS AUTOMATIC

The machine has a hydraulic blade down feed, while the vices and the atomised cutting lubrication are pneumatic. Check:

- that the power supply voltage is the same as that of the machine.
- the blade rotation direction.

After adjusting the position of the vices in relation to the profile to be cut, position the profile on the work table clamping it with the vices.

CAUTION:

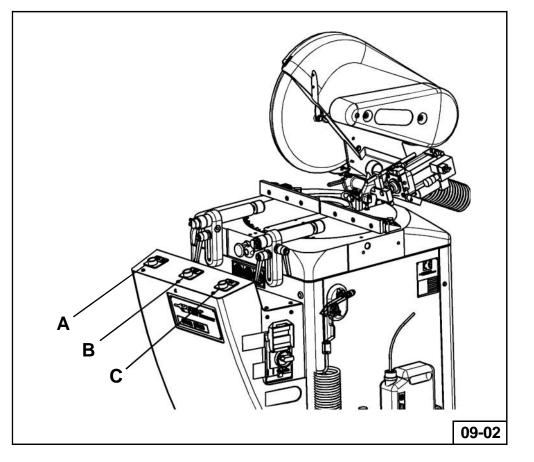
Check carefully that the vices are not within the working range of the blade.

When button "A" - Fig. 09-02 is pressed, the profile is clamped with the vices in LOW PRESSURE. If the profile is not correctly positioned, the vices can be re-opened by pressing button "B" - Fig. 09-02. When the profile is correctly positioned, turn the main switch to **I**.

By pressing simultaneously (and keeping pressed down) the CUT buttons "A" and "C" - Fig. 09-02, the head comes down, atomisation and the vices HIGH PRESSURE are enabled.

If one or both of the CUT buttons are released, cutting is interrupted as the head returns upwards. The sawing operation then takes place.

Once cutting is finished both the CUT buttons "A" and "C" - Fig. 09-02 can be released and the head returns upwards. The vices re-open by pressing button "B" - Fig. 09-02.





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10 MAINTENANCE

10.1 GENERAL PRECAUTIONS

Read the directions in this manual carefully before starting any action.

WARNING:

Only skilled personnel should be employed for any maintenance operation.

- All maintenance operations must be carried on when the machine is disconnected from mains and air network.
- Improper actions not in accordance with the safety directions given for the operation of this machine can cause damages or injuries.
- When the maintenance process is completed, before putting the machine into service ensure that:
- 1 Parts replaced and/or tools used for maintenance have been cleared away from the machine
- **2** All safety devices are in working condition.

10.2 DAILY MAINTENANCE

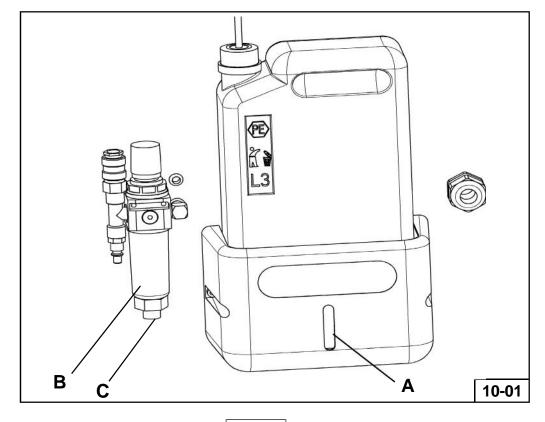
The maintenance operations are very simple and are listed in the following order:

- Check the level of the lubricating oil for cutting through the inspection window "A" Fig. 10-01.
- Check for any condensation in the cup through the slits "B" Fig. 10-01. If there is condensation in the cup press knob "C" - Fig. 10-01 upwards until it is discharged (this operation is performed without disconnecting the machine from the air supply).
- If necessary using the compressed air gun supplied, clear any dust or shavings from the work contact surfaces.

CAUTION:

When using the compressed air gun, the wearing of protective goggles is obligatory.

- Keep the machine work area clean of any offcuts, shavings or any other machining residue.
- Carefully oil all the exposed mechanical parts (work table, etc.)





