Translation of the original operating instructions

This manual must be kept for future reference and must always remain with the machine

FS 41E

INSTRUCTION MANUAL

CE

SURFACE PLANER/THICKNESSER FOR WORKING WITH WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS



minimax

Rel. 4.0 / 03-2023 **00L0369460B** **EN**

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MANUFACTURER:	**SCM INDUSTRIA S.p.A.**
ADDRESS:	**Via Valdicella, 7 - 47892 - Gualdicciolo - Rep. San Marino**
DESIGNATION:	**SURFACE PLANER/THICKNESSER FOR WORKING WITH WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS**
BRAND:	**SCM**
TYPE:	**FS-07**
MODEL:	**FS 41E**
TYPE OF DOCUMENT:	**INSTRUCTION MANUAL**
DOCUMENT CODE:	**00L0369460B**
EDITION:	**Rel. 4.0 / 03-2023**
CONFORMITY:	CE

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DICHIARAZIONE “CE” DI CONFORMITA’

(AI SENSI DELL'ALLEGATO IIA DELLA DIRETTIVA 2006/42/CE
E DICHIARAZIONE "UE" AI SENSI DI ALTRE DIRETTIVE APPLICABILI)

"EC" DECLARATION OF CONFORMITY

(PURSUANT TO ATTACHMENT IIA OF DIRECTIVE 2006/42/EC
AND "EU" DECLARATION PURSUANT TO OTHER APPLICABLE DIRECTIVES)

IL FABBRICANTE: *THE MANUFACTURER:*	**SCM INDUSTRIA S.P.A** **VIA VALDICELLA 7 - 47892 GUALDICCIOLO (R.S.M.)**

DICHIARA CHE LA
DECLARES THAT

MACCHINA: *MACHINE:*	**PIALLATRICE A FILO E A SPESSORE PER LA LAVORAZIONE DEL LEGNO E DI MATERIE CON CARATTERISTICHE FISICHE SIMILI** **SURFACE PLANER/THICKNESSER FOR WORKING WITH WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS**		
MARCA: *BRAND:*	***SCM***	N°DI SERIE: *SERIAL NO.:*	
TIPO: *TYPE:*	***FS-07***	ANNO DI COSTRUZIONE: *YEAR OF CONSTRUCTION*	
MODELLO: *MODEL:*	***FS 41E***		

E’ CONFORME A TUTTE LE DISPOSIZIONI PERTINENTI DELLE SEGUENTI DIRETTIVE:
COMPLIES WITH ALL THE RELEVANT REGULATIONS IN THE FOLLOWING DIRECTIVES:

2006/42/CE	**2006/42/EC**
2014/30/UE	**2014/30/EU**

ORGANISMO NOTIFICATO CHE HA EFFETTUATO L’ESAME CE DI TIPO *NOTIFIED BODY WHICH DELIBERATED ON THE “EC” TYPE EXAMINATION CERTIFICATE*	***KIWA CERMET ITALIA S.p.A. NB 0476*** ***VIA CADRIANO, 23*** ***40057 CADRIANO di GRANAROLO (BO)***
NUMERO DI ATTESTATO D’ESAME CE DI TIPO *NUMBER OF “EC” TYPE EXAMINATION CERTIFICATE*	***C19E419***

PERSONA AUTORIZZATA A COSTITUIRE IL FASCICOLO TECNICO: *PERSON AUTHORISED TO PRODUCE THE TECHNICAL FILE:*	***SCM GROUP spa Via Emilia n° 77*** ***I-47921, Rimini (RN) - ITALY***

IL RAPPRESENTANTE DELEGATO DEL FABBRICANTE
THE MANUFACTURER’S REPRESENTATIVE

****CITTA’****, ****DATA****,

*** IDENTIF CAZIONE FIRMATARIO ***
FIRMA AUTOGRAFA

[IT] LINGUA ORIGINALE DICHIARAZIONE
[EN] TRANSLATION OF DECLARATION ORIGINAL LANGUAGE

FACSIMILE OF THE COPY OF THE "EC" DECLARATION PRINTED ON WATERMARKED PAPER THAT IS DELIVERED TO THE CUSTOMER

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1.1 AIM OF THE HANDBOOK

(ev-1-1_0.0)

Responsible for the introduction of the machine onto the EU market in compliance with article 9, paragraph 2 of the EMC 2004/108/EC Directive
SCM GROUP S.p.A. Via Emilia n.77, I-47921, Rimini (RN) - ITALY

This handbook has been written by the machine manufacturer and is an integrating part of the machine[2].
The information serves for qualified technicians[3].

With this handbook we wish to give you all information regarding to the use and maintenance of the machine: in this way you are sure to protect the production as well as the equipments.

The handbook defines the proper use of the machine and gives all information necessary for:
- right use of the machine
- working economy
- long operation life

If the instructions are always kept, it is possible to guaranty safety conditions for the operator, safe machine operation, service economy and a longer life of the machine.

To make the easier, the handbbok is divided in proper sections.
To quickly find the subject, see the Contents.



NOTE-INFORMATION:
some images present in this handbook may:
- not exactly correspond to the real machine version when this does not influence the validity of the information and instructions described and does not prejudice the safe operation.
- Be indicated without safety guards in order to make the parts described in the text more visible.



DANGER-WARNING:
the safety guards are necessary to ensure the safe machine operation and the working without the safety guards is forbidden.

SCM sales organization is always at your disposal for any technical problem (reparation, spare part delivery etc.) and to improve your business.
Keep this handbook for future information besides it shall always be with the machine.
SCM is not responsible for damages caused by wrong use or maintenance of the machine.

For any technical problem apply to SCM dealer:

[2] The definition "machine" replaces "FS 41E" machine name.

[3] Technicians who, thanks to their technical background and experience, are able to recognize and to avoid possible dangers during:
- the machine transport
- the installation
- the machine use and maintenance.

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1.2 MACHINE IDENTIFICATION

(gg-1-2_0.0)

Machine data are punched on the metallic plate applied to the side of the machine frame.

Designation		Abbreviated, conventional description of the machine designation and its function
Marca		Merchandise mark
Anno		Production year
N° Serie		Serial number
kg		Weight (kg)
Tipo		Machine type
Modello		Machine model
Un	V	Rated voltage (volt)
~		Phases number (alternate current)
In	A	Rated current (ampere)
F	Hz	Frequency (hertz)
Icc.	kA	Short circuit breaking capacity of the protective device (kA)
w.d.		Wiring diagram number
Comp.		Machine configurations
Ref.		Internal references



1.3 MAIL CONTACT

(gg-1-3_0.0_ce)

Writing or telephoning to the dealer or to SCM for problems concerning your machine, always specify the following information:

1) machine model
2) serial number
3) voltage and frequency
4) purchase date
5) name of the dealer where the machine was bought
6) detailed information about the trouble
7) detailed information about the working to be carried out
8) period of use - number of working hours

Manufacturer's address:

SCM INDUSTRIA S.p.A.
Via Valdicella, 7
47892 - GUALDICCIOLO - (R.S.M.)
Web: www.scmgroup.com
Email: minimax@scmgroup.com

Assistance Department
from Italy: Tel. 0549/876910 - Fax. 0549/999604

from abroad: Tel. 00378 - 0549/876912 - Fax. 00378 - 0549/999604
E-mail: minimax@scmgroup.com

Spare Parts Department
from Italy: Tel. 0541/674706 - Fax. 0541/674720

from abroad: Tel. 0039 - 0541/674706 - Fax. 0039 - 0541/674720
E-mail: spareparts@scmgroup.com

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1.4 NOTES FOR THE USER

(gg_1-4_0.0_ce)

The handbook describes all operations required for the normal maintenance of the machine.
Do not carry out any operation not described in this handbook.
All operations which require to desmount machine members as well as maintenance operations shall be carried out only by authorized technicians.
For the correct use of the machine carry out the proper instructions given in this handbook.
Only trained and authorized technicians may use the machine and carry out maintenance operations.
Keep the general safety norms as well as the rules of industrial medicine.
Keep this handbook for future necessity.

NOTE-INFORMATION:
- ***use only*** SCM ***parts. The manufacturer is not responsible for damages due to the use of not original parts.***

1.4.1 ABBREVIATIONS USED IN THIS HANDBOOK

(gg-1-41_0.0_ce)

pag.	=	page
fig.	=	figure
par.	=	paragraph
chap.	=	chapter
i.e.	=	example
ref.	=	reference
DPI	=	Individual protective equipment (IPE)

1.4.2 ENCLOSED DOCUMENTATION

(mmax_1-4-2_0.0)

The following attachments are an integral part of this instruction manual:

- Electrical diagrams (read the number of the electrical diagram on the identification plate placed on the machine in the "W.D." line).
- Spare parts catalogue

NOTE-INFORMATION:
the electrical diagrams are for the exclusive use of competent technicians, therefore they are only in Italian and English.

1.5 SYMBOLS USED IN THIS HANDBOOK

(gg-1-5_0.0_ce)

OPT	***OPTIONAL = devices indicated in list price available only upon request.***

	***Operator position.***

	***DANGER-WARNING: imminent dangers could cause serious injuries; careful attention is needed.***

	***NOTE-INFORMATION: technical, very important information.***

	***READ-MANUAL: indicates that before using the machine, you must read the instructions manual and understand all its parts***

	***FORBIDDEN: indicates manouvres, commands or others that cannot be carried out as they can create very dangerous situations for persons and damage the machine.***

	***CAUTION: suitable measures should be taken to prevent accidents or to prevent things from being damaged.***

	**MACHINE OFF STATUS** efore carrying out any type of maintenance and/or making any adjustment to the machine, all of the power supplies (electric and pneumatic) must be switched OFF. Make sure that the machine is stopped power supplies electric and pneumatic (if is present) must be switched OFF. Make sure that the machine is stopped and that it is impossible for it to start up unexpectedly (main switch in the “0” position and locked; compressed air cut-off valve closed and compressed air cut-off valve closed and locked).

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Personnel who will be working on the machine must, apart from being professionally trained for the job, read the manuals paying particular attention to the safety regulations and the paragraphs relative to his area of competence. The machine operators are identified as follows:



ASSIGNED OPERATOR

A professionally trained operator who is at least 18 years old, in compliance with the laws in force in the country where the machine is being used, qualified to exclusively turn on, use, tool-up, set (only with the safety devices enabled and the machine turned off) and to switch off the machine, in full compliance with the instructions given in this with the instructions given in this manual.



MAINTENANCE ELECTRICIAN

A qualified technician (electrician with the technical/professional qualifications required by current regulations), authorized to exclusively carry out operations on the electric devices in making adjustments, performing maintenance and/or repairs, even with the power supply ON and the safety devices disabled (subject to the consent of the health and safety officer), in full compliance with the instructions given in this manual or in other specific documents furnished exclusively by the Manufacturer.



OPERATOR IN CHARGE OF MOVING THE MACHINE

A professionally trained operator who is at least 18 years old, in compliance with the laws in force in the country where the machine is being used, qualified to drive fork lift trucks, bridge cranes or cranes used to safely move the machine and/or parts of the used to safely move the machine and/or parts of the machine.



MAINTENANCE MECHANIC

A skilled technician qualifi ed to exclusively carry out operations on the mechanical, hydraulic and pneumatic parts of the machine, to make adjustments, perform maintenance and/or repairs, even with the safety device disabled (subject to the consent of the health and safety officer), in full compliance with the instructions given in this manual or in other specific documents furnished exclusively by the Manufacturer.



COMPANY HEALTH AND SAFETY OFFICER

A qualified technician, designated by the Client with the technical/professional qualifications required by current regulations relative to worker health and safety in the by current regulations relative to worker health and safety in the workplace.



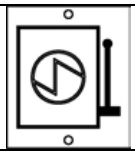
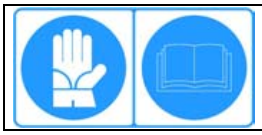
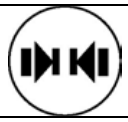
MANUFACTURER'S TECHNICIAN

A qualified technician sent by the Manufacturer and/or Dealer who is authorized to provide required technical assistance, to perform routine and extraordinary maintenance operations and/or operations not referred to in this manual which require specific and detailed knowledge of the machine.

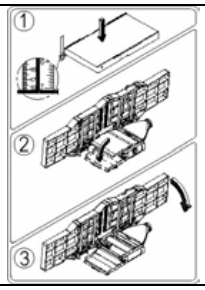
1.6 SYMBOLS ON THE MACHINE

(gc-1-6_0.0_ce)

CAUTION:
the operator must pay attention to the signs and plates fixed on the machine.

	***Danger due to electric power***	**- B -**
	***It cuts electrical power supply to the machine***	**- D -**
	***Use gloves for handling the tools*** ***Read the manual and follow the manufacturer's instructions***	**- E -**
	***Technical specifications plate***	**- G -**
	***Indicates the point where the hooks shall be applied for machine raising***	**- L -**
	***Locking symbol***	**- M -**

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	*Danger: cutting of upper limbs (rotating tools)*	**- N -**
	*Indicates the tool rotation direction*	**- O -**
	*Thicknessing table adjusting*	**- P -**
	*Table closure plate*	**- U -**

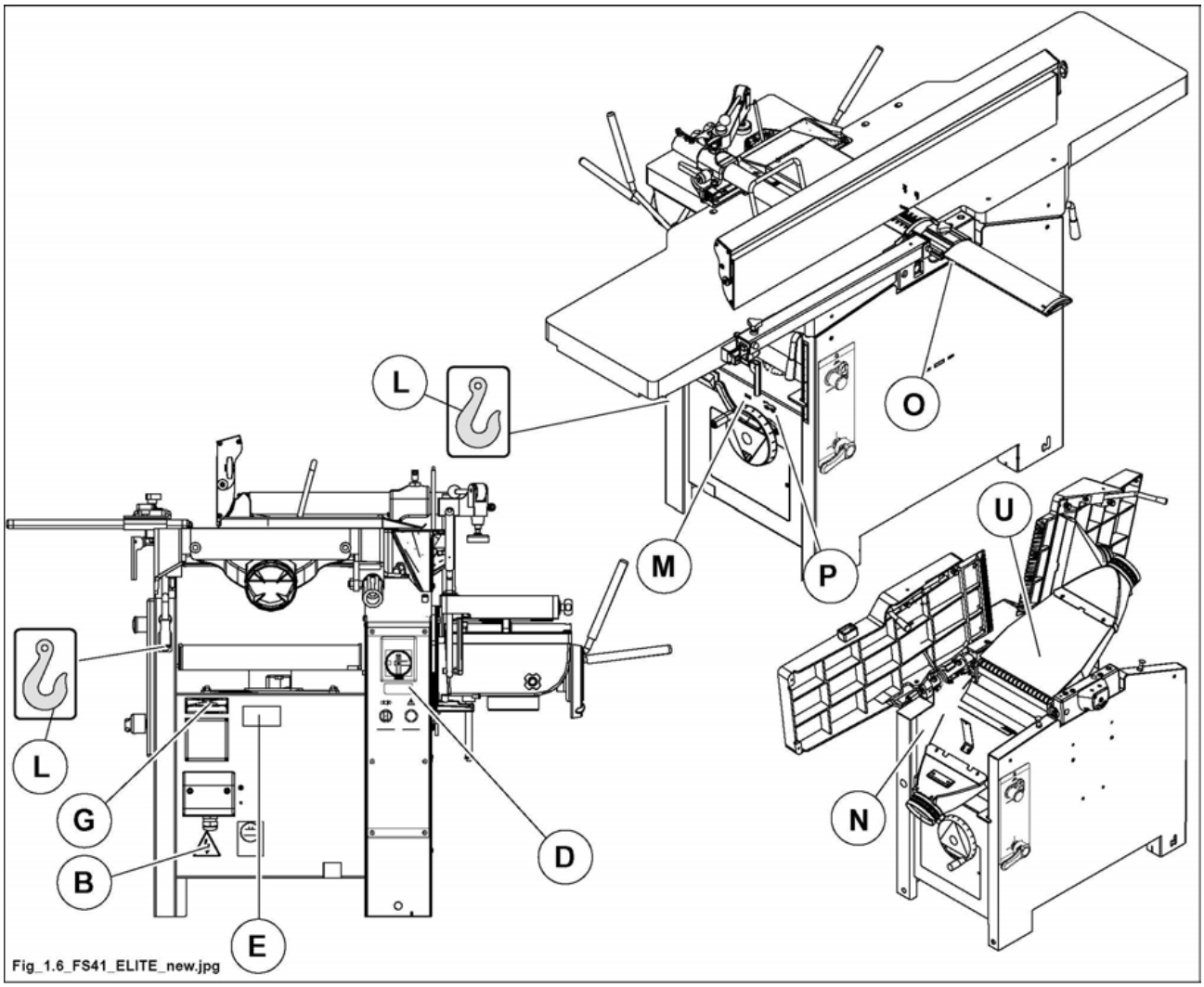


Fig. 1.6A

1.7 MACHINE DESCRIPTION

(fs_1-7_0.0)
The machine is a surfacingthicknessing planer equipped with a tiltable surface fence which ranges from 90° to 45°. The machine may be equipped with a fixed or self centring slotter (OPT) and two-speed thicknessing feed rollers.

The basic machine parts are herein referred to and described to make you quickly familiar with them since they shall be later mentioned in this manual. Please pay attention to the following descriptions:

1 - SURFACING TABLES

2 - THICKNESSING TABLES

3 - SLOTTER

4 - BUZZ PLANER

5 - CONTROL BOARD

6 - FEED ROLLER DRIVE LEVER

7 - LIFTING LOCK

8 - PRESSER

9 - PUSHER

10 - SHIM LIFTING

11 - THICKNESSING TABLE LIFTING DISPLAY

12 - SURFACING TABLE LOCKING

13 - TILTABLE ADDED GUIDE

14 - SET OF TOOLS AND WRENCHES FOR USE AND MAINTENANCE

(**) - FIXED GUARDS THAT CAN BE REMOVED FOR MAINTENANCE OR CLEANING

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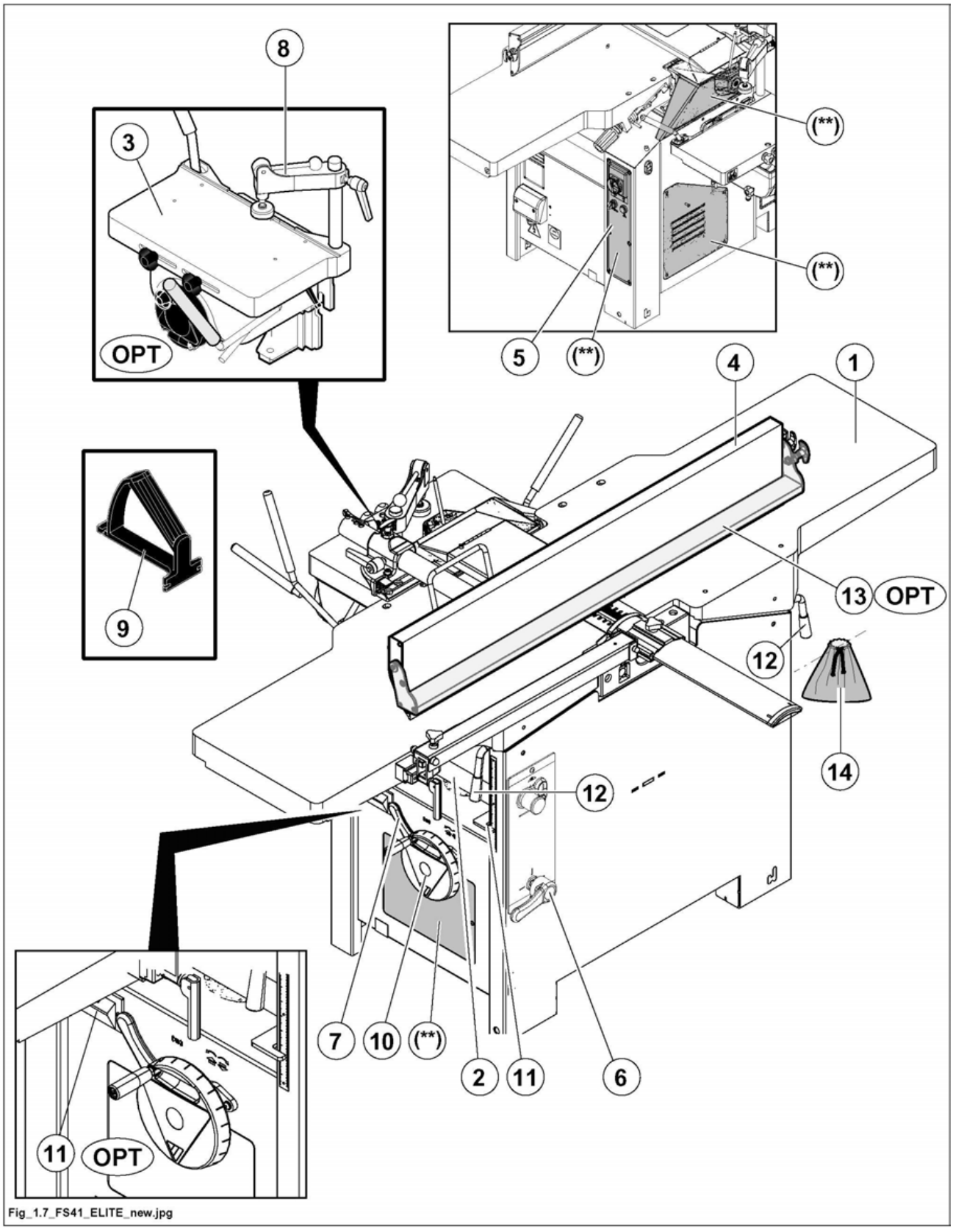

8
3
OPT
(**)
(**)
5
(**)
4
1
9
13
OPT
12
14
12
7
10
(**)
2
11
6
11
OPT
Fig_1.7_FS41_ELITE_new.jpg

Fig. 1.7

1.8 CONDITIONS FORESEEN FOR THE USE

(ev_1-8_0.0)

This machine has been designed to drill and to plane heartwood, fiberboard, chipboard panels, plywood and lamin board both coated and not coated.



DANGER-WARNING:
materials different from those quoted above, since dissimilar to wood, are thus prohibited: the user is solely responsible for any damage caused by machining such materials.



DANGER-WARNING:
the material to be processed must not contain metal parts.

1.9 TOOLS WHICH MAY BE USED

(ev_1-9_0.0)

The machine has been designed to use only tools for manual feed (marked MAN), in accordance with EN 847-1 Norm, proper for the material used.

By manual feed we mean the piece guidance by means of:
- the hand,
- the sliding table pushed by hand,
- the feeder.

Helicoidal planer with tips (OPT)
Each tip-tool has 4 cutting edges so it can be utilized in maxim efficiency conditions without regrindings.

1.10 WORKING ENVIRONMENT

(gg_1-9_0.0)

The machine can work under these conditions:
Max. humidity 90%
Max. altitudine sea level: 1000 m (in case of higher altitude apply to the machine manufacturer)
Temperature: Min. +10° C ; Max. +35° C (macchina in operation)
Temperature: Min. +05° C ; Max. +35° C (machine off, not in working condition)
Always connect the machine to the suction system (see par. 4-5).
The machine may not be used in the open air.
The machine was designed for industrial use.
The machine may not operate in explosive rooms.

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1.11 INCORRECT USE THAT CAN BE REASONABLY EXPECTED

(1.1_(01-2010))

- IT IS FORBIDDEN to remove the planer spindle during machining (Chap.10).
- IT IS FORBIDDEN to push small parts forwards without pusher (Chap.15).
- DO NOT use the machine if you are not an authorised and trained operator.
- DO NOT use the machine in ways that differ from those that the machine has been designed for and described in this manual.
- DO NOT use the machine without the required guards for every machining process or removing part of the guards (DO NOT disassemble the fixed and mobile guards, bypass the safety microswitches)
- DO NOT use the machine in ways that differ from those described above (Sect.1.8).
- DO NOT use the machine in environmental conditions that differ from the ones indicated above (Sect.1.10)
- DO NOT handle the tools without individual protective equipment (not supplied by SCM) for the hands and forearms.
- DO NOT use the machine without individual protective equipment from noise (ear plugs)(not supplied by SCM).
- DO NOT use the machine without extraction.
- DO NOT use the machine without having assessed the need to use individual protective equipment (not supplied by SCM) in relation to wood dust (we recommend the use of individual protective equipment: hard wood dust is carcinogenic).
- DO NOT use the machine if the area around the machine is not flat, well maintained and free of loose material (e.g. shavings and rejects).
- DO NOT machine different materials from the ones that the machine has been designed for and that are not set out in this manual (Sect.1.8).
- DO NOT machine materials of dimensions that the machine has not been designed for and that are not set out in this manual(Sect.3.1).
- DO NOT use tools not included in standard EN847-1 or of a size not compatible with the machine technical specifications.
- DO NOT make modifications to the machine.
- DO NOT allow children, domestic animals or any unauthorised personnel in the work area.

- IT IS FORBIDDEN to use tools that are not suitable for the work piece.

NOTE-INFORMATION:
performing modifications, voids the machine's Declaration of Conformity.
The user will be solely responsible for any damages resulting from improper use.

FORBIDDEN:
DO NOT use the machine without having first checked that the safety protections have been installed correctly and secured with the devices required and in the way indicated in this manual.Before every use, with the machine off and tools stopped, try to move the protection to ensure it is installed correctly and fixed completely.

1.12 RESIDUAL RISKS

(ev_1-12_0.0)

Any machine tool may be potentially dangerous, do not forget it.
The final safety depends on you.
The machine is equipped with proper guards to ensure the safe machine operation.
Such guards are efficient if they are properly used and kept.
Even if the safety prescriptions are kept and the machine use occurs in accordance with the rules described in this handbook, the following risks may rise:

- **contact with the standstill or rotating tool.**
- **Contact with the tool stopped or rotating from the opening in infeed and from the piece outfeed.**
- **Contact with rotating members (belts, pulleys, chains ...).**
- **Kickback of the workpiece or of its parts (splits): never stop in the position corresponding to the trajectory of possible split ejection.**
- **Ejection of tool inserts: never stop in the position corresponding to the trajectory of possibile split ejection.**
- **Dust inhalation in case of working without suction.**
- **Fulguration caused by contact with hot parts.**
- **Contrary direction of tool rotation due to wrong electric connection.**
- **Danger due to wrong working position of the operator.**
- **Danger caused by the wrong tool fitting.**
- **Fire resulting from an incorrect machine use in conjunction with an accumulation of shavings and/or dusts.**

1.13 OPERATOR'S TRAINING

(ev_1-13_0.0)

It is compulsory that the machine operator is trained for the machine set up and operation.
The operators shall carefully read this handbook and consider the safety rules.

In particular the training shall include:
a) the principles of the right use and operation of the machine.
b) The correct handling of the workpieces during the working.
c) The right position of the hands to the tools, before, during and after the cutting.
d) The right selection of the tools.
e) The piece feed to the tool which shall occur in the contrary direction to the spindle rotation direction.
f) The selection of the proper spindle speed required by the tool.

The operators are to be informed about the dangers due to the machine operation and about the precautions to be taken; besides the operator shall be able to carry out periodical tests on guards and safety devices.

NOTE-INFORMATION:
a padlock for locking the main switch of the power supply is required.
The authorized operator shall keep the key.

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SAFETY OVER ALL

1.14 SAFETY RULES

(gg_1-13_0.0)

1- Carefully read this instructions manual completely before starting the machine.
2- Carefully read the warning plates applied on the machine and comply with their indications.
3- Only correctly trained personnel can use the machine.
4- The operator training must include information about the dangers associated with using the machine and the precautions that he must observe.
5- The operator must trained on the correct use of the guards and safety devices.
Moreover he must be trained to perform regular controls on the aforementioned guards and safety devices.
6- The operator must never leave the machine unattended while it is operating.
7- This machine has been designed to be used by one operator.
8- This machine has been manufactured to provide maximum safety along with optimum performance.
9- Unauthorised changes to the machine release the manufacturer of any responsibility from any damages that may result.
10- Do not use the machine under the influence of alcohol, drugs or sleep inducing medication.

The safety depends on you. Any machine tool may be potentially dangerous, do not forget it.

1.14.1 PERSONAL SAFETY

(gg_1-13-1_0.0)

1- Before starting the machine the operator shall already have read the handbook.
Your eyes are the best safety device you have: carefully look before moving.
2- Experience teaches that there are various objects on a person that can cause injuries; take off rings, watches, bracelets; button your sleeves tightly around yuor wrists, take off ties that could be caught in tight places, keep hair gathered underneath proper nets (cap, elastics, hair pins). Use prescribed footwear usually recommended by all countries.

ALWAYS WEAR THE FOLLOWING INDIVIDUAL PROTECTIVE EQUIPMENT (IPE) (NOT SUPPLIED BY THE SCM**) BEFORE STARTING TO WORK:**

A- Proper aprons, e.g: aprons made of double leather with synthetic fiber cloth insertion (not supplied by SCM**) to protect the operator in case of splinters ejection.**
B- Glasses or protective shields for your eyes.
C- Proper means for ear protection.
D- Proper means against dust inhalation (masks).
E- Gloves for handling the blades.
F- Proper shoes with reinforced steel point and rubber soles.

1.14.2 MACHINE SAFETY

(ev_1-14-2_0.0)

DANGER-WARNING:
the machine must be fixed to the floor.
Fix the supplied angles (B fig. 4.2) to machine feet (A fig. 4.2) and fix on ground by means of expansion bolts (C fig. 4.2) (not supplied).

1- Be extremely careful when starting any working and periodically check the shields and safety devices.
2- Never start the machine without having properly closed the covers.
3- Before lifting the thicknessing table make sure that there are no wood residues on the table.
4- Before starting the machine make sure that the worktable is free from parts which do not relate to the working.
5- It is forbidden to move the table when the machine is running.
6- Do not machine workpieces too small or too big for the machine.
See relative paragraph 3.1 "DIMENSIONS OF WORKPIECE TO BE MILLED".
7- Do not machine pieces with defects (deflections, clefts, knots, metallic parts, ...).
8- Work only with all guards properly fitted and efficient.
The use of the machine is not permitted if such conditions are not kept.
9- In case of long pieces use roller tables or table extensions (not supplied by SCM).
10- It is necessary to connect all suction hoods to the suction system.
Before starting the working make sure that the suction system is switched on.
11- Test working to check the cutterblock adjustment may not carried out without the guards required.
12- After inserting the workpiece, move to the machine side.
13- Never try to remove the wastes or other parts of the workpiece from the working area when the machine is in operation.
14- Push the workpiece forwards by using a proper pusher or feeder.
15- After a given working period the transmission belts get slack; this may cause an increase of the time required to stop the tool. In that case immediately stretch the belts (see paragraph 20-28).
16- Periodically remove chips and dust to avoid fire risk: carry out this operation always with the machine off.
17- Every evening when the working is finished carefully clean the anti-kick back fingers and make sure that they can freely rotate. The presence of chips and dust in position corresponding to the anti-kick back fingers may damage the right machine operation. The opening of the anti-kick back fingers may cause the ejection of splints against the operator.
18- Remove the resin residues among the anti-kick back fingers by washing the entire unit with a brush and turpentine.
NEVER OIL OR GREASE THE ANTI-KICK BACK FINGERS.
Check that the non-return hammers are functioning efficiently after at least every hour of operation.
19- Adjustments to the guard and to the planer guide must be made when the machine is off.
20- Always fasten the machine to the floor.

DANGER-WARNING:
in case of long machining pauses or machine stops turn main switch to 0 and lock it.

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FORBIDDEN:
DO NOT use the machine without having first checked that the safety protections have been installed correctly and secured with the devices required and in the way indicated in this manual.Before every use, with the machine off and tools stopped, try to move the protection to ensure it is installed correctly and fixed completely.



1.14.3 TOOLS SAFETY

(ev_1-14-3_0.0)

- Before fitting the tools, make sure that each support surface is clean, free from dents and perfectly flat.
- The tools shall be fitted and set when the machine is off, STILL TOOLS and with proper instruments (gauge, comparator).
- Make sure that the tools are perfectly balanced, sharp and well clamped.
  Not sharp tools reduce not only the quality of the finished piece but they increase the piece kickback danger.
- Fit the tools in the right working direction.
- Use only tools in accordance with EN 847-1 Norm and proper for manual feed.
- Before starting the machine make sure that the tools do not touch the fixed parts of the machine.
- Start working only when the tools have reached the right cutting speed.

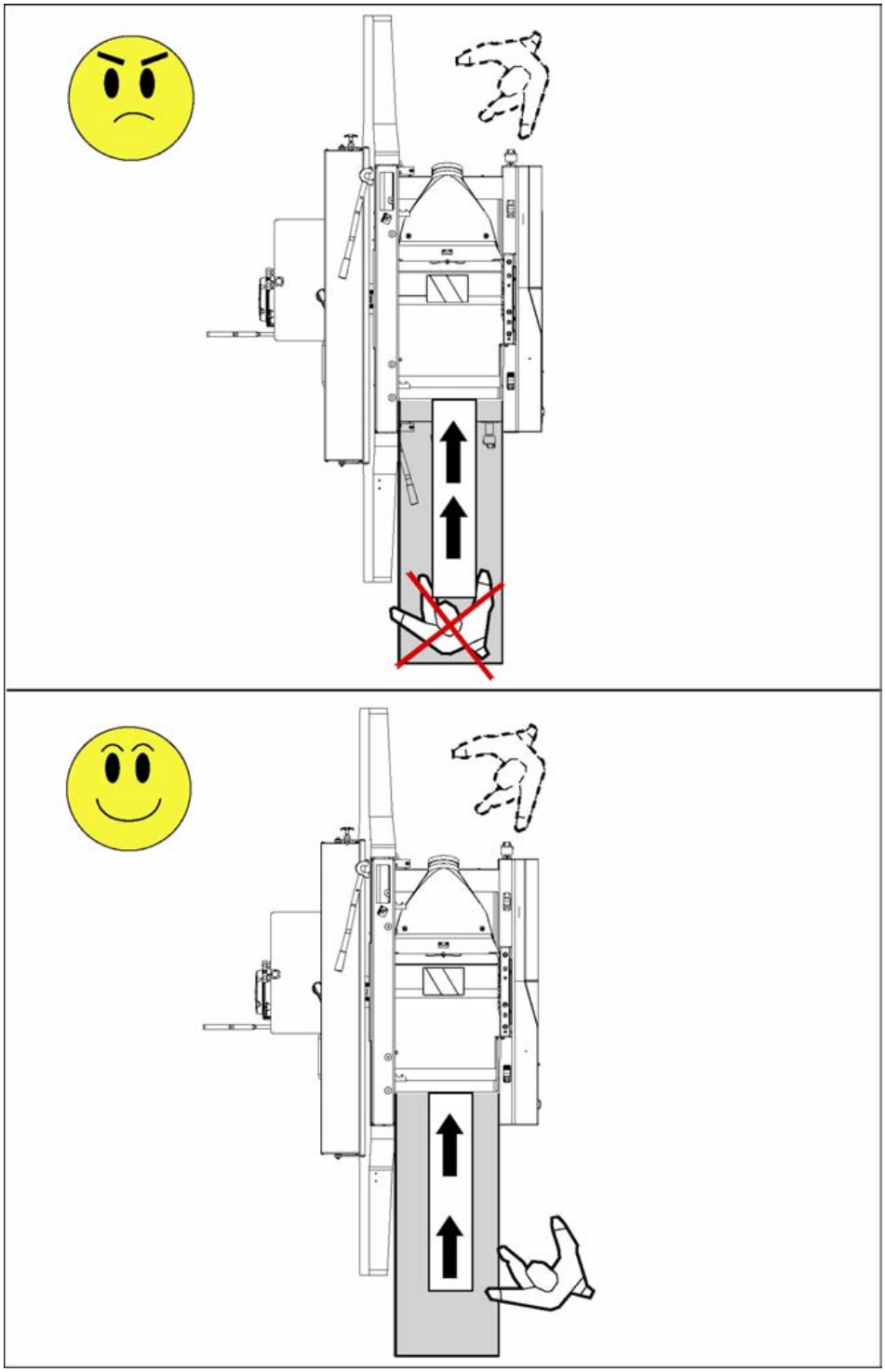
1.14.4 WORKING AREA SAFETY

(gg_1-13-4_0.0)

The working area shall have a good lighting (at least 500 LUX) and a sufficient room (Chap. 3.7) so that the operator is always out of a dangerous area.
The floor shall be well leveled to avoid slipping danger and also free from loose material (e.g. waste, chips).
Only the authorized operator may stay in the working area.
The operator shall never stay in the trajectory where eventual splits or tool parts are ejected (Chap. 3.7).
If along this trajectory there is another work station (that is another machine) or a passage for persons, immediately install proper protective barriers.

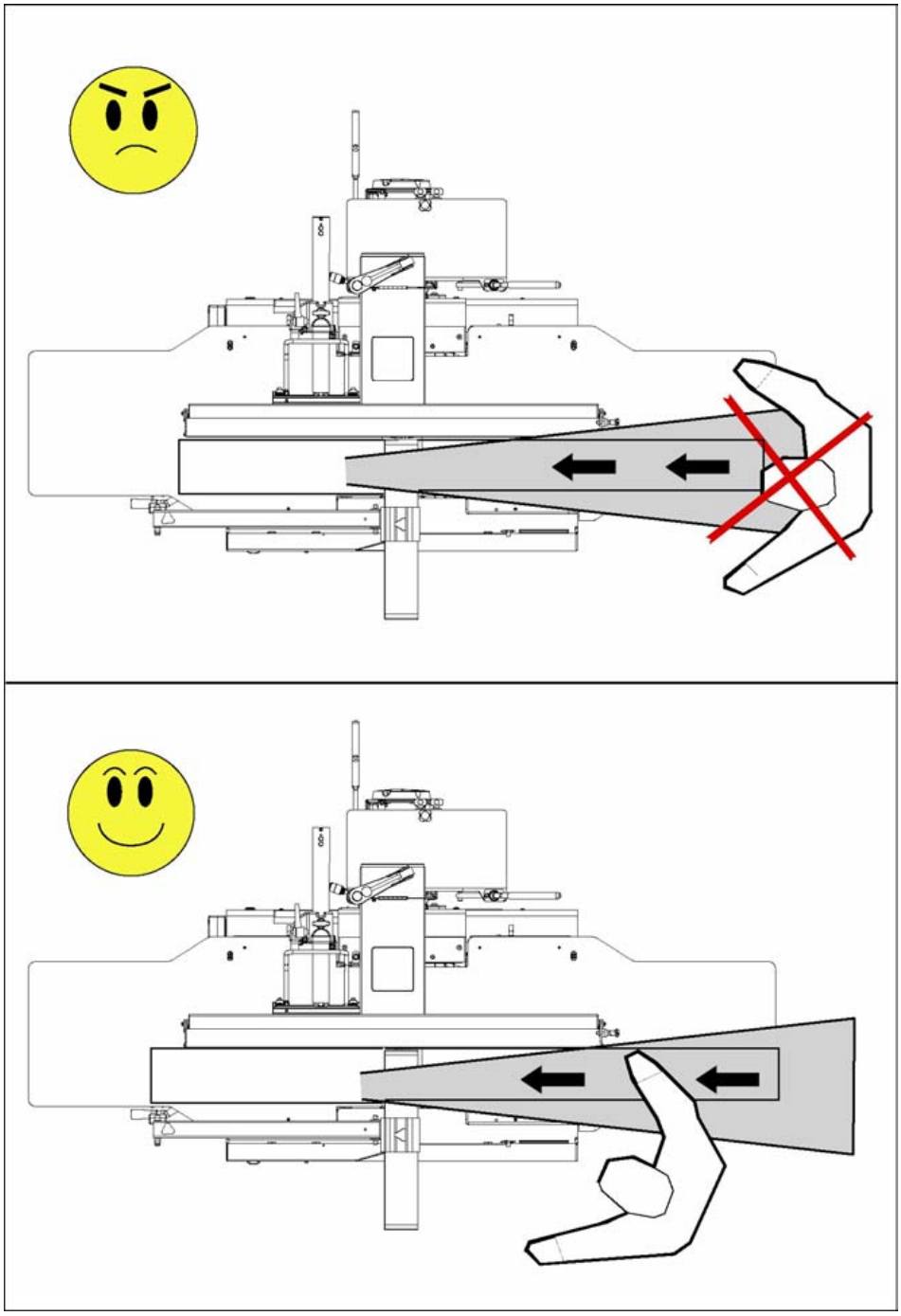
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Operator position *THICKNESSING PLANER*



DANGER-WARNING
the operator must take a working position to the machine so that it is out of the dangerous area due to the reject phenomenon (shaded area in figure).
If along this trajectory there is another work station (that is another machine) or a passage for persons, immediately install proper protective barriers.

Operator position *SURFACE PLANING MACHINE*



DANGER-WARNING
the operator must take a working position to the machine so that it is out of the dangerous area due to the reject phenomenon (shaded area in figure).
If along this trajectory there is another work station (that is another machine) or a passage for persons, immediately install proper protective barriers.

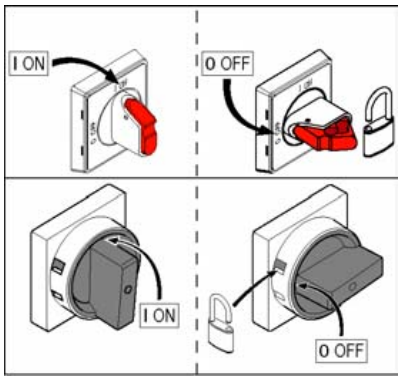
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1.14.5 MAINTENANCE SAFETY

(ev_1-14-5_0.0)

DO NOT THINK that the electric current is switched off during the maintenance .... CHECK IT PERSONALLY!
Strictly follow the indications provided for the frequency of the controls and maintenance of devices subject to checks and/or wear.

1- Stop the machine to carry out adjustments or to demount any machine, turn the main switch to zero and lock it, then indicate it by a sign.
The operator who carries out the machine set up, maintenance and cleaning shall keep the only key.



2- Completely stop the machine before cleaning operations and before removing any guard to carry out the maintenance.
3- The general cleaning of the machine (in particular of worktable) and of the surrounding floor is an important safety factor.
4- Regularly carry out cleaning and maintenance operations: remove chips and dust to avoid fire risk.
5- Use proper gloves for handling the tools.
6- The tools require a regular maintenance: when necessary replace them.
7- In case of any trouble concerning the machine, the guards and the tools, it is necessary to immediately take the proper measures.

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1.15 EMERGENCY CONDITIONS

(ev_1-15_0.0)

DANGER-WARNING:
in case of flooding of the room where the machine is housed, immediately disconnect the electrical power supply. Before starting work, have the machine checked by a specialised technician.

DANGER-WARNING:
in case of fire, immediately disconnect the electrical power supply and intervene using suitable fire extinguishers directing the jets at the base of the flames. Even if the machine has suffered no apparent damage, before restarting work have the machine checked by a specialised technician.

DANGER-WARNING:
if there is a mechanical block follow the following instructions to release the machine safely:
- isolate the machine electrically and pneumatically (to isolate the machine electrically rotate the main electrical switch to the 0 position and padlock it; disable the uninterruptible power supply, if one has been installed on the machine; to isolate the machine pneumatically rotate the lever at the pneumatic system inlet to the closed position and padlock it);
- contact the manufacturer's SERVICE centre (Par. 1.3).

A free space without obstructions must be provided around the machine (see par. 3.7), to allow fast escape in case of danger.

This machine must not be operated in explosive environments.

1.16 MACHINE REMOVAL - STORING - DEMOLITION

(ev_1-16_0.0)

To remove the machine, disconnect it from the electric and pneumatic system. Follow the instructions in chap. 4.

In case of extended inactivity of the machine, disconnect it from the electrical and pneumatic system. Thoroughly clean it as already described for ordinary cleaning and cover the work and sliding tables and the tool holder spindles with antirust protection. Do not store the machine in humid environments and protect it from atmospheric agents.

The machine is constructed in non-toxic unharmful materials. In case of demolition, separate the ferrous material from the plastic materials and send them to the respective scrap yards.

1.16.1 OUT OF ORDER MACHINE

(1.16.1)

The machine is manufactured with non-toxic or harmful materials; in case of scrapping separate the ferrous materials from the plastic materials and scrap respectively. We recommend contacting a specialised and authorised company, in compliance with the applicable laws and standards.

The operators moving the machine and the maintenance personnel must wear the IPE required for the risks involved with the type of use and in compliance with the applicable laws and standards.

To move and transport the machine refer to the instructions in chap. 4.

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2.1 Arrangement and description of emergency devices (Fig. 2.1).....2

2.2 Arrangement and description of safety devices (Fig. 2.2).....4

2.1 ARRANGEMENT AND DESCRIPTION OF EMERGENCY DEVICES (FIG. 2.1)

(ev-2-1.0.0)

Emergency equipment consists of special devices whereby operators can promptly stop the machine if necessary or in case of danger.

DANGER-WARNING:
emergency devices must never be removed or disconnected for no reason whatsoever ("Machine Directive" 2006/42/CE).

Description

A - Emergency mushroom-head push-button:
it causes an immediate emergency stop.

CAUTION:
periodically, check that the devices, listed above, are efficient.

DANGER-WARNING:
any anomalies found during the control of these devices, must be reported promptly to the manager , who will put the machine out of service and call the SCM ***Support Service.***

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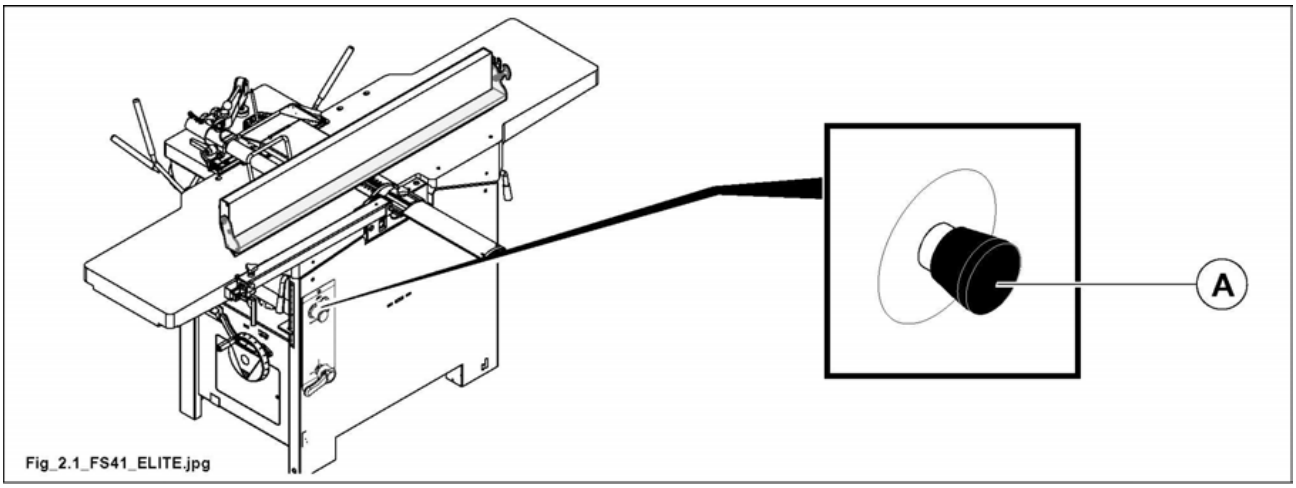


Fig. 2.1

2.2 ARRANGEMENT AND DESCRIPTION OF SAFETY DEVICES (FIG. 2.2)

(ev-2-2.0.0)

Safety devices are special accident-prevention guards whereby the machine is protected against possibly dangerous situations.