10.3 BLADE REPLACEMENT

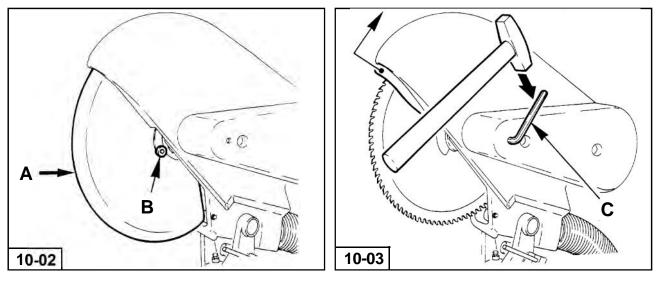
WARNING:

Disconnect the air system and lock the main switch off with the padlock before carrying out any parts substitution.

Wear gloves

Hold the inner guard with one hand at point "A" - Fig. 10-02 and with the other unscrew and remove "B" - Fig. 10-02.

Raise the inner guard all the way up exposing the blade. Insert wrench "**C**" as shown in **Fig. 10-03** and give a sharp hammer blow.

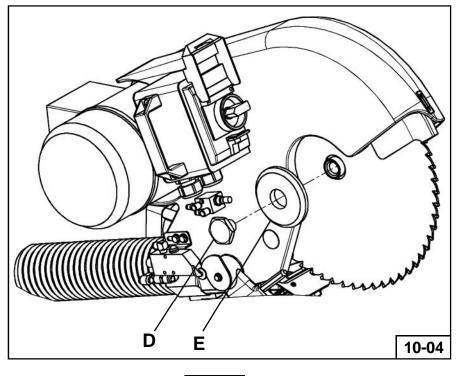


Hold wrench "**C**" - Fig. 10-03, unscrew and remove "**D**" - Fig. 10-04, locking the flanges and blade. Pull out flange "**E**" - Fig. 10-04 and remove the blade. Check if the motor shaft and flanges are clean and oil them all before fitting the new blade.

In this process, check the direction of rotation.

Tighten flange "E" - Fig. 10-04 with screw "D" - Fig. 10-04 and lock it all with a hammer blow on screw "C" - Fig. 10-03.

Lower the safety guard and, holding it at point "A" - Fig. 10-02 screw in and tighten "B" - Fig. 10-02.





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10.4 BELT REPLACEMENT (Figs. 10-05 / 10-06)

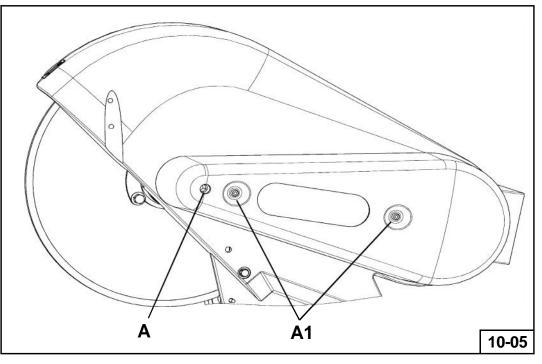
WARNING:

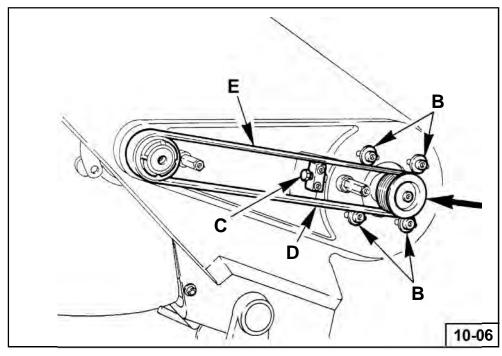
Disconnect the air system and lock the main switch off with a padlock before carrying out any parts substitution.

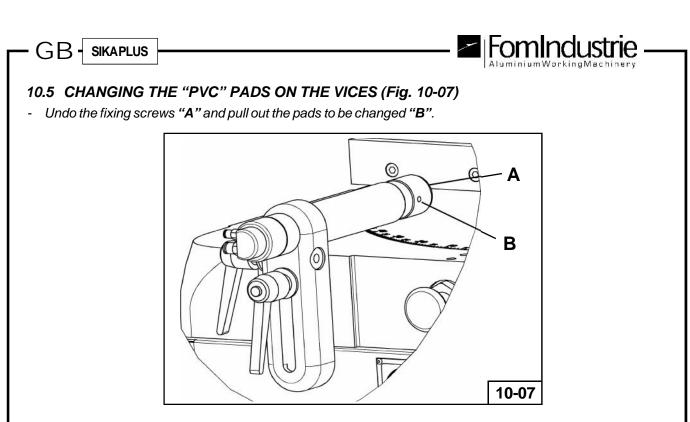
Weargloves.