DANGER-WARNING:
safety devices must never be removed or disconnected for no reason whatsoever ("Direttiva macchine" 2006/42/CE).

Description

A - Main electrical switch (padlockable):
when at zero (OFF), it cuts electrical power supply to the machine.

B - Anti-kickback fingers:
anti-kickback fingers, working with pieces of different thickness, prevent the workpiece to be thrown back towards the operator, thus providing an effective protection.

C - Bridge guard for the cutterblock (C fig. 2.2).

D - Automatic brake (OPT) :
it acts directly on working unit.

E - Turnover additional fence (E fig.2.2), OPT.

F - Clamping arm (F fig.2.2) (when OPT mortiser is present).

G - Rear guard for cutterblock (G fig.2.2).

P - Plane microswitch:
stops machine when planing tables tip. It commands the operating unit to perform thicknessing machinings whenever the hood S is overturned.

CAUTION:
periodically, check that the devices, listed above, are efficient.

DANGER-WARNING:
any anomalies found during the control of these devices, must be reported promptly to the manager, who will put the machine out of service and call the SCM ***Support Service.***

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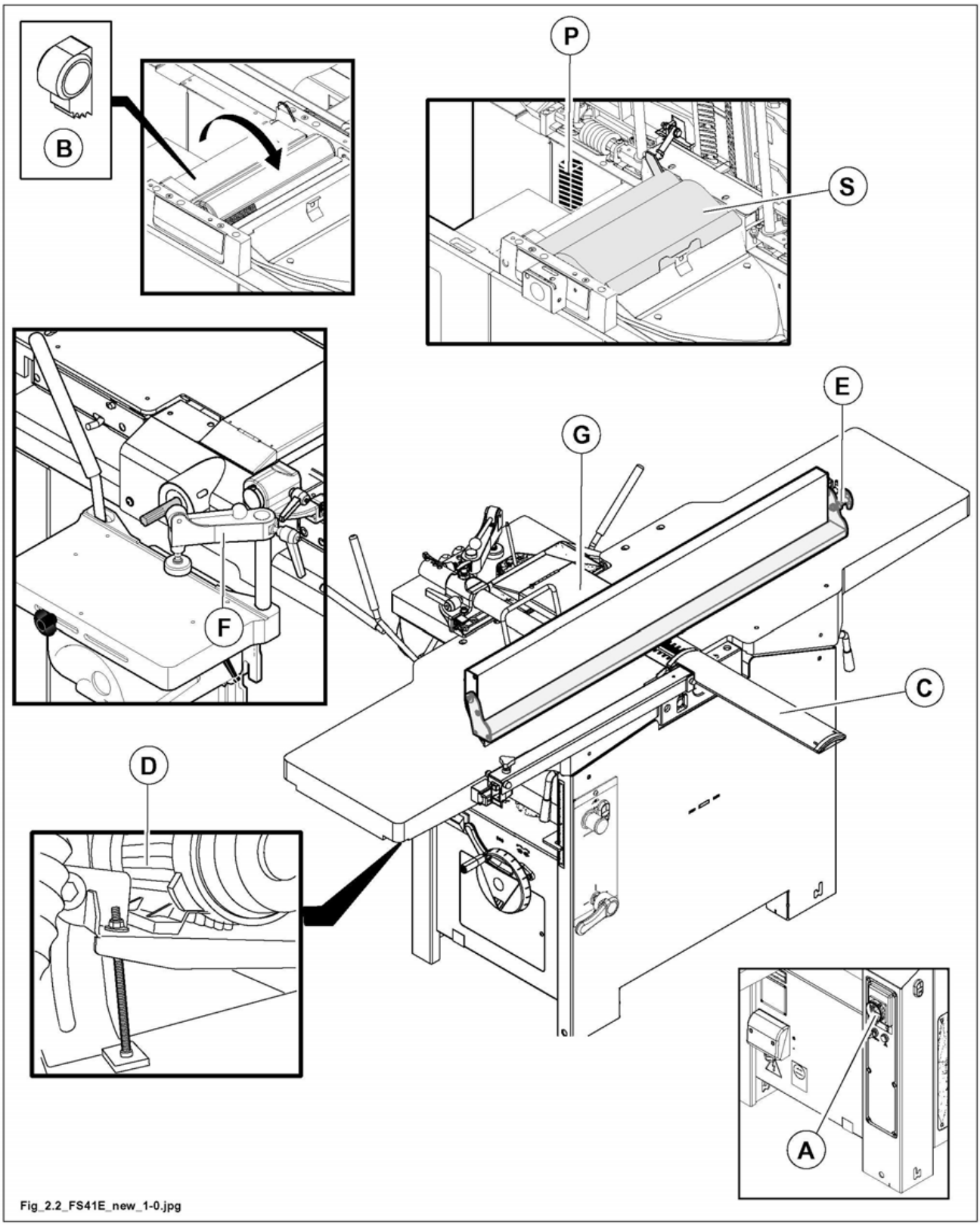


Fig. 2.2

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3.1 Dimensions of workpiece to be thicknessed 2

3.2 Technical data 4

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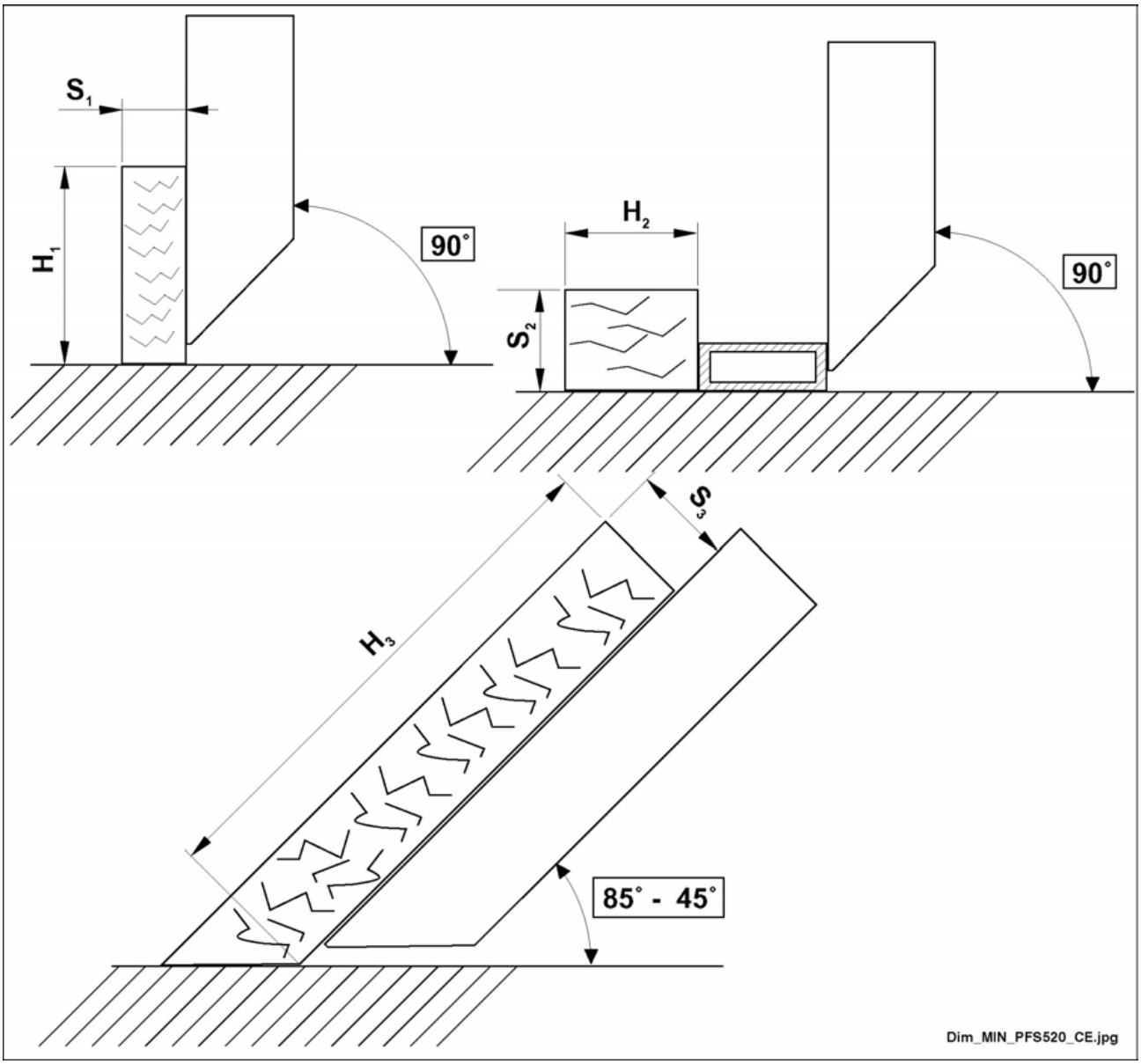
3.1 DIMENSIONS OF WORKPIECE TO BE THICKNESSED

(fs_3-1_0.0)

SURFACE PLANING MACHINE

Max. thickness under the guard	75 mm	
Max. length		**DANGER-WARNING: may be not defined; we recommend to use table extensions (not supplied by** SCM**) at entry and exit side in case of panels longer than 2000 mm.**
Max. width	410 mm	
Min. thickness	**H_1**=30 mm	
	H_2=15 mm	
	H_3=50 mm	
Min. length	150 mm	**We recommend to use pushers (not supplied by** SCM**).**
		DANGER-WARNING: never machine shorter workpieces.
Min. width	**S_1**=10 mm	**We recommend to use pushers (not supplied by** SCM**) and the additional tilting guide** (OPT)**.**
	S_2=15 mm	**DANGER-WARNING: never machine shorter workpieces.**
	S_3=15 mm	

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THICKNESSING PLANER

Max. thickness	230 mm	
Max. length		**DANGER-WARNING: may be not defined; we recommend to use table extensions (not supplied by SCM) at entry and exit side in case of panels longer than 400 mm.**
Max. width	410 mm	
Min. thickness	3,0 mm	
Min. length	160 mm	**DANGER-WARNING: never machine shorter workpieces.**
Min. width	10 mm	**DANGER-WARNING: never machine shorter workpieces.**

3.2 TECHNICAL DATA

(fs_3-2_0.0)

GENERAL TECHNICAL DATA			
Planer table total length		2000	mm
Useful working length (Planer - Thicknesser)		410	mm
Max. depth of cut in one stroke (Thicknesser)		5	mm
Max. depth of cut in one stroke (Planer)		5	mm
Cutterblock diameter		87	mm
Knives		30x3x410	N° 3
Cutterblock speed		5000	rpm
Time required to stop the cutterblock		less than 10 sec.	
Fence dimensions		1200x160	mm
Motors:			
Motor power	50 Hz	4,0	kW
	60 Hz	4,8	kW
Technical details: see data plate on the motor Duty cycle: S6 - 40% (excluded from the energy efficiency constraints of EC Commission Regulation 640/2009) Conditions of service: see Par. 1.10			
Planer guide tilt		from 90° to 45°	
Feed speed to thicknesser		6-12	m/min
Weight without mortiser: see identification plate on the machine			

Helicoidal planer with tips OPT

TIP-TOOL	15x15x2,5	66

SUCTION SPECIFICATIONS			
			Vacuum (Pa)
Thickness hood suction mouth diameter	Ø 120	mm	1704 (3340)
Planer hood suction mouth diameter	Ø 120	mm	1184 (2321)
Suction air speed: chips dry (chips wet)	20 (28)	m/sec	
Consumo aria aspirazione [Ø 120]	814 (1140)	m³/h	

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3.3 STANDARD ACCESSORIES

(fs_3-3_0.0)

1.st top feed roller (inlet side): steel scored roller
One feed roller (exit side): steel roller

Height adjusting of thicknessing table by handwheel

Knife setting gauge
N° 3 knives
Suction hood of 120 mm diameter
Direct start of main motor

Planer spindle guards
Tilting guide for supporting pieces
Manual movement of table (planer) in infeed
Reading of removal (planer) with index on sliding scale
Handle for pusher
Set of wrenches for maintenance operations

3.4 OPTIONAL ACCESSORIES

(fs-3-4-0.0)

Displacing wheels
Cutterblock with throw-away knives

Additional turnover fence

Numerical display for the vertical motion of the thicknessing table

Auto-brake motor
Main motor (three-phase) - S6 / 40%: ..... 5,0 kW - 50 Hz (6,0 kW - 60 Hz)
Main motor (three-phase) - S6 / 40%: ..... 7,0 kW - 50 Hz
Single phase motor - S6 / 40%: ..... 2,2 kW - 50 Hz

Helicoidal planer with tips

SUVAMATIC guard installation KIT

Mortiser with:

- Table size	470X230	mm
- Longitudinal stroke	160	mm
- Trasverse stroke	120	mm
- Vertical stroke	110	mm
- Coupling of right-hand bit Ø max.	16	mm
- Suction hood diameter	120	mm
- Suction air speed - chips dry (chips wet)	20 (28)	m/sec
- Suction air consumption	814 (1140)	m^3/h
- Weight	~50	kg
- clamping arm		
- selfcentering chuck for bits of max. diameter	16	mm
- collet spindle:		
Ø	16	mm
Ø	10	mm
Ø	5	mm

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3.5 NOISINESS LEVEL

(fs_3-5_0.0)

DECLARED DUAL-NUMBER NOISE EMISSION VALUES in accordance with ISO 4871

Cutterblock with knives (STD)

Operating conditions		**Surface planning**		(according to norm EN ISO 19085-1:2017)*			
		Thicknessing machine		(according to norm EN ISO 19085-1:2017)*			
Measured size description		Reference norm	Uncertainity **K**	**Surface planning**		**Thicknessing machine**	
Lop: sound pressure level at operator station dB (A) and peak level [dB(C)]	Operator station	EN ISO 11202:2010	4 dB	**VSA**	**LAV**	**VSA**	**LAV**
	INPUT			82	92 [112]	72	85 [101]
	OUTPUT					71	82 [98]
Lw: sound power level dB (A) re 1pW		EN ISO 3744:2010	2 dB	88	98	85	96
The maximum istantaneus noise level pressure is under 130 dB (C).							
VSA: Idle working without suction				**LAV**: In operation			
* Refer to the test document N° 2015036 to analyse the actual operating conditions used to make the test, different from those operating conditions prescribed by the norm mentioned above.							

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Cutterblock with throw-away knives OPT

Operating conditions		**Surface planning**		(according to norm EN ISO 19085-1:2017)*			
		Thicknessing machine		(according to norm EN ISO 19085-1:2017)*			
Measured size description		Reference norm	Uncertainity **K**	**Surface planning**		**Thicknessing machine**	
Lop: sound pressure level at operator station dB (A) and peak level [dB(C)]	Operator station	EN ISO 11202:2010	4 dB	**VSA**	**LAV**	**VSA**	**LAV**
	INPUT			86	92 [112]	75	88 [109]
	OUTPUT					72	85 [104]
Lw: sound power level dB (A) re 1pW		EN ISO 3744:2010	2 dB	96	103	86	99
The maximum istantaneus noise level pressure is under 130 dB (C).							
VSA: Idle working without suction				**LAV**: In operation			
* Refer to the test document N° 2015035 to analyse the actual operating conditions used to make the test, different from those operating conditions prescribed by the norm mentioned above.							

Helicoidal planer with tips OPT

<table>
<tr><td colspan="2" rowspan="2">Operating conditions</td><td colspan="2">Surface planning</td><td colspan="4">(according to norm EN ISO 19085-1:2017)*</td></tr>
<tr><td colspan="2">Thicknessing machine</td><td colspan="4">(according to norm EN ISO 19085-1:2017)*</td></tr>
<tr><td colspan="2">Measured size description</td><td>Reference norm</td><td>Uncertainity K</td><td colspan="2">Surface planning</td><td colspan="2">Thicknessing machine</td></tr>
<tr><td rowspan="3">Lop: sound pressure level at operator station dB (A) and peak level [dB(C)]</td><td>Operator station</td><td rowspan="3">EN ISO 11202:2010</td><td rowspan="3">4 dB</td><td>VSA</td><td>LAV</td><td>VSA</td><td>LAV</td></tr>
<tr><td>INPUT</td><td>70</td><td>84
[105]</td><td>68</td><td>79
[97]</td></tr>
<tr><td>OUTPUT</td><td colspan="2"></td><td>66</td><td>77
[96]</td></tr>
<tr><td colspan="2">Lw: sound power level dB (A) re 1pW</td><td>EN ISO 3744:2010</td><td>2 dB</td><td>79</td><td>93</td><td>81</td><td>91</td></tr>
<tr><td colspan="8">The maximum istantaneus noise level pressure is under 130 dB (C).</td></tr>
<tr><td colspan="4">VSA: Idle working without suction</td><td colspan="4">LAV: In operation</td></tr>
<tr><td colspan="8">* Refer to the test document N° 2015034 to analyse the actual operating conditions used to make the test, different from those operating conditions prescribed by the norm mentioned above.</td></tr>
</table>

DANGER-WARNING
the noise levels which have been measured are emission levels and not levels of safe working. The relation between emission levels and exposure levels may not be used to determine whether further precautions are required. Factors which influence the real exposure level for the operator include the exposure time, the room features, further sound sources (as for example number of the adjacent working machines). Also the exposure levels permitted are not the same for all countries. Thank to this information the operator to evaluate the risks and the dangers.

Here are some factors which reduce the exposure to the noise:
- right tool selection
- right rotation speed selection
- machine and tool maintenance
- proper use of ear protective means

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3.5.1 DUST EMISSION

(mmax_3-5-1_0.0)

DUST EMISSION	
Operating conditions – **Surfacing / Thicknessing / Drilling**	
Reference regulations: **BG-GS-HO- 05**	Dust emitted [mg/m^3]
Operator's site	< 2



DANGER-WARNING:
HARDWOOD SAWDUSTS ARE HARMFUL TO YOUR HEALTH



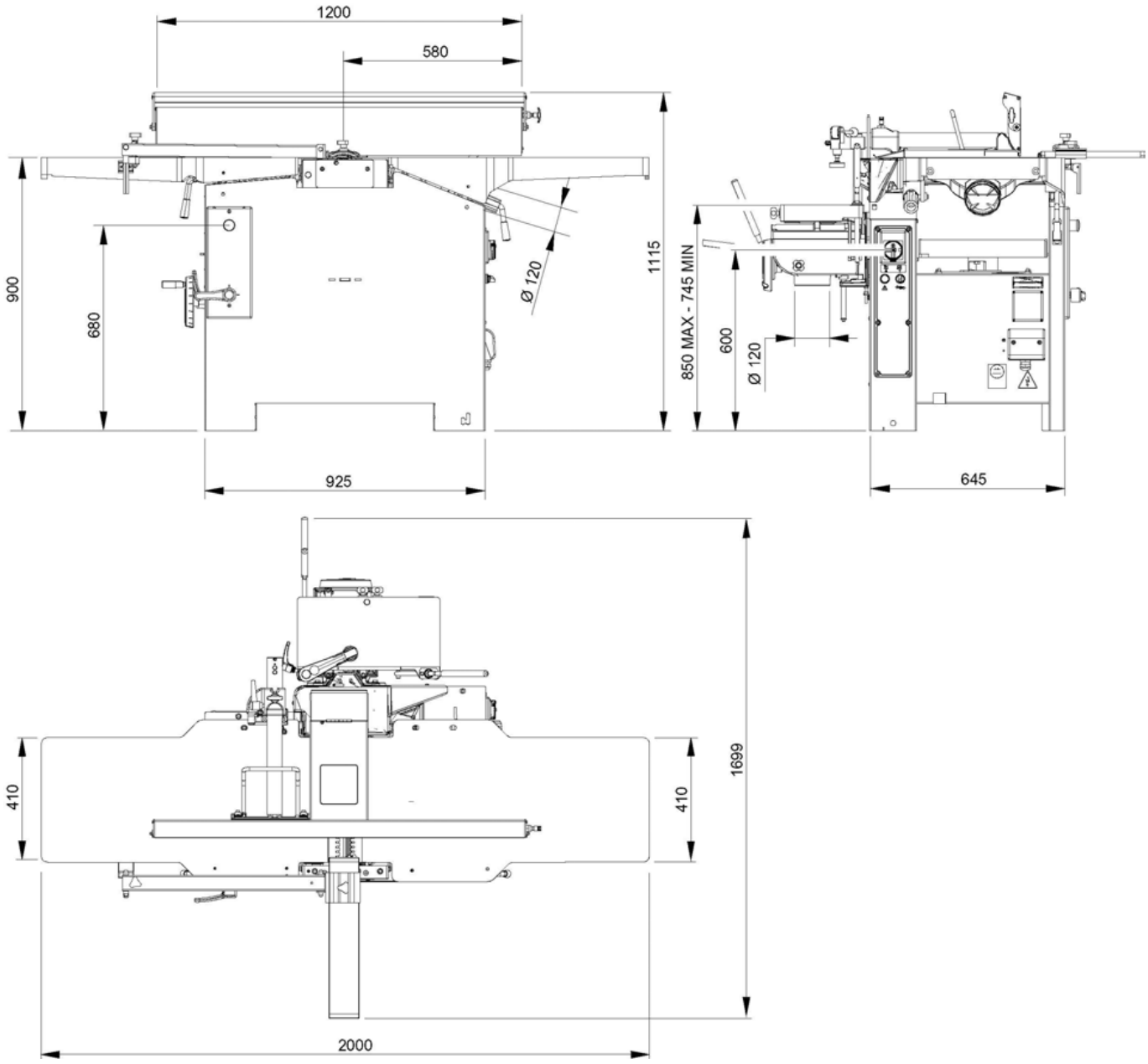
FORBIDDEN:
DO NOT USE COMPRESSED AIR.



DANGER-WARNING:
it is necessary to connect all suction hoods to the suction system.
Before starting the working make sure that the suction system is switched on.

3.6 OVERALL DIMENSIONS

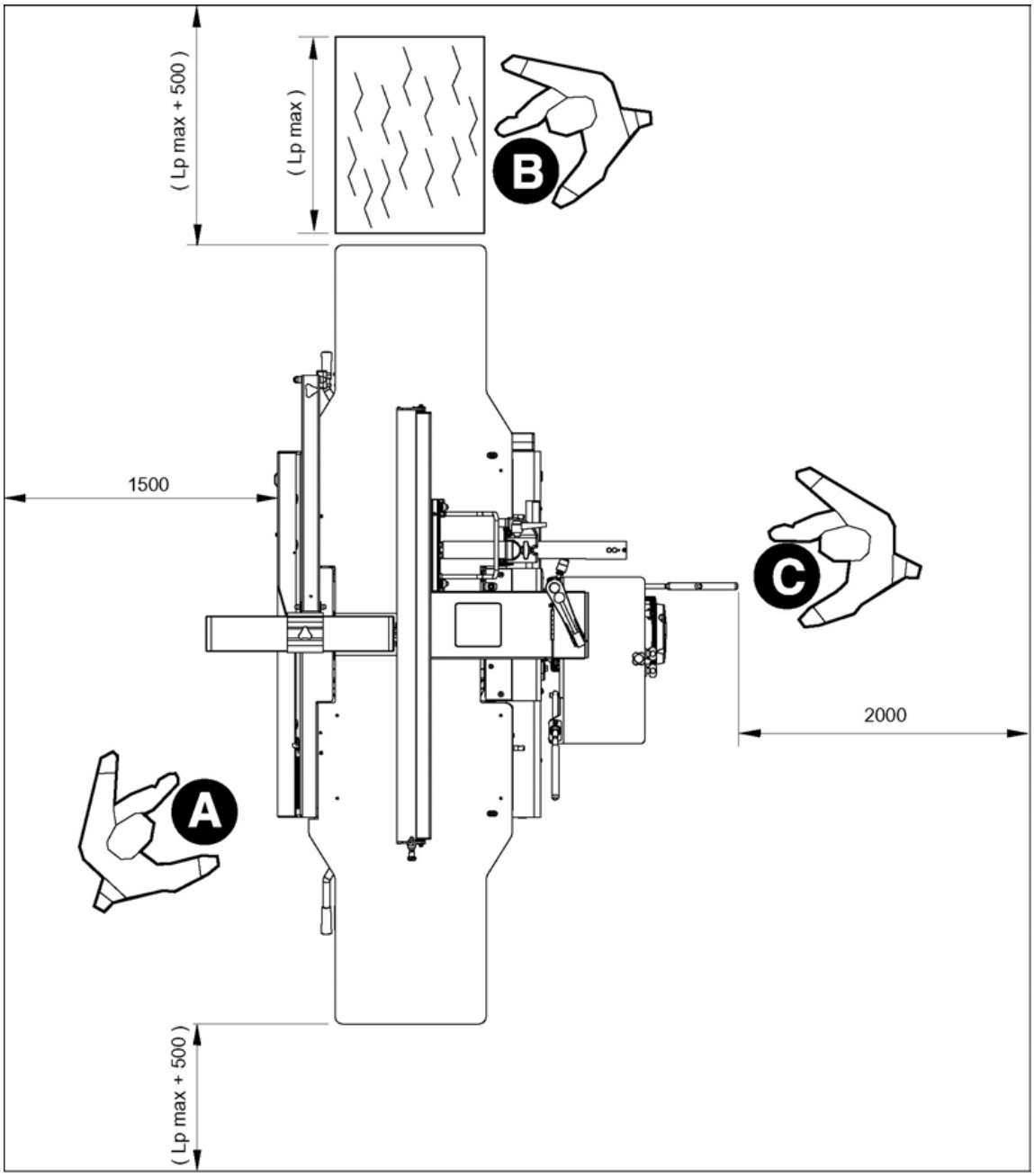
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3.7 WORKING AREA

(fs_3-7_0.0)



CAUTION:
the measures indicated above shall be considered as the free room around the machine.

DANGER-WARNING:
this machine has been designed to be used by one operator.

A = Surfacing planer **B = Thicknessing planer** **C = Drilling**

Lp max = Max. workpiece length

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4.1 UNLOADING THE MACHINE

(ev_4-1_0.0)

NOTE-INFORMATION:
the packing of the machine indicates:
- the weight to be raised
- the hooking areas

DANGER-WARNING:
lifting and handling should only be carried out by skilled personnel specially trained to execute this kind of operations. During loading and unloading, avoid knocks to prevent damages to persons or things. Make sure no one is standing under the overhung load and/or within the bridge crane working range during machine lifting and handling.

Before unloading the machine take off all parts rested on it for packing and transport reasons.

DANGER-WARNING:
- the machine shall be lifted by crane or other raising means by hooking the slings as shown in fig. 4.1.

If a bridge crane or a crane is available, proceed as follows:
– provide slings (C fig. 4.1) of equal lengths and capacity (belts minimum length 2000 mm);
– lift the slings and position them as is shown in the figure 4.1;
– fasten the slings to the bridge crane (D fig. 4.1) having adequate lifting power;
– move the bridge crane by small steps to allow the slings (C fig. 4.1) to settle, until optimum stability conditions are reached;
– lift carefully and slowly, without causing the load to swing, and place the machine in the selected setting.

NOTE-INFORMATION:
if lifting with a hook, open the holes already prepared and indicated by the plate as shown in the figure.

If hoisting is carried out with a lift truck A, proceed as follows:
– provide a fork lift truck (A fig. 4.1) having suitable carrying capacity;
– insert the forks (B fig. 4.1) as per the figure (keeping them alongside the two feet (E fig. 4.1) and check that these protrude at least 15 cm from the rear part of the base.

DANGER-WARNING:
- make sure that the crane, the slings as well as the fork truck are proper for lifting the machine.

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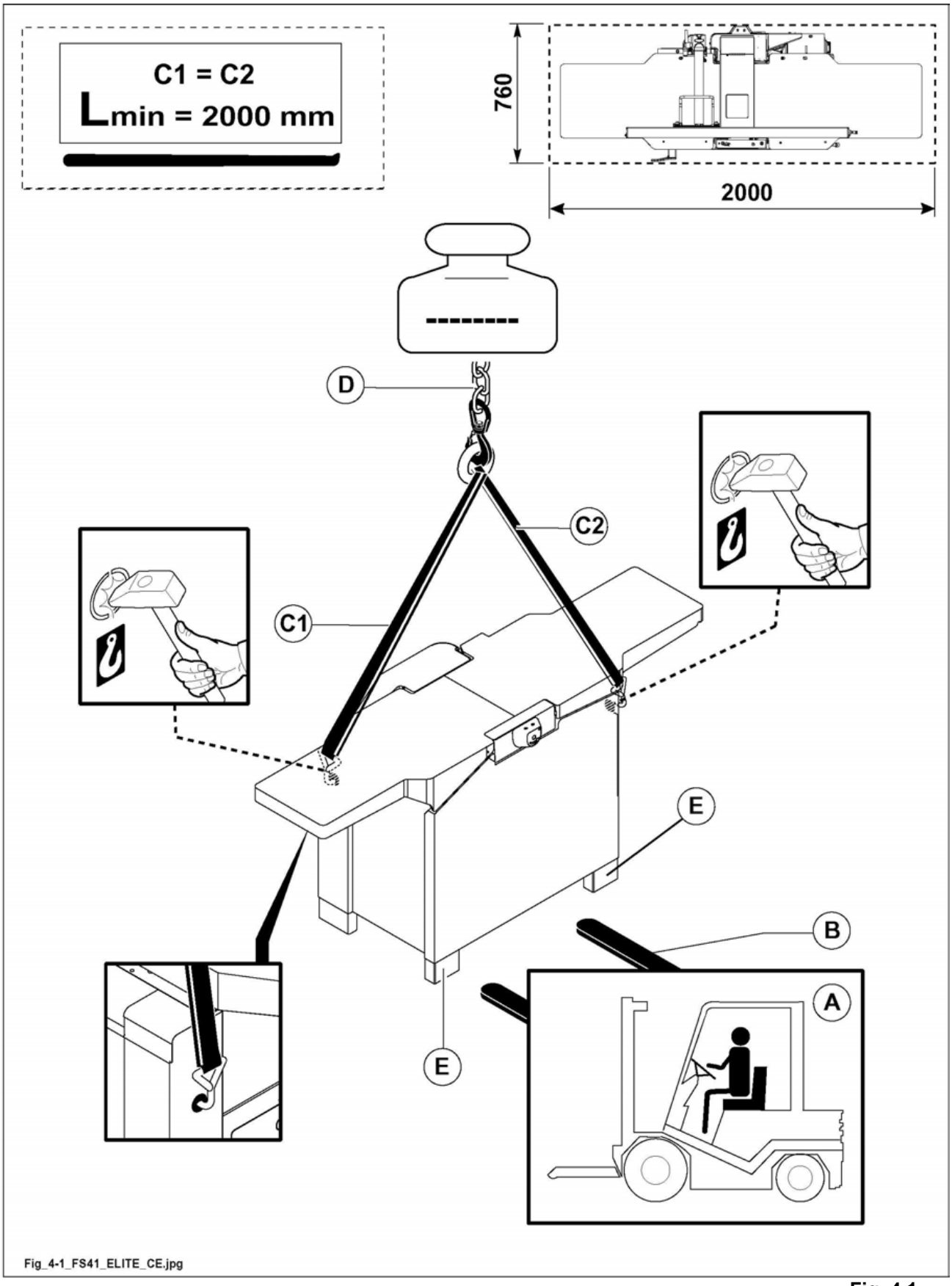


Fig. 4.1

4.2 MACHINE POSITIONING

(ev_4-2_0.0)

The position where to install the machine shall be well lightened (at least 500 LUX), proper for the connection to the power line, to the suction system and for maintenance operations.

DANGER-WARNING:
during the machine positioning you have to consider that, in case of longer pieces, a sufficient room is required to avoid squashing points towards the fixed parts of the working envinronment as walls, columns etc... (see par. 3.7).

Check that the floor is firm in order to ensure a uniform rest of the machine.
A concrete floor is recommended; an asphalt floor is not proper.
We recommend to insert steel plates between machine feet and floor eventually with vibration-dumping material.

DANGER-WARNING:
remove the bracket (D fig. 4.2) fastening the surface tables during transport operations.
Keep the bracket necessary to change the machine position.

DANGER-WARNING:
the machine must be fixed to the floor.
Fix the supplied angles B (fig. 4.2) to machine feet A (fig. 4.2) and fix on ground by means of expansion bolts C (fig. 4.2) (not supplied).

Some machine parts are greased and oiled.
Before starting working carefully degrease the working areas as well as the guards with not dangerous solvent.

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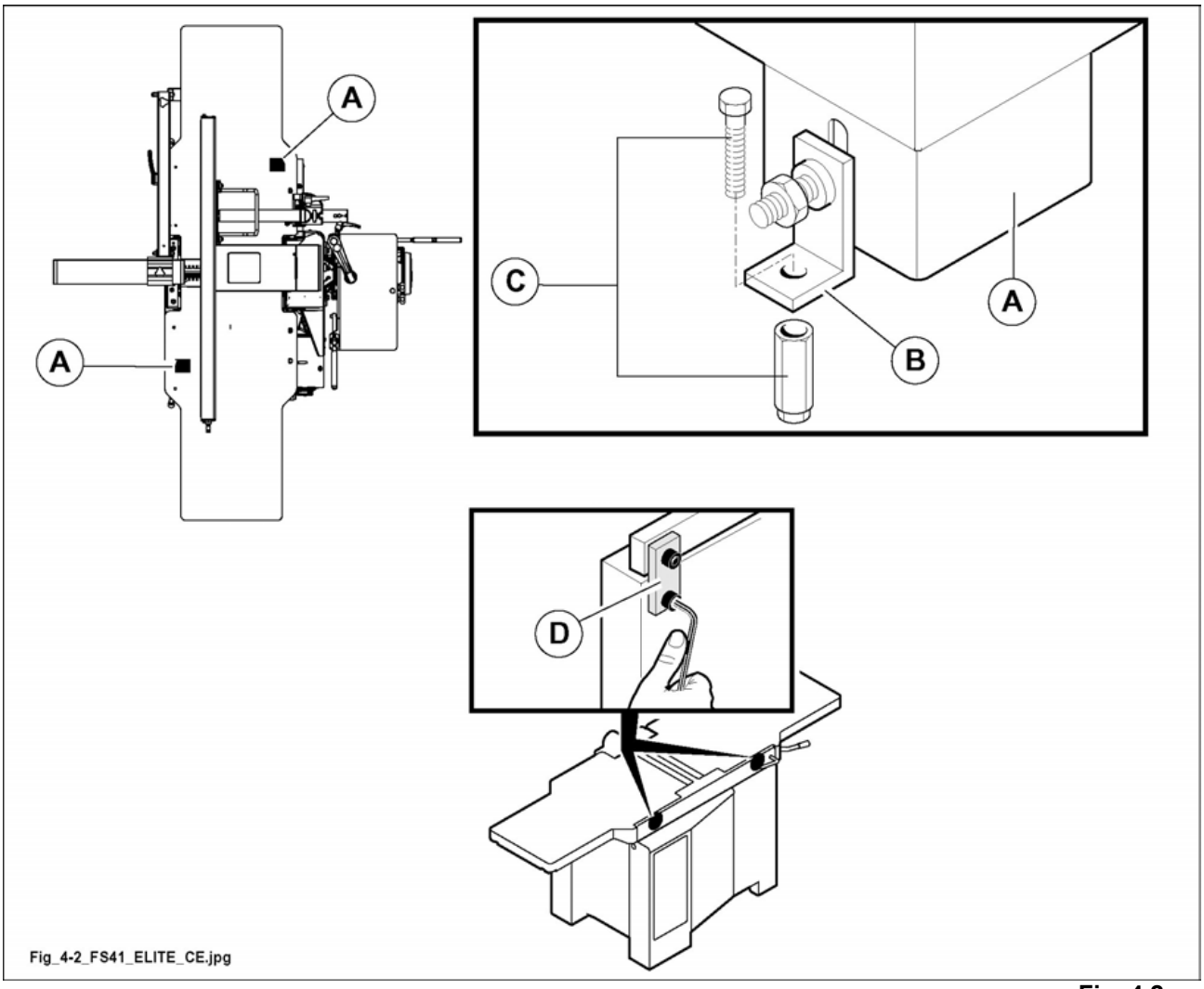


Fig. 4.2

4.3 FITTING THE PARTS DEMOUNTED FOR TRANSPORT REASONS

(ev_4-3_0.0)

For packing and transport reasons some machine members are removed.

4.3.1 GUARD FITTING

(fs_4-3-1_0.0)

NOTE-INFORMATION:
the protections must always be mounted and be positioned in such as way as to completely cover the tools.

The bridge (A fig. 4.3-1) is disassembled for transport requirements.

Insert the anodised aluminium cover (1 fig. 4.3-1) on the sliding rod (C fig. 4.3-1) and close with the cap (D fig. 4.3-1) supplied.
Slide the anodised aluminium cover (1 fig. 4.3-1) above the sliding bar (C fig. 4.3-1) and block it with the sliding adjustment knob (F fig. 4.3-1).

For fitting the bridge again:
1) fit the protection (A fig. 4.3-1) into place as shown in the picture.
2) Screw the 2 retaining screws through the holes (B fig. 4.3-1).

CHECK THE CORRECT ASSEMBLY OF THE PROTECTION AS FOLLOWS
- Use the adjustment knob (E fig. 4.3-1) to check the up movement of the arm
- Use the sliding adjustment knob (F fig. 4.3-1) to adjust the cover of the cutting part

CAUTION:
if necessary, use the adjustment grub screws (S fig. 4.3-1) to achieve the correct installation of the guard.

USING THE PROTECTION
Use the adjustment knob (E fig. 4.3-1) to adjust the height of the anodised aluminium cover (1 fig. 4.3-1) in relation to the worktable and the thickness of the material being machined.
Adjust the cover of the cutting part with the knob (F fig. 4.3-1).

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EXCLUDING THE PROTECTION
The protection can be excluded, as shown below, only for maintenance operations.
For any requirement or advice on the protections for special operations, contact the SCM directly.

DANGER-WARNING:
to exclude the protection, loosen the sliding knob (F fig. 4.3-1) to move the anodised aluminium cover from the machining area (1 fig. 4.3-1).
Then unscrew the knob (G fig. 4.3-1) and rotate the protection until the worktable is free.

CLEANING
Rinse the parts with warm water.
Wash with a solution of delicate soap or domestic detergent for dishes and warm water, using a soft cloth or sponge to remove any trace of dirt.
Rinse with cold water and dry with a soft cloth, to prevent the formation of water stains.
DO NOT USE SOLVENTS, ALCOHOL, ALKALINE PRODUCTS OR PRODUCTS FOR CLEANING WINDOWS AND MIRRORS.

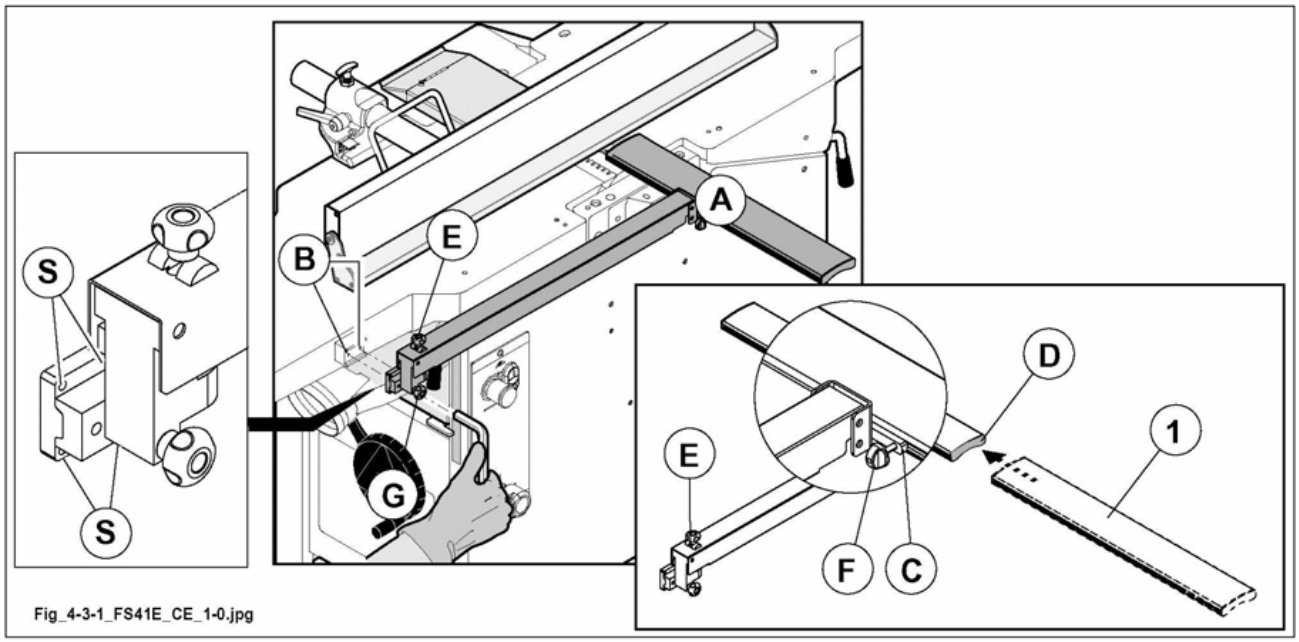


Fig. 4.3-1

(vuota_par_4-3-1)

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4.3.1.1 SUVAMATIC GUARD FITTING

(fs_4-3-1-1_0.0)

OPT

NOTE-INFORMATION:
the protections must always be mounted and be positioned in such as way as to completely cover the tools.

NOTE-INFORMATION:
at the customer's request, SCM ***can provide its machine with the holes (F fig. 4.3-1-1) and the flange (G fig. 4.3-1-1) to install the SUVAMATIC guard (A fig. 4.3-1-1).***
Before the installation and use, read the specific guard manual carefully (M fig. 4.3-1-1), supplied with guard.

- Secure the flange (G fig. 4.3-1-1) to the base of the machine with the holes (F fig. 4.3-1-1);
- fit the protection (A fig. 4.3-1-1) into place as shown in the picture.
- Screw the 3 retaining screws through the holes (B fig. 4.3-1-1).
- If necessary, use the adjustment grub screws (R fig. 4.3-1-1) to achieve the correct installation of the guard, as indicated in the manual (M fig. 4.3-1-1).

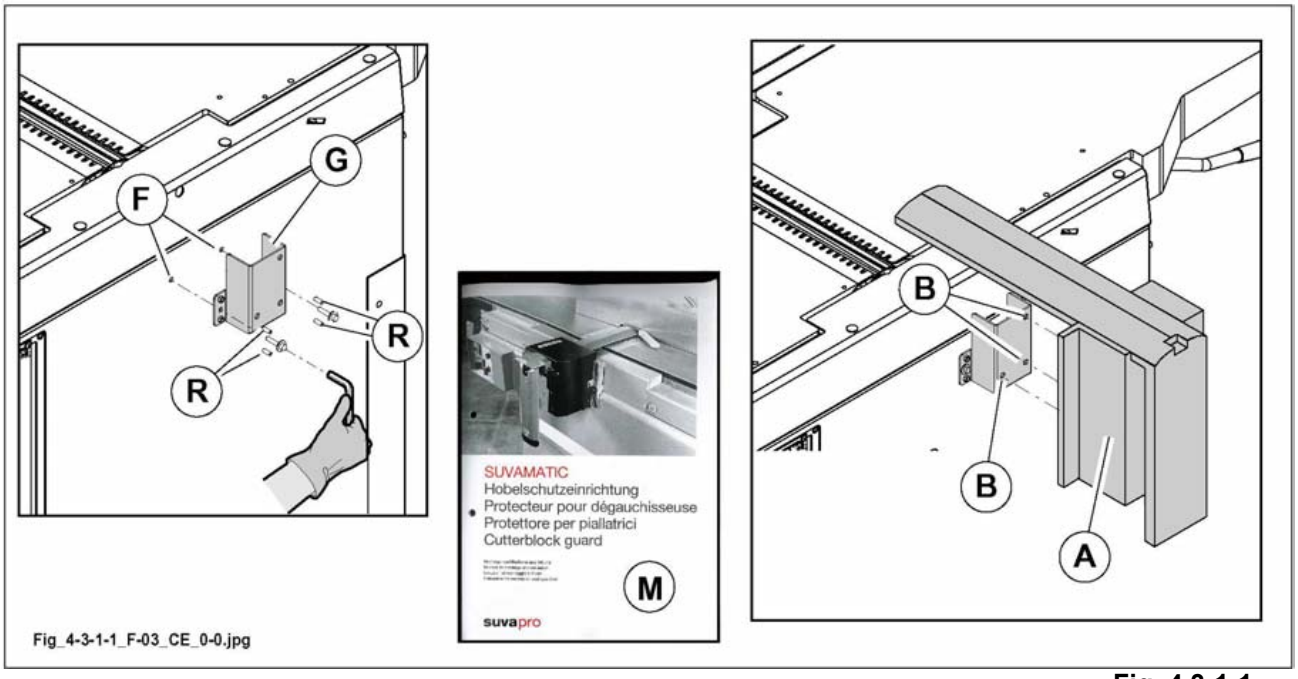


Fig. 4.3-1-1

DANGER-WARNING:
it is compulsory that the machine operator is trained for the machine set up and operation.
The operators shall carefully read this handbook and consider the safety rules.

SAFETY OVER ALL

NOTE-INFORMATION:
the machine may only be used when fitted with a cutterblock guard that operates correctly.
For this reason, you must always go through the check of the SUVAMATIC guard, according to the list given below, before starting the machine.

DANGER-WARNING:
the requirements listed below must be fulfilled to ensure that the SUVAMATIC provides protection.

Ensure that the SUVAMATIC is in its resting position before going through the check listed below.

Resting position:
The guard is against the fence and the carrier system is touching the casing. The locking lever for vertical adjustment must be released (A fig. 4.3A-1-1).

Check list

- Horizontal surface pressure
Pull the guard away from its resting position a little and release it. The guard must automatically return to its SUVAMATIC resting position and press against the fence (A, B fig. 4.3A-1-1).

- Vertical surface pressure
Raise the guard from the table a little and release it.
It must automatically return to its resting position, i.e. rest on the table (C, D fig. 4.3A-1-1).

- Vertical adjustment
Raise the guard as far as the stop and lock it in position with the locking lever.
Press the guard down onto the table by hand and then release it again. It must automatically return to the pre-set height (E, F, G, H fig. 4.3A-1-1).

DANGER-WARNING:
work may only be done if your SUVAMATIC is in correct working order.
If any of the functions described above are not operational, stop the machine and ask the supplier of your guard.