Unscrew the two fastening screws and remove guard "**A**". Loosen the four motor screws "**B**". Pull out "**C**" and push the pulley in the direction of the arrow as far as belt "**D**" can be removed. Insert the new belt stretching it with "**C**" until at point "**E**" there is a max. of 5 mm play on the belt.

Tighten screws "B" again and put guard "A" on again.

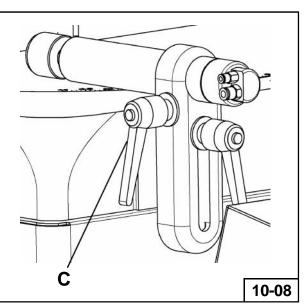






10.6 VICE CYLINDER REPLACEMENT

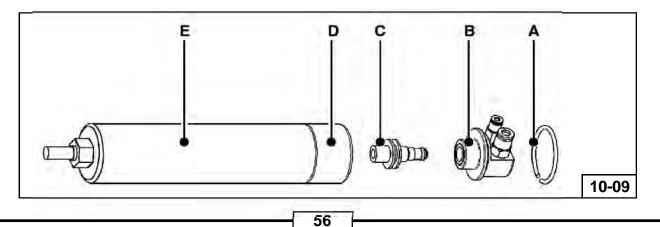
- 1) Disconnect the hose from the filter and lock the ON/ OFF switch in the **"OFF"** position using a padlock.
- 2) Unscrew vice roll "B" Fig. 10-07.
- 3) Loosen handle "C" Fig. 10-08 and pull out the cylinder.
- 4) Disconnect the air ducts.
- 5) Insert the roll on the new cylinder or replace it if necessary.
- 6) Place the new cylinder inside its support and lock with handle "C" Fig. 10-08.
- 7) Connect the hoses to the union.
- 8) Re-connect the hose to the machine and take off the padlock.
- 9) Test.



10.7 CLEANING THE VICE CYLINDER STOP VALVE (Fig. 10-09)

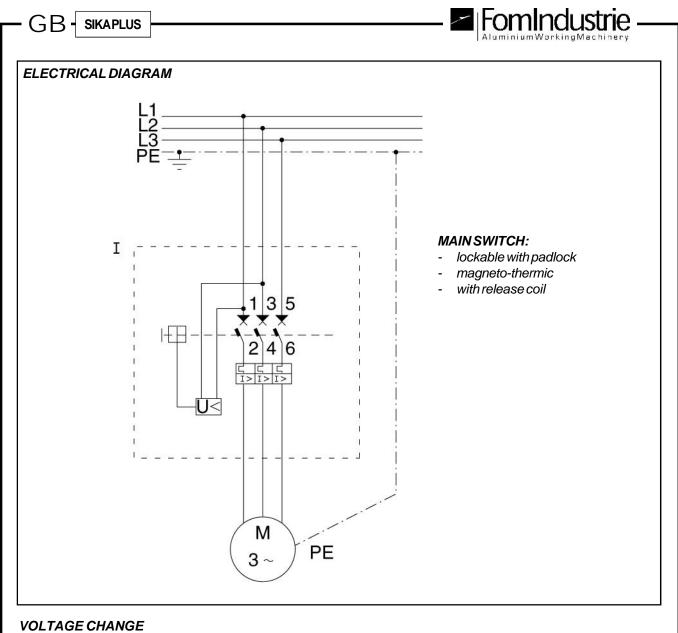
Remove metal ring "A" with a screwdriver; take out the stop valve cap "B"; take out the stopper "C" and clean it being careful of the springs fitted to the stopper, then reassemble all the components.

N.B. Do not unscrew the valve body "**D**" from the cylinder body "**E**", because there is a preloaded spring inside which would expel the piston.