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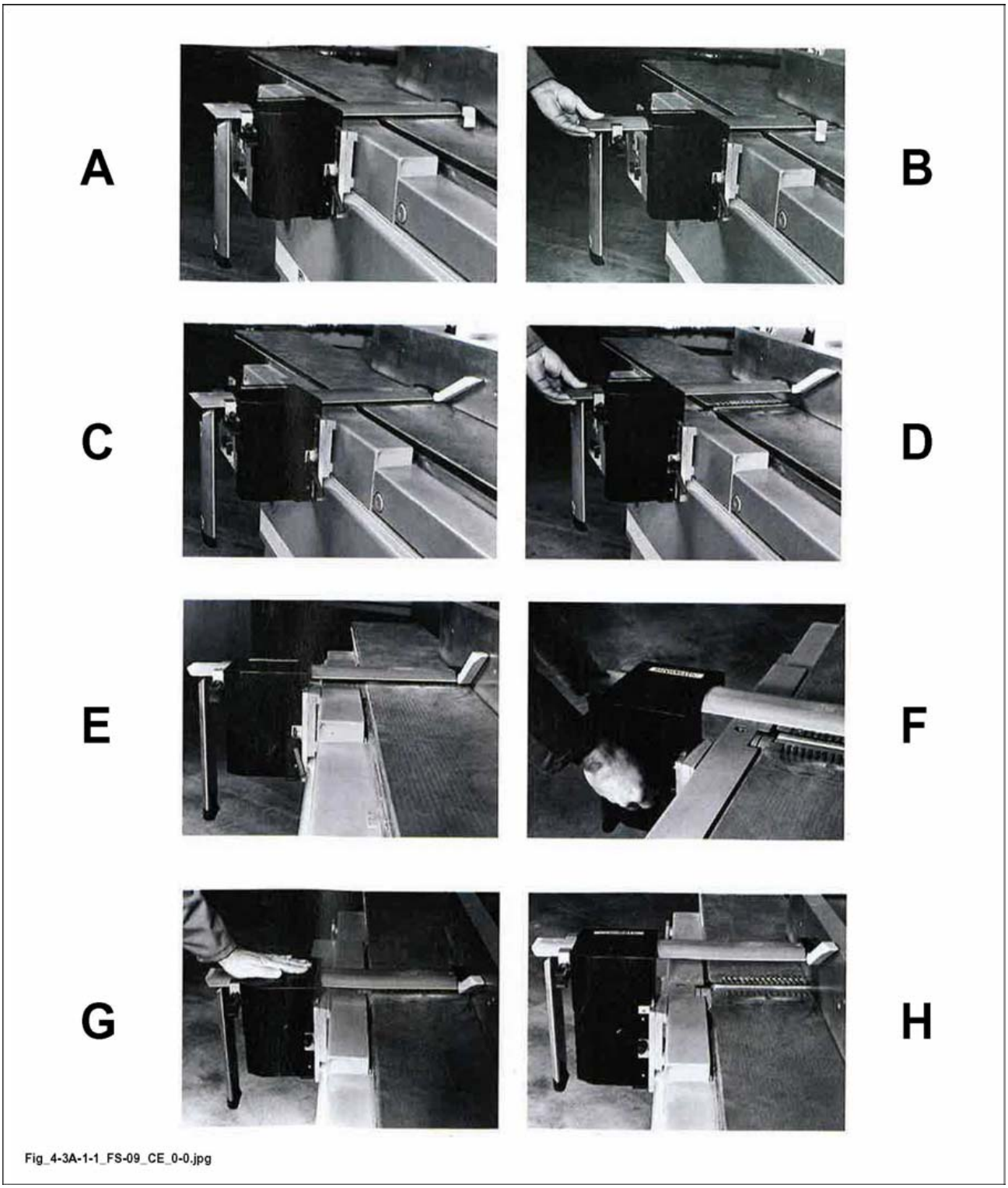


Fig_4-3A-1-1_FS-09_CE_0-0.jpg

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4.3.2 PLANING FENCE - ASSEMBLY

(fs_4-3-2_0.0)

- Position the planing fence unit perpendicular to the planer and tighten the two screws (A fig. 4.3-2).

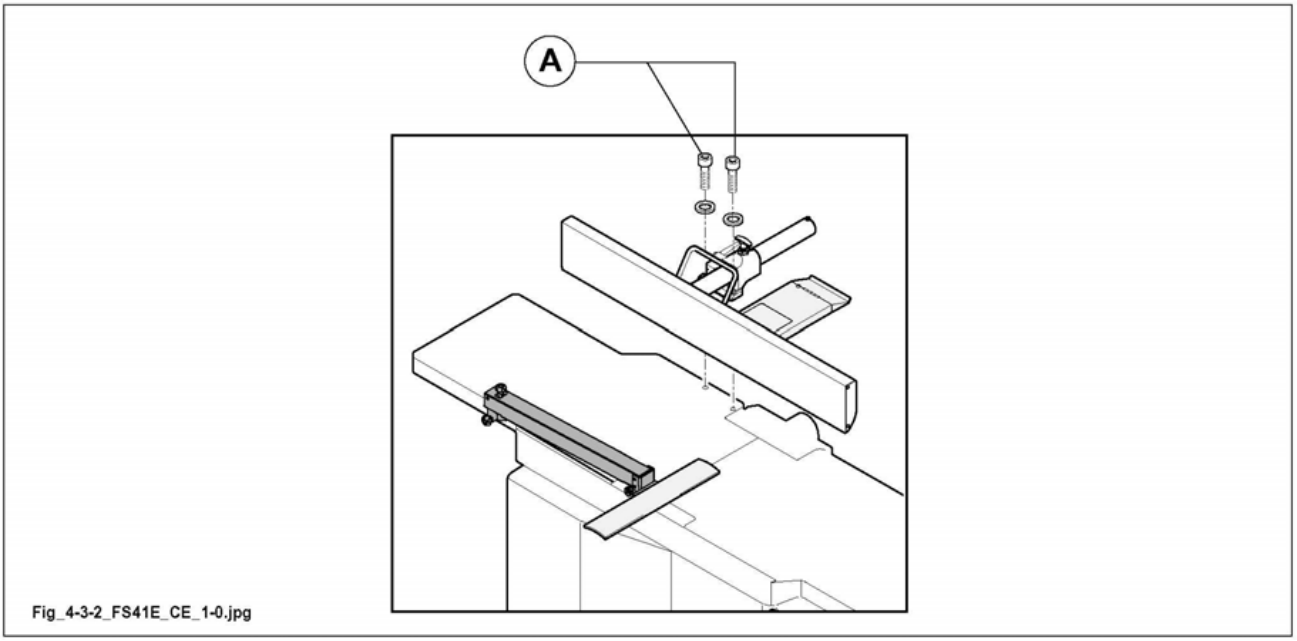


Fig. 4.3-2

4.3.3 DISPLACING WHEELS

(fs_4-3-3_0.0)

OPT

The unit is composed by:
- 2 fixed wheels (A fig. 4.3-3).
- 1 movement lever (B fig. 4.3-3).

1) Strike the sheet-metal to open the holes provided for supports (C fig. 4.3-3) and fixed wheels (A fig. 4.3-3).
2) Disassemble the door corresponding to position 3 and insert wheels in the relative feet.
3) Mount the fixed wheels (A fig. 4.3-3).

To use the wheels, proceed as follows:
- open surfacer tables;
- insert lever (B fig. 4.3-3) into support (C fig. 4.3-3) from side 1 and use it as a lever to raise the machine;
- lower the surfacing tables;
- move the fixed wheels (A fig. 4.3-3) into the slot next to (E fig. 4.3-3); if necessary move by inserting a hexagonal wrench into screw (D fig. 4.3-3);
- move lever (B fig. 4.3-3) dto the opposite side of the machine (side 2), insert it into mount (C fig. 4.3-3) and proceed with moving the machine.

DANGER-WARNING:
at the end of the operation, disassemble the moving wheels (A fig. 4.3-A) and fix the machine to the ground (see Par. 4.2);
the machine must be fixed to the floor.

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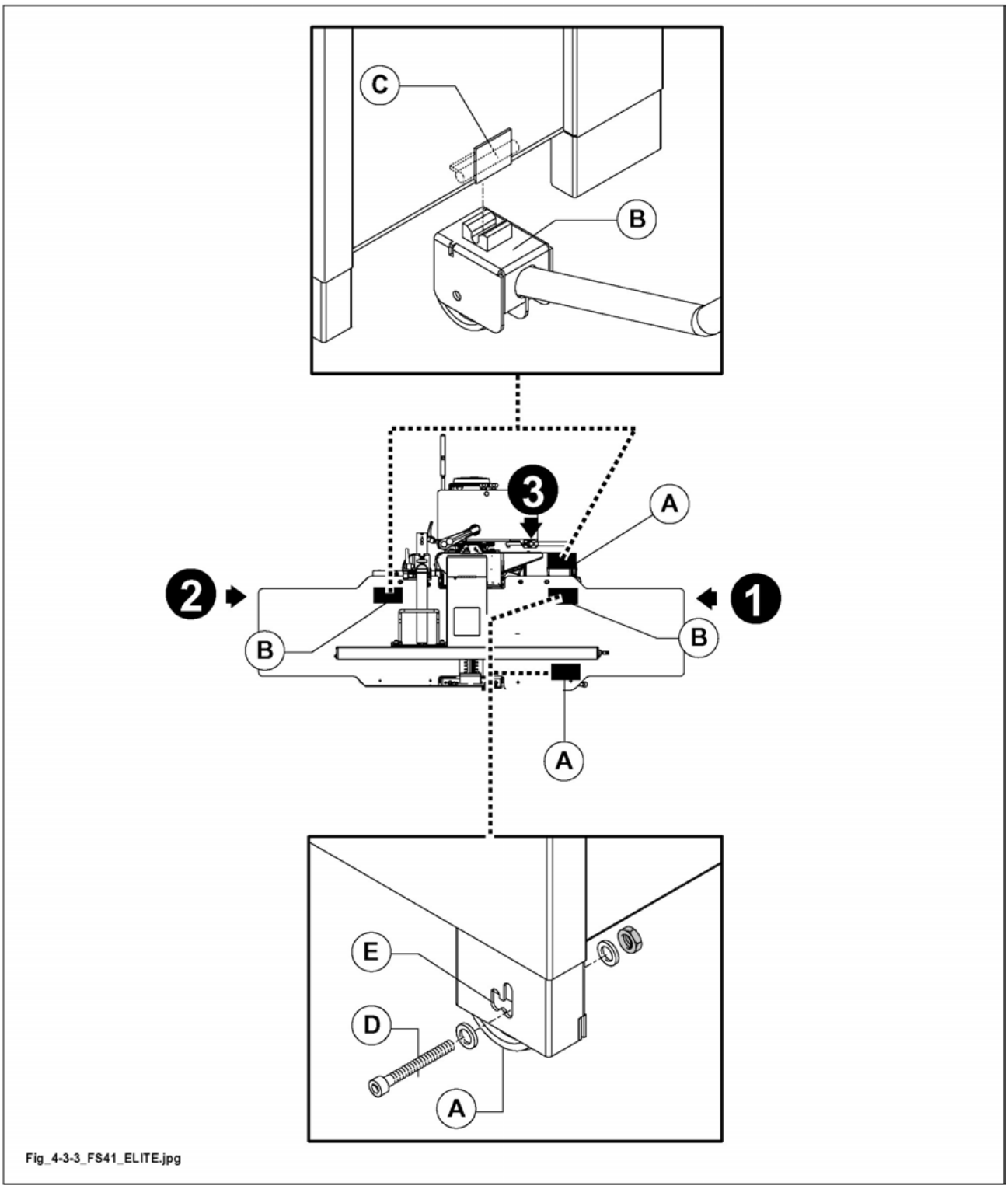


Fig. 4.3-3

(vuota_pg1)

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4.4 ELECTRIC CONNECTION AND GROUNDING

(st-el_4-4_0.0)

DANGER-WARNING:
the installation operations must be performed by specialised technical personnel SCM ***or personnel authorised by the manufacturer.***

4.4.1 REQUISITES FOR THE ELECTRICITY SUPPLY SYSTEM

(lab_req_eletr_4.4.1_0.0)

DANGER-WARNING:
the electric connection and subsequent controls must be carried out by a specialised electrician, referring to the wiring diagram supplied with the machine.

INTRODUCTION

CAUTION:
For proper connection it is always mandatory to refer, in addition to the following, also to the wiring diagram and the plate on the electric panel of the individual machine.

The electrical panels of the machines are suitable to be powered to a single/three-phase network with/without neutral as indicated in the machine/plate electric panel/LAYOUT.

If the power supply voltage at the final client is different to the indications on the machine plate/electrical panel plate/LAYOUT, see the "machine electrical power supply specifications" section.

The input and connection of the power supply line inside the electrical panel must be carried out in compliance with the following instructions:

- connecting the cables to the input terminals of the main disconnection device of the electrical panel or, where present, to the connection terminal board located upstream of the switch (as also indicated in the electrical diagram)
- so as not to compromise the degree of protection IP54 of the electrical panel declared by the manufacturer by NOT drilling holes in the electrical panel carpentry;
- complying with the radii of curvature as indicated by the cable manufacturer;
- complying with the laying limits as indicated by the cable manufacturer;
- using the tightening torque indicated on the wiring diagram of the machine;
- without mechanically damaging the switch and the cable itself.

SPECIFICATIONS OF THE ELECTRICAL SUPPLY OF THE MACHINE

- Distribution systems allowed: type TN-S / TN-C.
- Phases number (~) and neutral conductor: see the indications on the machine plate/electrical panel plate/LAYOUT.
- Nominal voltage (Un) and tolerance when different from +/- 6%: see the indications on the machine plate/electrical panel plate/LAYOUT.
- Voltage interruption: Power supply voltage interrupted or reset for a time not exceeding 3 ms, at any moment of the power cycle with more than 1 s between two successive interruptions.
- Voltage gaps: not exceeding 20 % of the peak supply voltage for more than one cycle with more than one second between two successive gaps.
- Frequency (f) and tolerance when different from +/- 1%: see the indications on the machine plate/electrical panel plate/LAYOUT.
- Nominal machine current (In): see the indications on the machine plate/electrical panel plate/LAYOUT.
- Short circuit seal (Icc): see the indications on the machine plate/electrical panel plate/LAYOUT.
- Minimum neutral conductor section: see the indications on the electrical diagram/LAYOUT.
- Minimum earthing protection conductor section: see the indications on the wiring diagram/LAYOUT.



NOTE-INFORMATION:
The LAYOUT can be provided as a separate document, attached to the machine instruction manual, or integrated with it.



NOTE-INFORMATION:
When the distribution system and/or the supply voltage at the customer's premises are different from those provided for the machine, the following prescriptions apply:

- Distribution system type TN-C / TN-S in the presence of voltages other than those provided for the machine: the use of an autotransformer or transformer is required (not included in the standard supply, unless agreed otherwise).
- IT type distribution system: it is mandatory to use a three-phase transformer regardless of the supply voltage (not provided for in the standard supply unless otherwise agreed).
- TT type distribution system: in order to avoid disturbances and malfunctions it is mandatory to use a three-phase transformer regardless of the supply voltage (not provided for in the standard supply unless otherwise agreed).

The supply of a transformer/auto-transformer is ALWAYS understood as:

1) **Component not included in the standard supply and an integral part of the distribution system of the installation site.**
2) **Component external to the machine and not an integral part of it.**
3) **Component to be connected and protected by the client.**

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MACHINE PROTECTION AGAINST INDIRECT CONTACTS:

The machine is equipped with a grounded earth circuit to the PE terminal.
It is up to the customer to complete the protection against indirect contact.
To this end, the customer must:

1) Use a qualified professional for the project and a qualified installer (both with the necessary requirements according to local legislation).
2) If there is a TN-S distribution system, install a differential current device (RCD) on the supply line with the following minimum specifications:
   - adjustable both in current and intervention time.
   - suitable for recognizing continuous or high frequency fault differential currents.
   - positioned outside the machine electrical panel
3) If there is a TN-C distribution system, install a differential current device (RCD) with the specifications indicated in point 2, after separating THE PEN conductor into the respective PE and N conductors upstream of the RCD itself.



DANGER-WARNING:
The installation of inadequate differential protection devices may result in unwanted untimely interventions during the use of the machine.
Any damage of any kind resulting from untimely interventions cannot be attributed to the Manufacturer of the Machine.



NOTE-INFORMATION:
Remember that in environments with greater fire risks, as expressed in IEC60364-4-42, to ensure the protection against fires caused by currents dispersed to the ground, the maximum value of the differential triggering current must be 300mA.



NOTE-INFORMATION:
The protection against such risks is the responsibility of the customer who, for this purpose, will have to use specialized personnel (electrician, installation personnel of electrical systems).
The CUSTOMER must COMPLETE the measures to guarantee the protection against electrocution risks due to indirect contacts, even if the machine includes an internal grounding system as far as the PE terminal.

MACHINE PROTECTION AGAINST OVERCURRENTS

All branch circuits of the machine are protected against overcurrents (overload and short circuit).
It is up to the customer to ensure protection against short circuit overcurrents of the Feeder
(part of the circuit between the general disconnecting device of the machine and the bypass circuits).

To this end, the customer must:

1) Use a qualified professional for the project and a qualified installer. (Both with the necessary requirements according to local laws).

2) Protect the Feeder by installing a three-wire fuse supply line with the following minimum specifications:
   - Quick type.
   - Compatible with the Icc value required for the machine.
   - Positioned outside the machine electrical panel.
   - A size not exceeding that shown in the table.

POWER SUPPLY LINE PROTECTIONS COORDINATION

Nominal machine current (In) (A)	CABLE SECTION mm^2	Quick type fuse maximum size allowed (A) AM
---> 10	2,5	12
10 ---> 14	4	16
14 ---> 18	6	20
18 ---> 22	6	25
22 ---> 28	10	32
28 ---> 36	10	40
36 ---> 46	16	50
46 ---> 54	16	63
54 ---> 76	25	80
76 ---> 92	35	100
92 ---> 110	50	125



(A)

Voltage (Volt), current (I=ampere) are indicated on the machine identification plate.
When supplying with a transformer, see the transformer plate data.

CAUTION:
If the power cables extend from above, do not pass them near the monitor or PC.
Moreover do not use the electrical cabinet walls as a support for fixing the power cables.

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MACHINE OVERVOLTAGE PROTECTION

The machine is NOT protected against overvoltages.
The electrical system may be subject to overvoltages caused by manoeuvres or faults on the electrical system or of atmospheric origin (phenomena of direct or indirect electrocution of the structure in which it is located or of the electrical line from which the machine is powered).
In the absence of specific requests or requirements from the customer, the Manufacturer of the machine cannot be held liable for damage to the electrical equipment of the machine caused by overvoltages of any kind.

4.4.2 ELECTRIC CONNECTION

(st-el_4-4-2_0.0)

DANGER-WARNING:
before performing the connection disconnect the main line switch; in any case check that the electrical cable used for the machine connection is not live.

Connect the machine to the elecric system by proceeding as follows:
- shut off the power (indicate it by a sign);
- take off the cover of the terminal board (C fig. 4.4);
- insert the supply cable into proper terminal screw (P fig. 4.4);
- connect the 3 phases to terminals L1-L2-L3 (fig. 4.4);
- connect the ground cable yellow-green, to terminal (⏚ / PE);
- if necessary connect neutral cable to terminal (N fig. 4.4);
- fit the cover of terminal board (C fig. 4.4);
- clamp terminal screw (P fig. 4.4).

Make sure that the cutterblock rotation direction is right (the cutterblock shall rotate to the direction opposite to the workpiece feed) after starting the machine: see chap. 5.

4.4.3 CHECK THE CORRECT CONNECTION

(st-el_4-4-3_0.0)

DANGER-WARNING:
CAREFUL WITH THE ELECTRICAL CONNECTION.
Incorrect rotation of the tool causes danger to the operator and damage to the product. Should rotation be incorrect, immediately switch off the power and invert two of the three phases on the terminals (L1-L2-L3).

CAUTION:
if the machine is connected by a mobile supply cable, use a flexible rubber cable marked H07RN-F or A07RN-F.
The relative socket shall meet DIN 49463 as well as IEC 309-1 and IEC 309-2.

NOTE-INFORMATION:
the documentation with wiring diagram and certificates is inside the accessories case.

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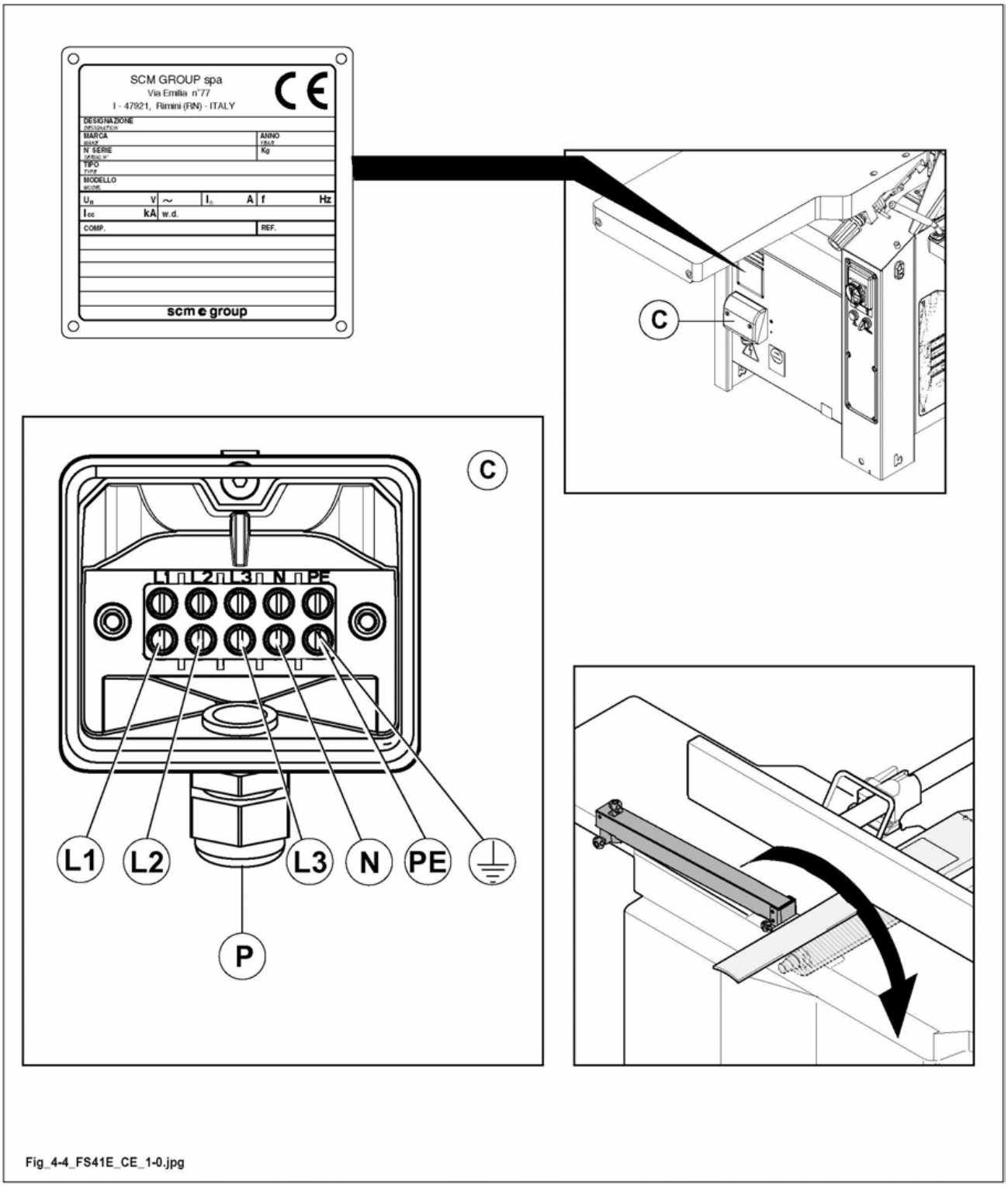

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Fig. 4.4

4.5 CONNECTION TO THE SUCTION SYSTEM

(ev_4-5_0.0)

DANGER-WARNING:
the connection to the suction system is necessary for the machine operation and for the operator's safety. Always work with the suction system in operation.

NOTE-INFORMATION:
the extraction system must comply with EN 12779:2004.

Always start the suction system and the operator assembly motor at the same time.

Connect the exhaust pipes to the suction system with hoses of proper diameter.

NOTE-INFORMATION:
we recommend that the suction sleeve is arranged out of the suction hood in order to avoid clogging caused by chips.
The suction pipe fitting should not hinder the operator during the woodworking process.

Connect the hose to suction hood (A fig. 4.5), diameter 120 mm and (B OPT fig. 4.5), diameter 120 mm.
Clamp it with the proper metallic clip to ensure the contact between suction hood and hose.

(A) the suction system shall ensure a flow equal to 814 m^3/h at a flow speed at least of 20 m/s - chips dry (1140 m^3/h --> 28 m/s - chips wet).

(A + B) OPT the suction system shall ensure a flow equal to 1628 m^3/h at a flow speed at least of 20 m/s - chips dry (2280 m^3/h --> 28 m/s - chips wet).

This value shall be checked before starting the working.
If further machines are connected to central suction system carry out a test when all suction systems are in operation.
The right operation of the suction system reduces the risks due to dust inhalation.

Other factors which reduce the dust emission in the working environnement.
- maintenance of tools, of the machine and of the suction system;
- proper use of protective devices against dust.

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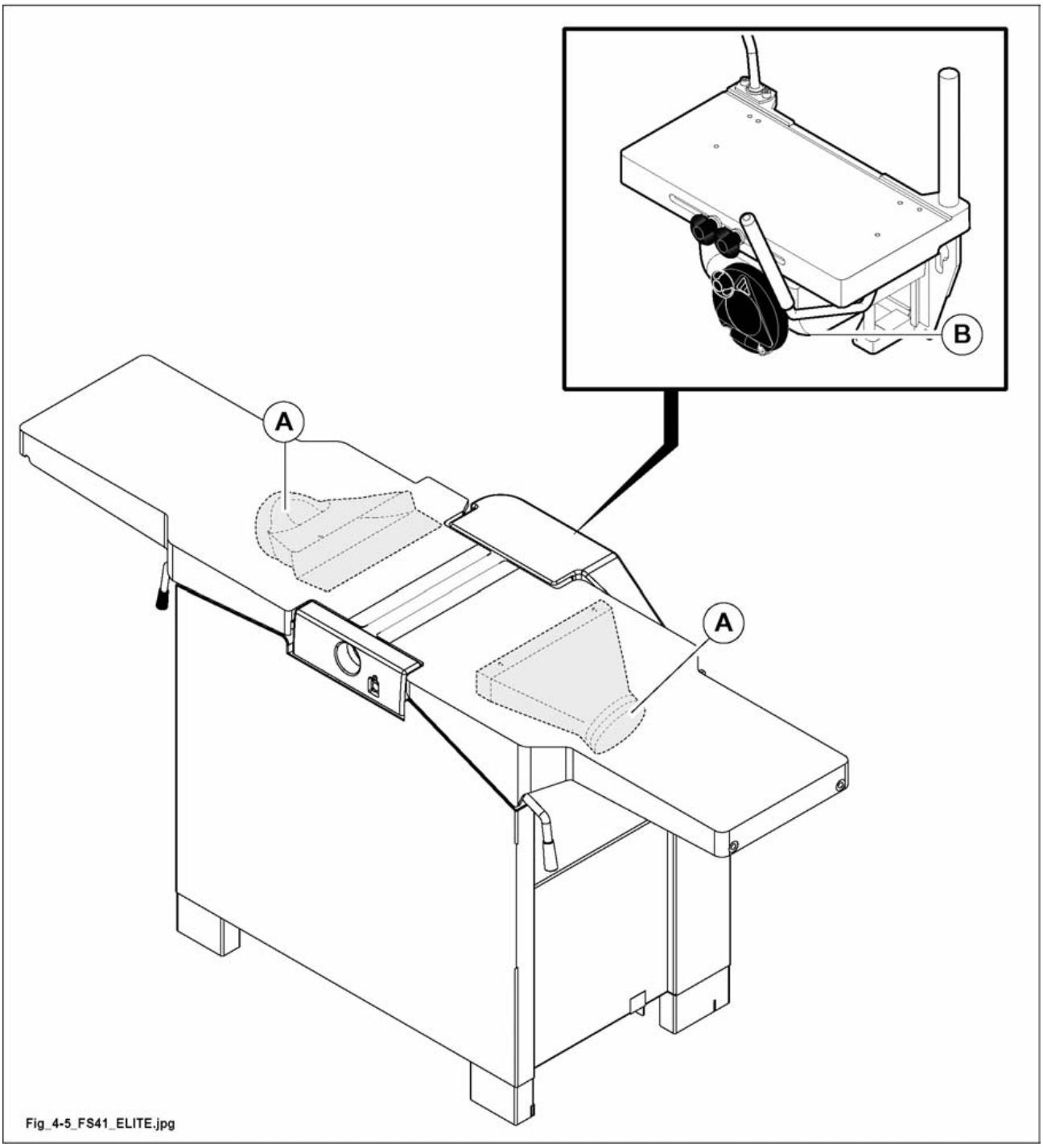


Fig. 4.5

NOTE-INFORMATION:
to connect the machine to the suction plant, use hoses made of antistatic and self-decomposing material, in order to prevent electric discharges due to an accumulation of static electricity (the discharges could compromise the right operation of the electronic components on the machine) and to avoid possible fire to propagate.

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5.5 Machine start-up - shutdown 5

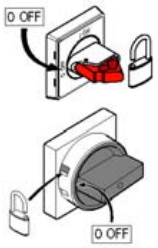
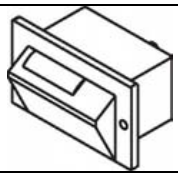

5.5.1 Start - stop Single cylinder planer - Mortiser 5


5.5.2 Start - stop Thicknesser 6

5.11 Auto-brake motor 7

5.1 CONTROLS BOARD

(ev_5-1_0.0)

Ref.	Image	Description / Function	Use and/or explanation
1		Padlockable main switch on electric cubicle Machine supply voltage switching on/off Possible locking to "0" by padlock..	I ON = ON O OFF = OFF
2		Emergency button. Motor supply voltage switching off with intervention of brakes when these are present.	Pressed: machine in emergency condition. Reset by turning the button to the arrow direction.
3		2-position selector for locking/releasing the autobrake motor. OPT	= Motor brake locked : pilot lamp off. = Motor brake released: pilot lamp lit.
4		Buttons for cutterblock start/stop.	Press to start cutterblock motor. Press to stop cutterblock motor.
5		Numerical display for the vertical motion of the thicknessing table. OPT	
6		Power on warning lamp.	Lights up when you turn switch **"1"** to position **I** and indicates the presence of power in the machine electrical circuit.
7		Lever for feed speed change.	Turn lever for selecting the speed (6 -12 m/min).

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5.2 EMERGENCY BUTTONS

(ev_5-2_0.0)

In case of danger if you press the emergency button, any function of the machine is locked.

Emergency buttons present on the machine are:

- emergency button (2 fig. 5.3) on control board.

Periodically press the emergency buttons to check whether they are efficient.

DANGER-WARNING:

any anomalies found during the control of these devices, must be reported promptly to the manager, who will put the machine out of service and call the electrical, mechanical maintenance personnel or the SCM ***Support Service.***

5.3 ACCESS TO THE ELECTRIC HOUSING

(fs_5-3_0.0)

CAUTION:
only a skilled electrician may reach the electric housing.

To reach the electric housing proceed as indicated later on:
- switch off the mains voltage then indicate this with a sign;
- turning the main switch (1 fig. 5.3) to 0 (OFF) lock it then indicate this with a sign;
- unscrew the screws (V fig. 5.3) to open the control board (P fig. 5.3).

After carrying out the operation:
- close the control board (P fig. 5.3).

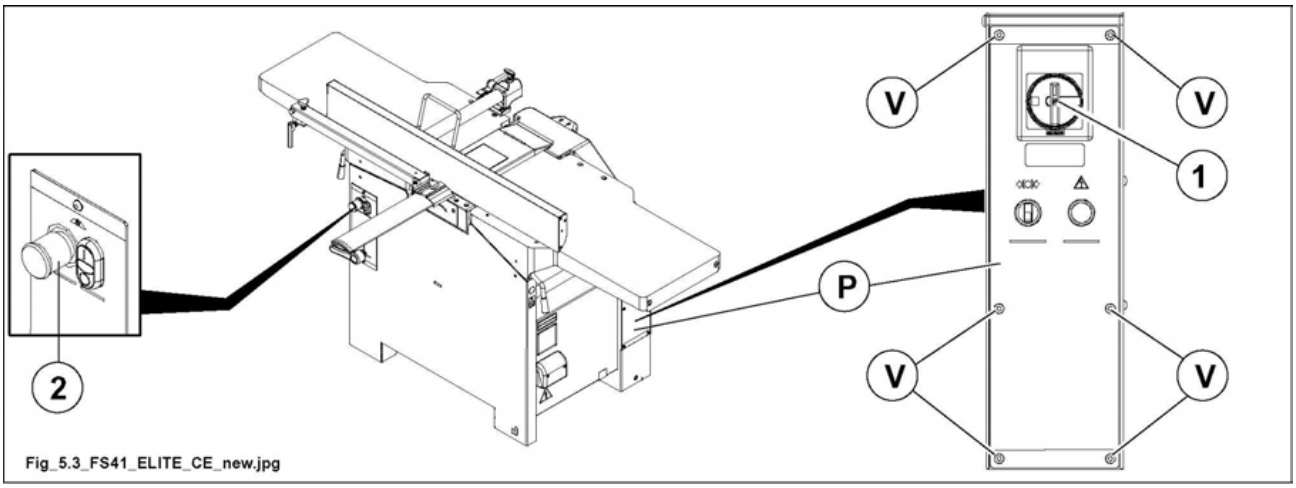


Fig. 5.3

5.4 GENERAL CONTROLS BEFORE MACHINE STARTING

(ev_5-4_0.0)

Make sure that:
- the machine is connected to the suction system.
- Make sure that the emergency buttons (2 fig. 5.4) are released, otherwise turn them in the arrow direction.
- Switch (3 fig. 5.4) OPT is turned to (pilot lamp off).
- Main switch (1 fig. 5.4) is turned to I (ON).

NOTE-INFORMATION:

every day, check that the brake release selector (3) operates correctly, turned to the position (warning light lit) the motor brake must be released, otherwise make the adjustments indicated in section 20.8.

DANGER-WARNING:

any anomalies found during the control of these devices, must be reported promptly to the manager, who will put the machine out of service and call the electrical, mechanical maintenance personnel or the SCM ***Support Service.***

NOTE-INFORMATION:
make sure that the speed indicated is proper for the tool fitted to the saw spindle.

FORBIDDEN:
do not modify or exclude any of the circuits or devices installed.

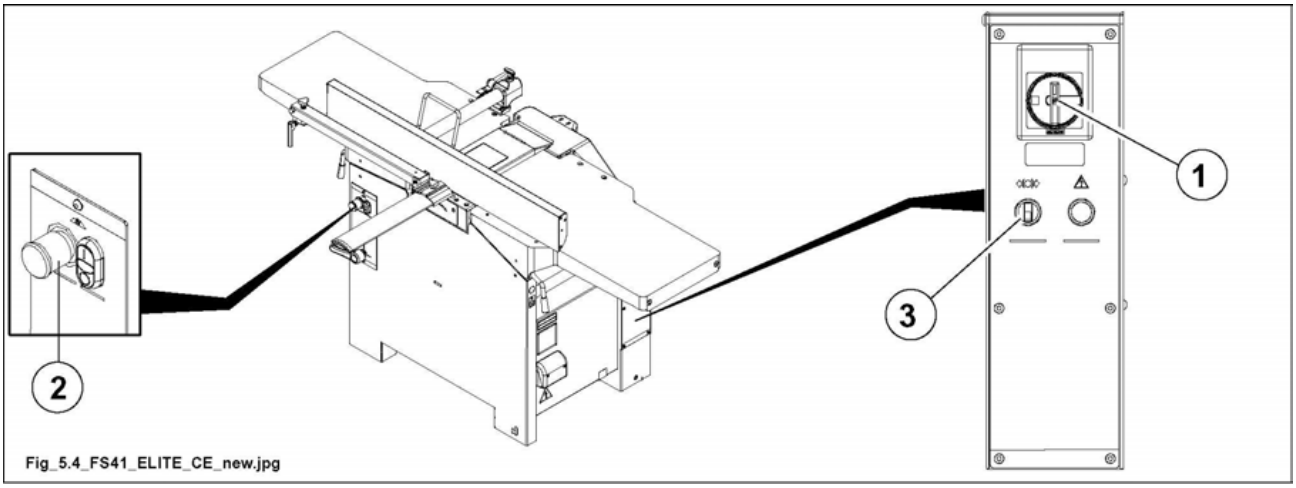


Fig. 5.4

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5.5 MACHINE START-UP - SHUTDOWN

(ev_5-5_0.0)

NOTE-INFORMATION:
carry out the checks of par. 5.4.

DANGER-WARNING:
with single-phase motor avoid short switching cycles.
DO NOT restart the machine immediately after a stop command.
Wait for at least 30 s. before starting the start procedure.

5.5.1 START - STOP SINGLE CYLINDER PLANER - MORTISER

(fs_5-5-1_0.0)

Machine Start procedure

- Check that planer tables are completely closed and lock them with handle (M fig. 5.5-1).
- Turn the padlockable main switch (1 fig. 5.5-1) to I (ON).
- Press push-button (D fig. 5.5-1) to start the machining head.

Machine Stop procedure

1) Press the (H fig. 5.5-1) button.
2) Turn the padlockable main switch (1 fig. 5.5-1) to "0" (OFF).

DANGER-WARNING

it is forbidden to stop the motor by turning selectors (3 fig. 5.5-1) (OPT) to ; unlocked motor brake, pilot lamp switched on.

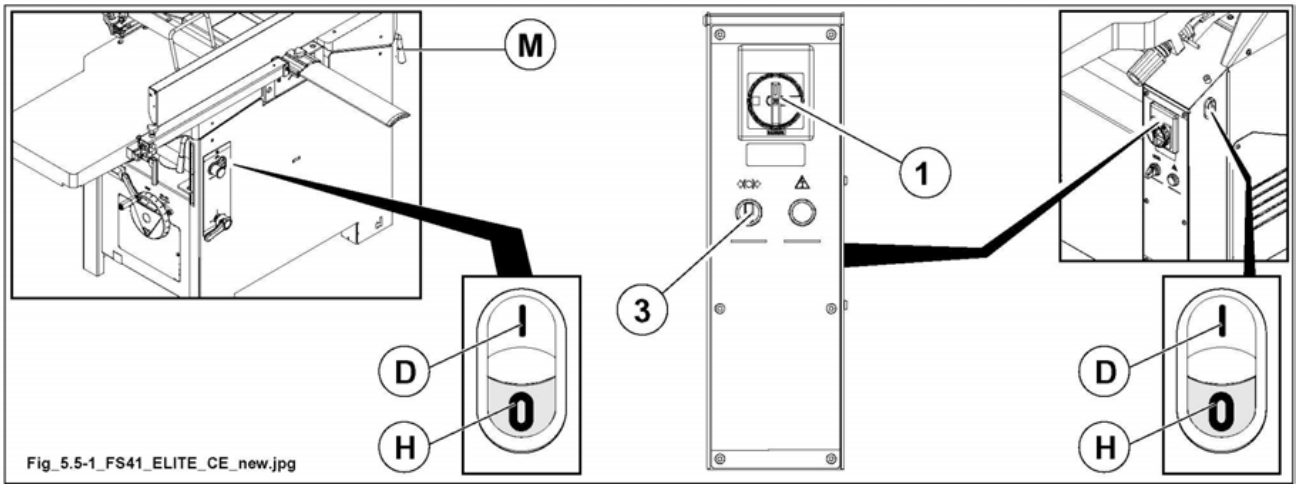


Fig. 5.5.1

5.5.2 START - STOP THICKNESSER

(fs_5-5-2_0.0)

Machine Start procedure

- Check that the planer tables are completely opened (F fig. 5.5-2).
- Check that tilting safety guard is closed (R fig. 5.5-2).
- Turn the padlockable main switch (1 fig. 5.5-3) to I (ON).
- Choose work height (see par. 9.6).
- Press push-button (D fig. 5.5-2) to start the machining head.
- Select feed speed with lever (L fig. 5.5-2).

Machine Stop procedure

1) Press the (H fig. 5.5-2) button.
2) Turn the padlockable main switch (1 fig. 5.5-2) to "0" (OFF).

DANGER-WARNING

it is forbidden to stop the motor by turning selectors (3 fig. 5.5-2) (OPT) to ; unlocked motor brake, pilot lamp switched on.

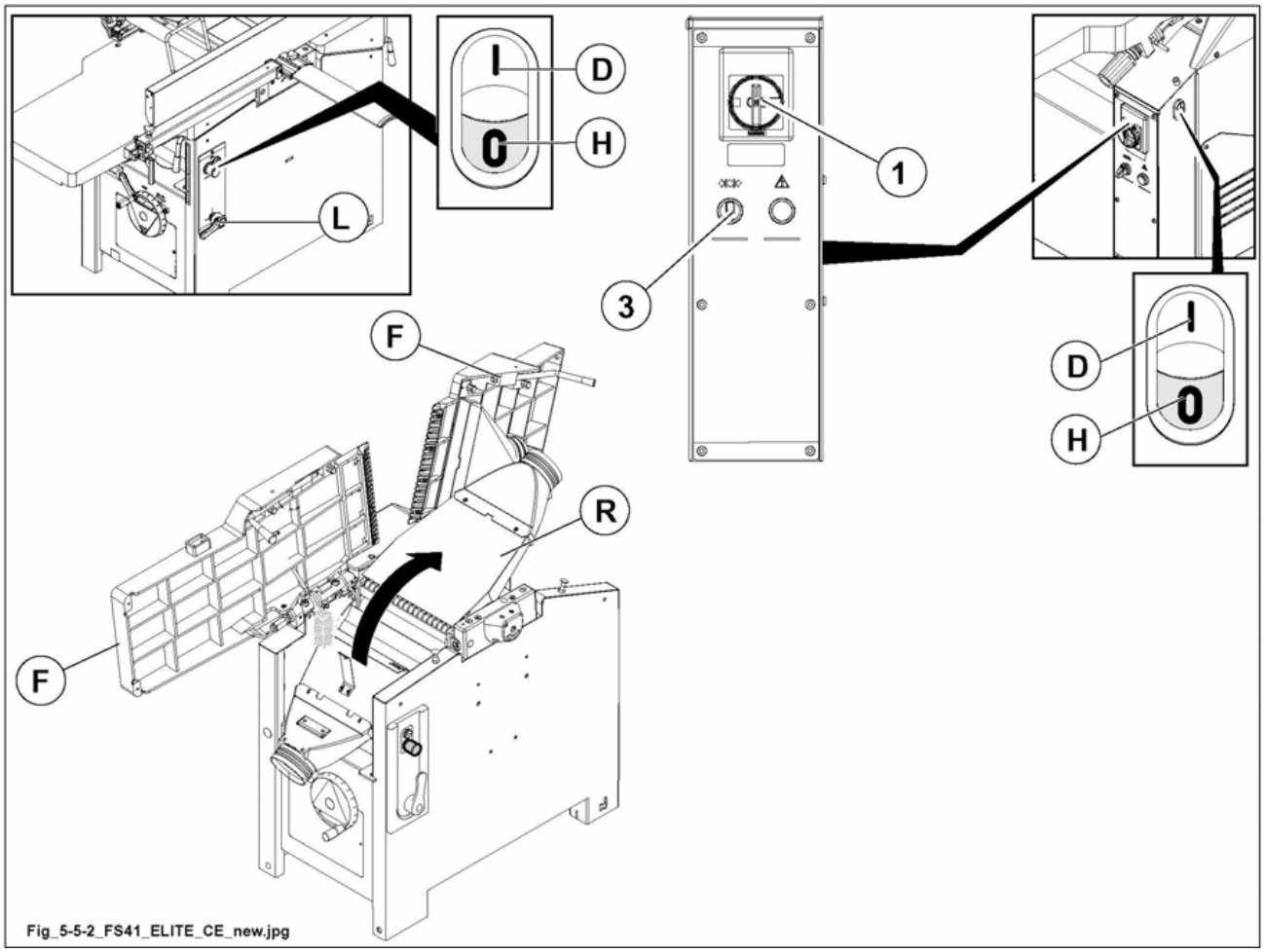


Fig. 5.5-2

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5.11 AUTO-BRAKE MOTOR

(ev_5-11_0.0)

OPT

The spindle rotation occurs by means of autobrake motor.

Under normal working condition selector (3 fig. 5.11) is turned to ; locked motor brake, pilot lamp switched off. When you switch off the motor or you shut off the power, the motor automatically brakes and remains braked until the next spindle start.

In case of adjustment as cutter fitting etc. for which the spindle shall turn freely, turn selector (3 fig. 5.11) to ; the pilot lamp lights up at the same time.

The motor may be started only when selector (3 fig. 5.11) is turned to ; locked motor brake, pilot lamp switched off.

NOTE-INFORMATION:
the material used for auto-brake motors does not contain any cancerous components.

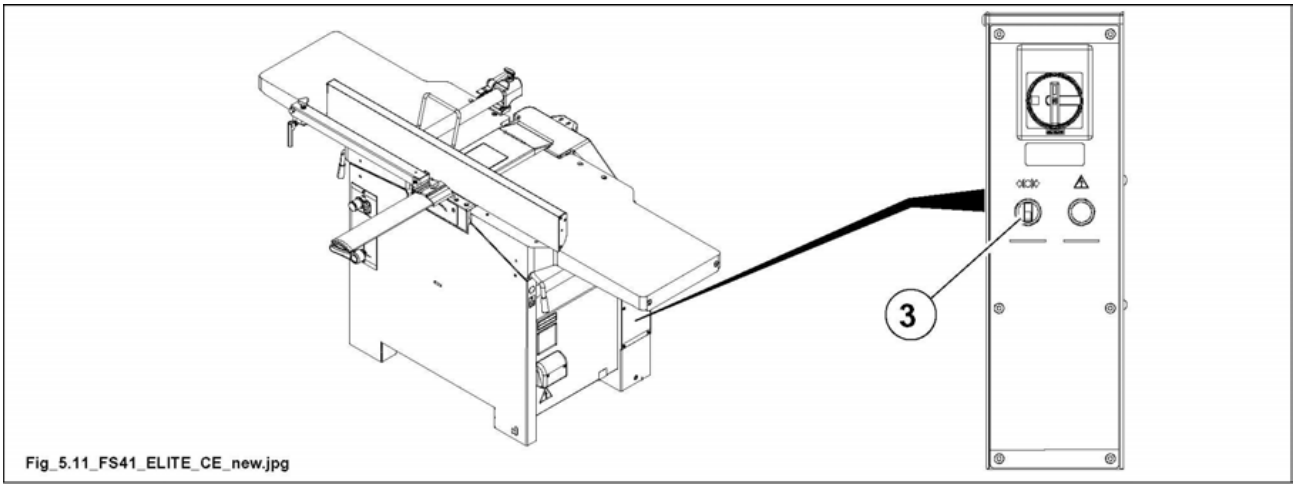


Fig. 5.11

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7.1 KNIFE ADJUSTMENT

(fs_7-1_0.0)

DANGER-WARNING:
before carrying out maintenance operations, adjustments or to dismount any machine member turn main switch (Y fig. 7.1) to 0, lock it then indicate this with a sign.