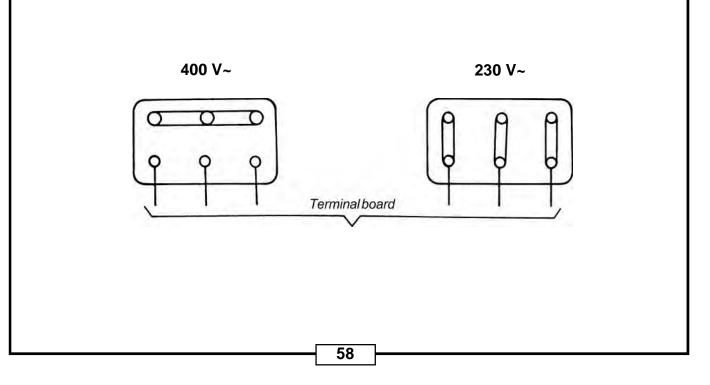


11 ELECTRICAL AND PNEUMATIC DIAGRAMS



VOLTAGE CHAN WARNING:

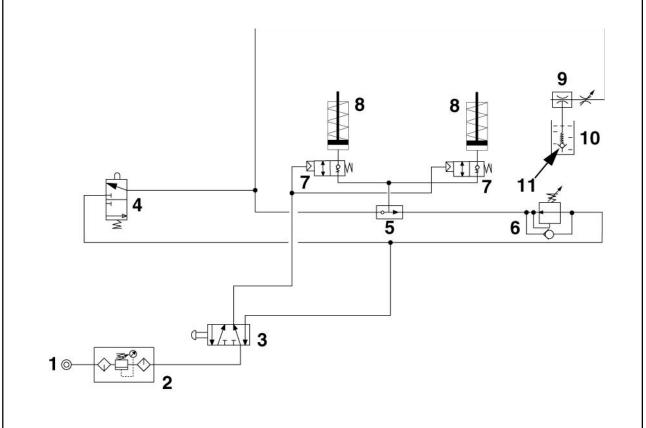
BEFORE SETTING TO WORK ON THE MOTOR TERMINAL BOARD IT IS COMPULSORY TO SWITCH OFF AND LOCK THE MAIN SWITCH WITH A PADLOCK.



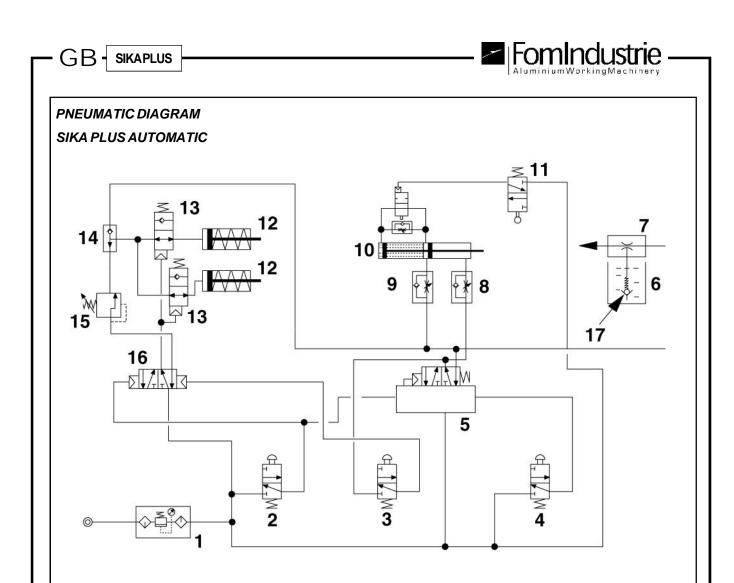


PNEUMATIC DIAGRAM

SIKA PLUS MANUAL



1)		Airinflow
2)		Air inflow filter
3)	BT-76701	Vices clamp/release valve
4)	BT-72304	Vices high/low pressure valve
5)	CA-70262	Vices high/low pressure selector
6)	BT-71524	Economizer
7)		Non-return safety valve
8)		Vice cylinder
9)		Sprinkler
10)		Cuttingoil tank
11)		Non-return valve



1)		Air intake filter
2)		Vice clamping push-button
3)		Vice releasing push-button
4)		Cut push-button
5)	BT-76701	Safety/cutting block
6)		Cutting oil can
7)		Nebulizer nozzle
8)		Flow adjusting valve
9)		Flow adjusting valve
10)		Head downstroke cylinder
11)		Head downstroke speed limit switch
12)		Vices
13)		Vices safety valve
14)	CA-70262	High-low pressure selector valve
15)	BT-71524	Economizer
16)	BT-71606	Vices valve
17)		Non-return valve