DANGER-WARNING:

With (OPT) for (CE) motor brake
main switch (Y fig. 7.1) is turned to I (ON).
Turn selector (3 fig.7.1) to (brake release).

Lift the bridge guard to the max. height of its stroke (P fig.7.1).
Position the planing fence (A fig.7.1) at the bottom of the stroke and tighten the lever (H fig.7.1); knob (Z fig.7.1) automatically blocks the guides at the end of the run.

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.
Exclusively mount knives of the same series (with the same height) to prevent unbalancing. Minimum permitted height: 18 mm.

NOTE-INFORMATION:
for safety reasons the blades are completely inserted in the cutter block; before machining adjust them in accordance with the instructions below.

For adjusting the knife projection proceed as follows:

DANGER-WARNING:
CHECK the quota "X", checking that it is:
"X" = 33.5 mm

If the projection "X" of the dowel is not at the aforementioned quota, adjust it as follows:
- loosen the nut (U)
- adjust the screw (V) until the quota "X" reaches the value indicated above
- tighten the nut (U).

1) Position blade adjusters (R fig.7.1) as indicated in the figure A.
Plug (B fig. 7.1) must be inserted in the appropriate hole in the shaft (E fig. 7.1).
At this point secure the knife adjuster (R fig. 7.1) to the table by tighten the screw (2 fig. 7.1).
Position the knife adjuster (L fig. 7.1) as illustrated in the diagram A and lock it in place by tighten the screw (1 fig. 7.1).
If necessary, replace the blades by inserting them in their specific slot (D fig.7.1) ensuring that the cutting edge meets the direction of rotation of the planer (E fig.7.1).
2) Loosen the blocking screws using the specific key (C fig.7.1); the blade comes out pushed by the contrast springs.
3) Make sure springs are in good working order by exerting a light pressure on cutters: these should go deeper into their seats and then go back to their initial position.
4) Make sure cutters and wedges are centered in relation to cutterblock (E fig.7.1).

NOTE-INFORMATION:
to ensure adjustments are correct the knife blade should simultaneously rest on the knife adjusters (R, L fig. 7.1). In this way proper protrusion of the knife from the planer spindle is guaranteed (maximum 1 mm).

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5) Screw in, but do not tighten completely, the lock screws (following the sequence 1, 6, 2, 5, 3, 4) with the relevant wrench (C fig. 7.1) until the knife is resting against the planar spindle (E fig. 7.1). Then carry out final tightening as per the sequence 1, 6, 2, 5, 3, 4, doing so in a uniform manner on all the screws.

In the same way mount all the knives.

When the operation has been completed, set up the machine for buzz planing or thicknessing following the instructions in Chapters 7 and 9.

6) Take off the knife setting gauge.

After the adjusting all knives must be at the same height of the outlet table.

To check the knife adjusting rest a wood ledge on the outlet table first on the right side then on the left side, then manually turn the cutterblock: the knives shall lightly touch the wood ledge uniformly.

DANGER-WARNING

the knife grinding is permitted up to a min. width of 18 mm (fig. 7.1). When this value has been reached, replace the knife;

max. knife projection from the cutterblock: 1 mm.

Position again the bridge safety protection (P fig. 7.1).

Turn selector (3 fig. 7.1) OPT to (brake locking).

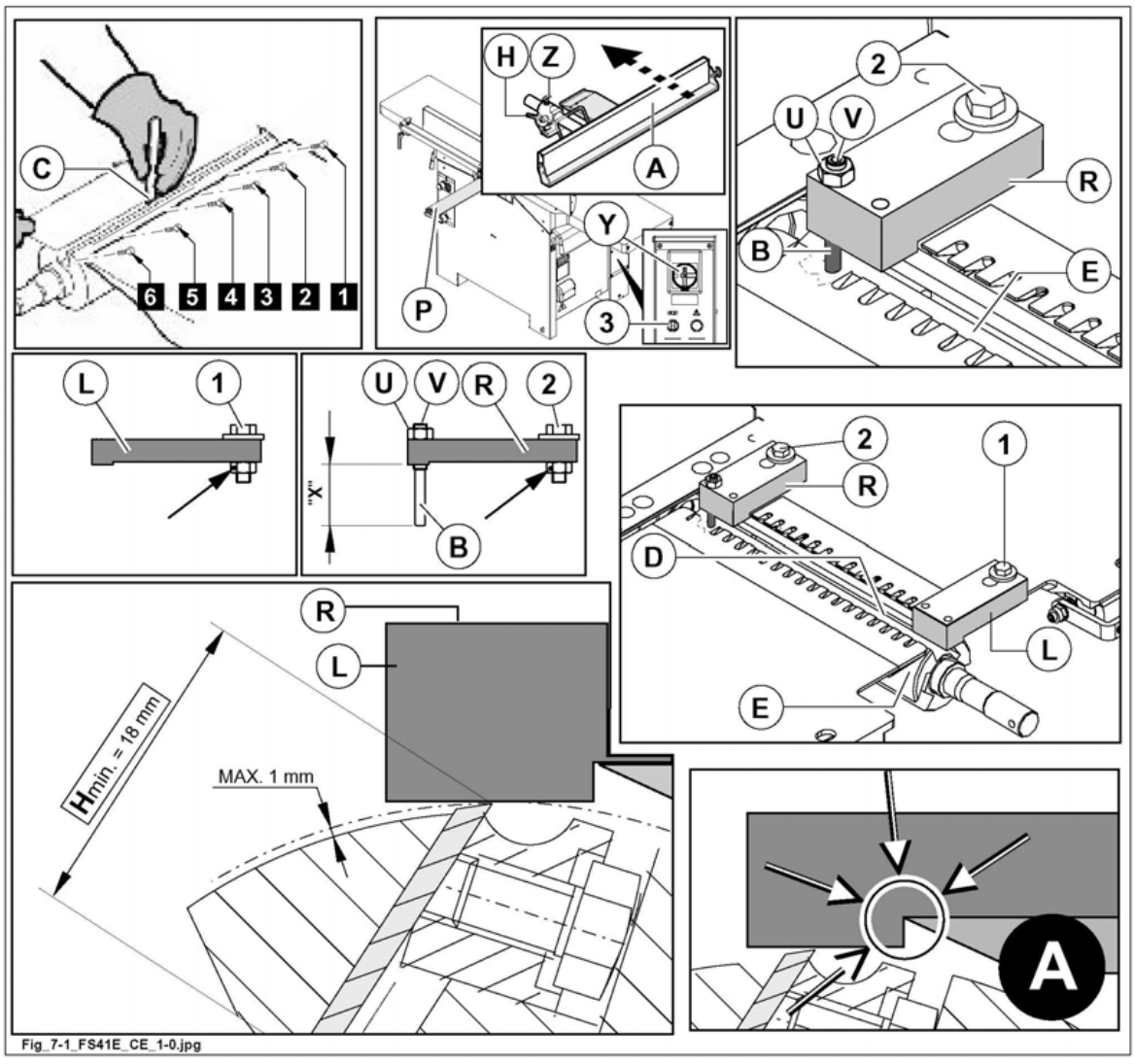
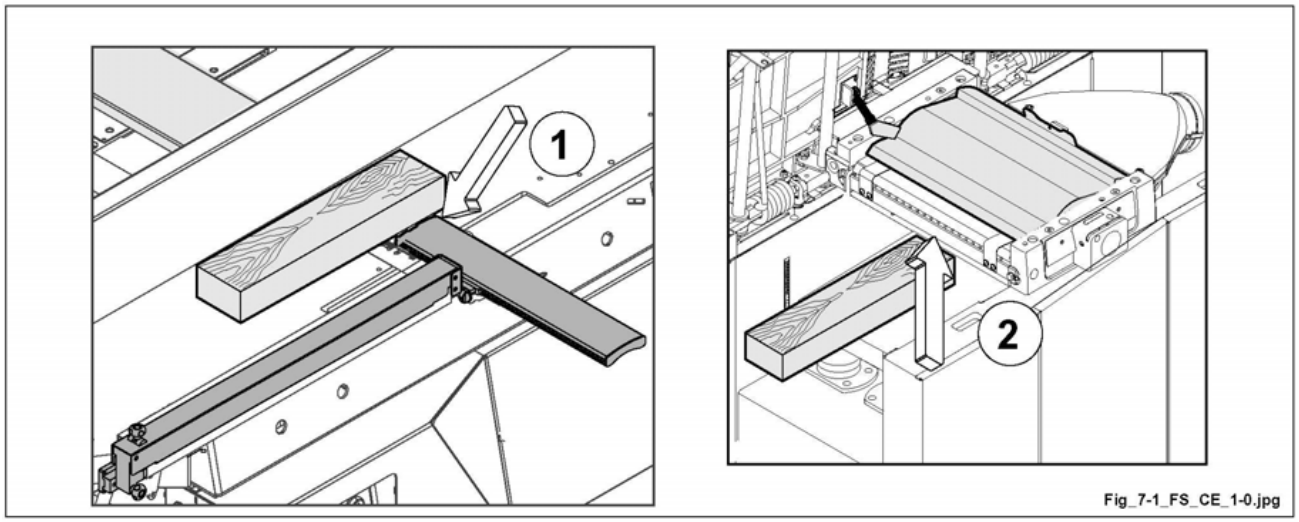


Fig. 7.1

If the knives are well adjusted, the finished workpieces are not convex without the step at their rear end.

NOTE-INFORMATION:
to achieve a quality finish the THICKNESSER MUST BE PERFORMED immediately after the SURFACE PLANER.

To wear the knives uniformly, and thus improve the quality of the work and reduce the maintenance times and costs, it is GOOD PRACTICE to use the knives along the whole length of the cut!
If planing a narrow workpiece, feeding it on the external side (1) of the planer, in the subsequent thicknessing the workpiece must be positioned in order to use the section of knives (2) that was not used in the previous operation.
When working large workpieces it is always GOOD PRACTICE to position the centre line of the workpiece on the centre line of the planer!



IMPORTANT

Keep the knives and gibs always clean to ensure the best performance of the machine.
Remove resin residues, sawings and chips with a hard bristle brush and terpentine, kerosene or light oil.
Never use other different product or synthetic solvents.
Remove dirty then dry each part.
Clean the worktable with a dry cloth.

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(vuota_fs-7-00)

7.2 KNIFE REPLACING

(fs_7-2_0.0)

DANGER-WARNING
before carrying out maintenance operations, adjustments or to dismount any machine member turn main switch (Y fig. 7.2) to 0, lock it then indicate this with a sign.

With (OPT) for (CE) motor brake
main switch (Y fig. 7.2) is turned to I (ON).
Turn selector (3 fig.7.2) to (brake release).

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

The knives supplied with the machine MUST be SHARPENED before they are assembled on the planer.

All the knives must be replaced together, even if only one of them is faulty or worn.

DANGER-WARNING
do not start the cutterblock motor when the knives are not fitted.

Lift the bridge guard to the max. height of its stroke (S fig.7.2).

For replacing the knife projection proceed as follows:

- Position the planing fence (A fig.7.2) at the bottom of the stroke and tighten the lever (L fig.7.2); knob (Z fig.7.2) automatically blocks the guides at the end of the run.
- Slacken the lever (B fig.7.2) and raise the wire outfeed table (N fig.7.2) and then the wire infeed table (O fig.7.2) (when table (N fig.7.2) is opened this sets off the micro that prevents the machine from starting).

CAUTION:
check that the block (K fig. 7.2) of the table opening is correctly positioned.

- Turn the cutterblock in order to bring the knife to be replaced to the top part.
- Loosen screws (F fig. 7.2) of the knives with the 7 mm wrench.
  The knives come out pushed by the internal springs.
- Withdraw the knife and replace or grind it.
- Fit the knives and adjust them; see the previous paragraph.
- When the operation has been completed, set up the machine for buzz planing or thicknessing following the instructions in Chapters 7 and 9.

DANGER-WARNING
turn selector (3 fig.7.2) (OPT) to (brake locking).

DANGER-WARNING
the knife grinding is permitted up to a min. width of 18 mm (fig.7.2). When this value has been reached, replace the knife.

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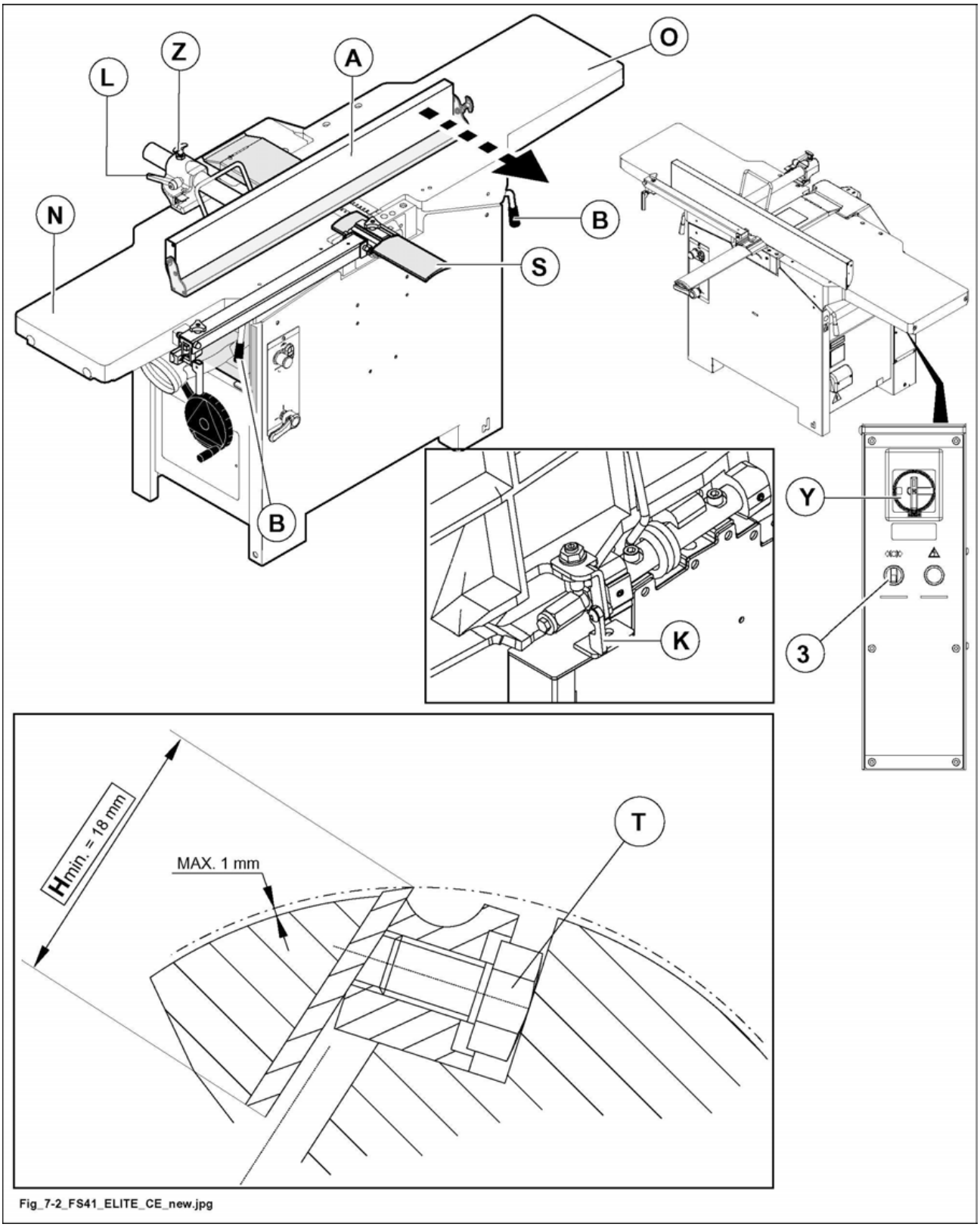


Fig. 7.2

7.4 REPLACING THE THROW-AWAY KNIVES

(fs_7-4_0.0)

OPT

DANGER-WARNING:
before carrying out maintenance operations, adjustments or to dismount any machine member turn main switch (Y fig. 7.4) to 0, lock it then indicate this with a sign.

With (OPT) for (CE) motor brake
main switch (Y fig. 7.4) is turned to I (ON).

Turn selector (3 fig.7.4) to (brake release).

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

All the knives must be replaced together, even if only one of them is faulty or worn.

DANGER-WARNING
do not start the cutterblock motor when the knives are not fitted.

Do not unblock the screws (B fig. 7.4).

Lift the bridge guard to the max. height of its stroke (S fig.7.4).

DANGER-WARNING
loosen handle (N fig.7.4)and move the fence totally forwards; tighten handle (N fig.7.4).

Knob (Z fig.7.4) automatically blocks the guides at the end of the run.

For replacing the knife projection proceed as follows:

- Slacken the lever (M fig.7.4) and raise the wire outfeed table (P fig.7.4) and then the wire infeed table (O fig.7.4) (when table (P fig.7.4) is opened this sets off the micro that prevents the machine from starting).

CAUTION:
check that the block (K fig. 7.4) of the table opening is correctly positioned.

- Turn planer spindle (F fig. 7.4) until bring the knife to be changed next to the extraction hole (A fig. 7.4).
- Loosen the gibs by exerting a light pressure with a wood or plastics hammer.
- By using a screwdriver push the knife outwards.
- Take hold of the knife with one hand and pull it out.
- Fit the new knife (E fig. 7.4) or the old one after turning it; center the knife in length direction.
- Place the machine accessories according to the working to be carried out
- Starting machine, the gibs (U fig.7.4) position themselves automatically.

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DANGER-WARNING

turn selector (3 fig.7.4) (OPT) to (brake locking).

Take a piece of hard wood and plane it on its whole length for a few minutes, in order to get a better locking of the cutter-gib unit.

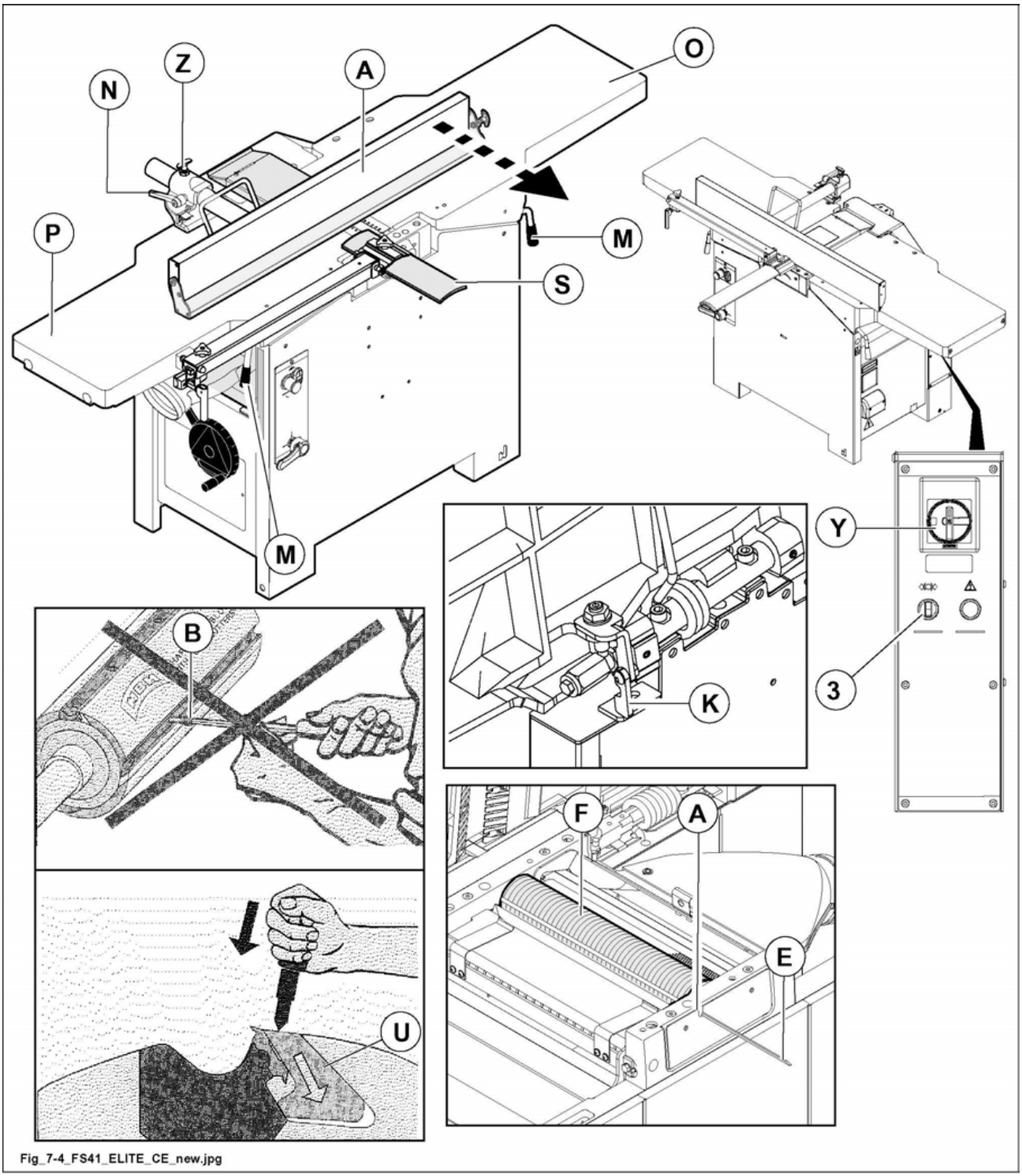


Fig. 7.4

7.5 HELICOIDAL PLANER - TIPS REPLACEMENT

(fs_7-5_0.0)

OPT

DANGER-WARNING:
before carrying out maintenance operations, adjustments or to dismount any machine member turn main switch (Y fig. 7.5) to 0, lock it then indicate this with a sign.

With OPT for CE motor brake
main switch (Y fig. 7.5) is turned to I (ON).

Turn selector (3 fig.7.5) to (brake release).

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.
Lift the bridge guard to the max. height of its stroke (S fig.7.5).

For correct routine maintenance and cleaning, reach the planer unit and carry out the operations described below.

DANGER-WARNING
loosen handle (N fig.7.5)and move the fence totally forwards; tighten handle (N fig.7.5).

Knob (Z fig. 7.5) automatically blocks the guides at the end of the run.

- Slacken the lever (M fig.7.5) and raise the wire outfeed table (P fig.7.5) and then the wire infeed table (O fig.7.5) (when table (P fig.7.5) is opened this sets off the micro that prevents the machine from starting).

CAUTION:
check that the block (K fig. 7.5) of the table opening is correctly positioned.

- Rotate the planer (F fig. 7.5) to move the tip being replaced in a more accessible position.
  Loosen securing screw (V fig. 7.5) and extract tip-tool (U fig. 7.5).
  Clean rest surface (C fig. 7.5) to prevent any dust from being accumulated.
  Insert again the used tip-tool after you have rotated itself of 90 degrees as to its initial position or insert a new one.
  Insert the securing screw (V fig. 7.5) and use a dynomometric key (Z fig. 7.5) to tighten it.
- When the operation has been completed, set up the machine for buzz planing or thicknessing following the instructions in Chapters 7 and 9.

- Place the machine accessories according to the working to be carried out.

DANGER-WARNING

turn selector (3 fig.7.5) OPT to (brake locking).

DANGER-WARNING
the tightening torque must be: 5,7 N • m
Each tip-tool has 4 cutting edges; after you have utilized all its cutting edges, the tip-tool must be replaced. Do not utilize tip-tools reground.

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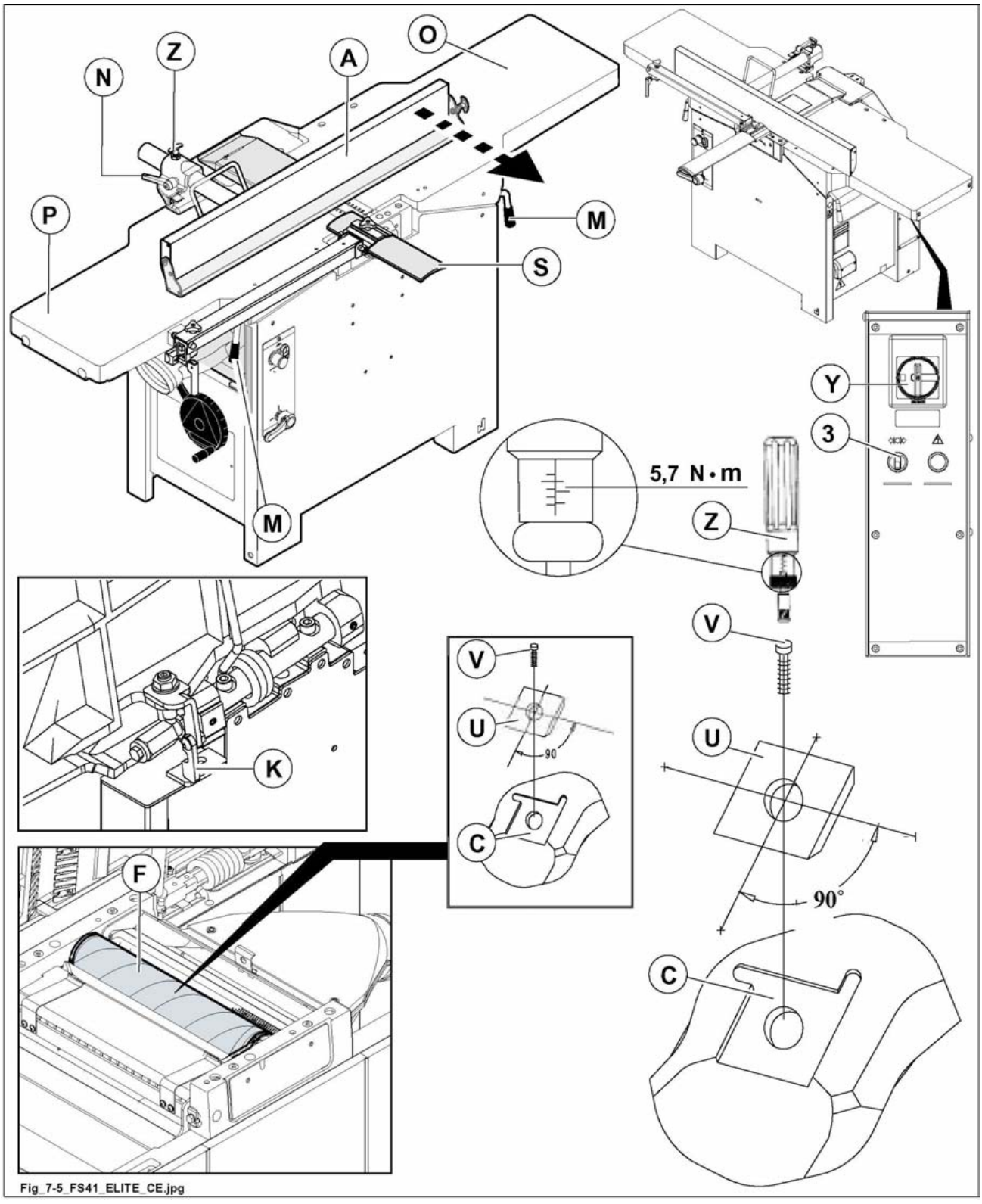


Fig. 7.5

7.6 SURFACING TABLES ADJUSTING

(fs_7-6_0.0)

DANGER-WARNING
do not move the inlet table when the cutterblock is rotating.

DANGER-WARNING
before moving the inlet table, make sure that no object is between the inlet table and the fence.

7.6.1 INLET TABLE

(fs_7-6-1_0.0)

- Loosen the locking (A fig. 7.6-1).
- Operate on the handle (B fig. 7.6-1) in order to place the table (D fig. 7.6-1) depending on the chosen removal: read the traverse on the data plate (C fig. 7.6-1).
- When the adjustment is over, tighten the locking (A fig. 7.6-1).

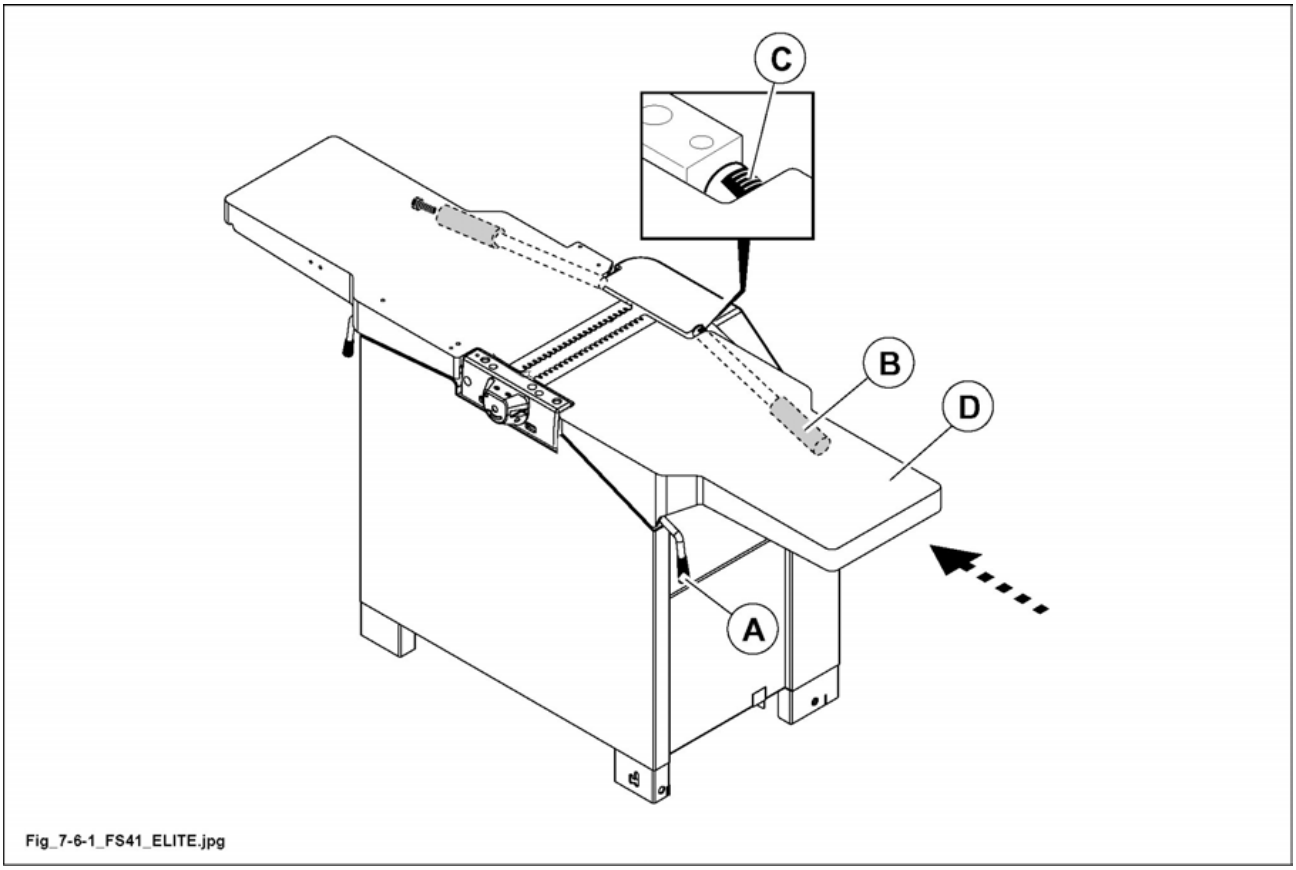


Fig. 7.6-1

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7.6.2 OUTLET TABLE

(fs_7-6-2_0.0)

NOTE-INFORMATION:
the outfeed table (E fig. 7.6-2) is positioned level to the cutter block knife and does not need to be adjusted.

The table has been adjusted at factory during the machine test.

To make sure it is correct, place a well planed workpiece between the surface and the cutterblock; manually turn the cutterblock and make sure the cutters skim the workpiece.

If it is necessary to carry out a new alignment, loosen the lever (F fig. 7.6-2) and the screw (H fig. 7.6-2).
Get the table (E fig. 7.6-2) aligned by operating the handle (G fig. 7.6-2).
Tighten the screw (H fig. 7.6-2) and the lever (F fig. 7.6-2) when the adjustment is over.

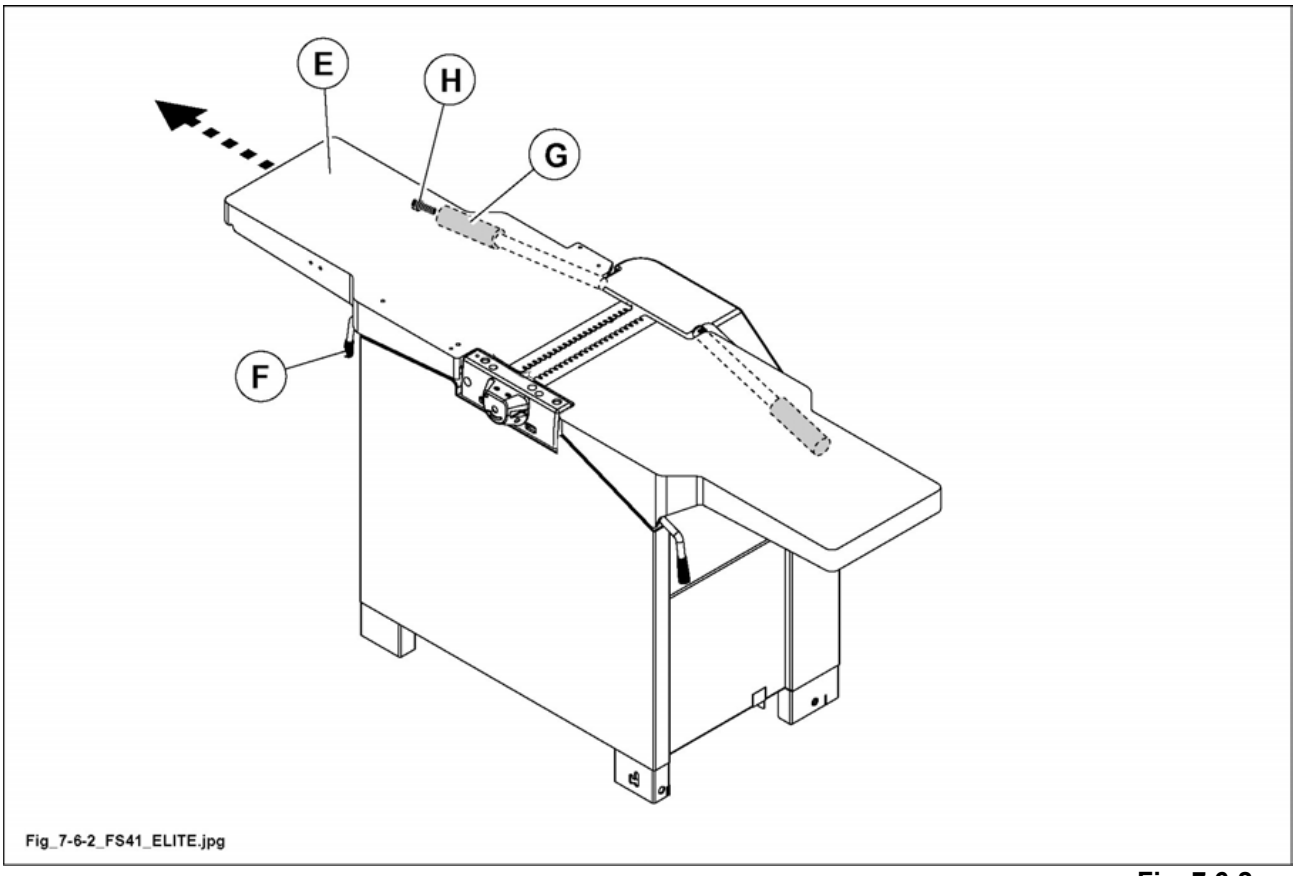


Fig. 7.6-2

7.8 FENCE

(fs_7-8_0.0)

DANGER-WARNING
during the machining, the protections (F fig. 7.8) and (L fig. 7.8) must always be positioned on the cutterblock.

7.8.1 LONGITUDINAL SHIFTING

(fs_7-8-1_0.0)

- Loosen lever (A fig.7.8)and manually move fence (B fig.7.8) to the desired position; tighten lever (A fig.7.8).

NOTE-INFORMATION:
check perfect cleanage of the sliding rod (E fig. 7.8).

7.8.2 TILTING

(fs_7-8-2_0.0)

- Release handle (C fig 7.8) and turn the fence manually (B fig. 7.8) to the angle of tilt required, visible on the graduated scale (T fig. 7.8); lock the lever again (C fig. 7.8).

NOTE-INFORMATION:
fence (B fig. 7.8)may be tilted from 90° to 45° and in any intermediate position.

For eventual corrections of the stops for extreme positions (90° and 45°) operate on screw and counternut (D fig. 7.8) for 90° position and on screw and counternut (H fig. 7.8) for 45° tilting.

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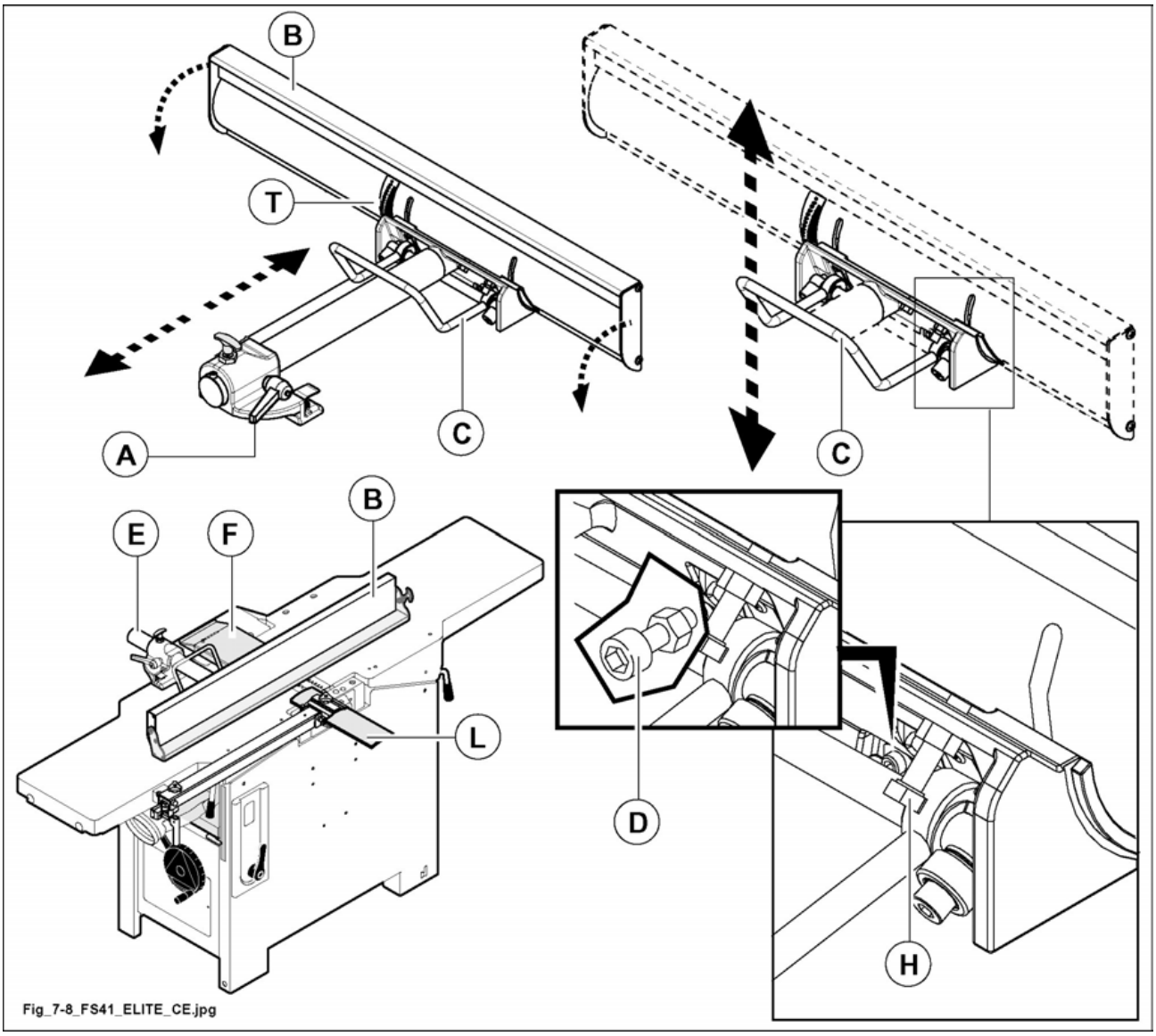


Fig. 7.8

7.10 TURNOVER ADDITIONAL FENCE

(fs_7-10_0.0)

OPT

NOTE-INFORMATION:
this device serves for making the surfacing of thin workpieces easier.

DANGER-WARNING
do not machine workpieces too small or too big for the machine.
See relative paragraph 3.1 "Dimensions of workpiece to be milled".

- To use additional fence (D fig.7.10), pull small knob (A fig.7.10) and turn it to position in front of the main fence (1 fig.7.10).

- To switch it off, hold the small knob (A fig.7.10) pulled and turn the additional fence to position (2 fig.7.10) (automatic locking).

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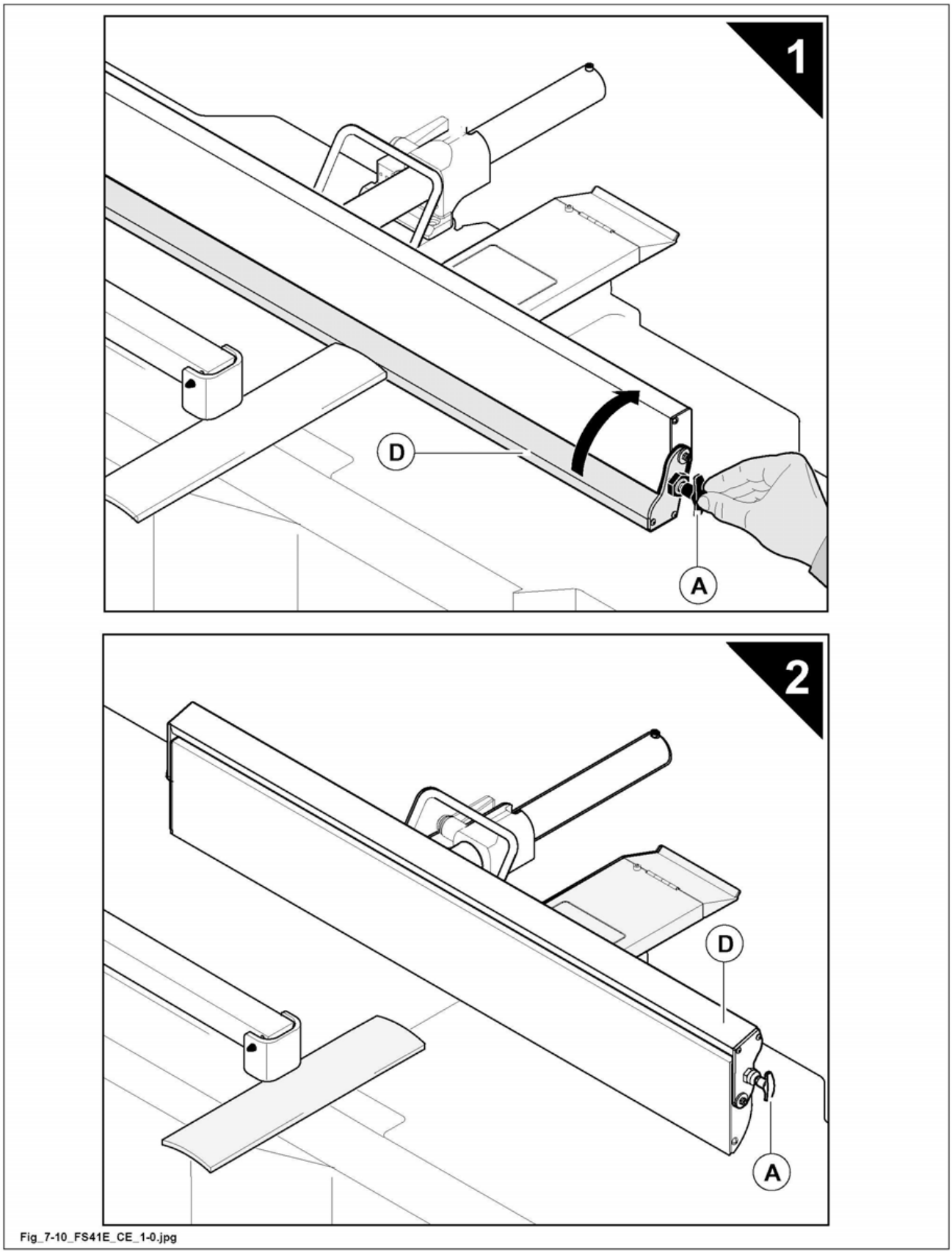


Fig. 7.10

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8.1 FITTING THE PARTS DEMOUNTED FOR TRANSPORT REASONS

(fs_8-1_0.0)

For packing and transport reasons some machine members are removed.

8.1.1 MORTISER FITTING

(fs_8-1-1_0.0)

OPT

DANGER-WARNING
all fitting and demounting operations require 2 persons.

For safety reasons, before raising the mortiser, always block the cross and longitudinal table drive as shown below.
Move the table in the direction of the arrow Z and block by tightening lever (L fig. 8.1-1) (turn to stop first); press the two side pins all the way in and tighten the 2 knobs (V fig. 8.1-1).

NOTE-INFORMATION:
where supplied, fit the angle (K fig. 8.1-1) using the special holes (T fig. 8.1-1).

Carry out the fitting as follows:

1) Prepare the screws (A fig. 8.1-1) and the relative grommets on the base of the machine.
2) Raise the mortiser (B fig. 8.1-1) and fit the dovetail slide (C fig. 8.1-1) on the heads of screws (A fig. 8.1-1).
3) Fit levers (H and S fig.8.1-1).
   Lever (S fig. 8.1-1):
   - the lever (S fig. 8.1-1) is partially assembled in the factory by inserting one end in the joint (8 fig. 8.1-1);
   - loosen the screws (11 fig. 8.1-1);
   - insert th epin (9 fig. 8.1-1) in the hole (10 fig. 8.1-1);
   - tighten the screws (11 fig. 8.1-1);
   - tighten the nut (12 fig. 8.1-1) leaving as little play as possible.

   Lever (H fig. 8.1-1):
   - insert th elever (H fig. 8.1-1) in the joint (3 fig. 8.1-1);
   - tighten the screw (4 fig. 8.1-1) in the hole (5 fig. 8.1-1) so that the lever (H fig. 8.1-1) has as little play as possible;
   - tighten the nut (6 fig. 8.1-1) on the part (7 fig. 8.1-1).

4) Screw down the screws (A fig. 8.1-1) until joining the mortising machine to the base and adjust the parallelism of the table with respect to the bit (E fig. 8.1-1) (see "Spindle bits - assembly" par. 8.1.2) acting on the screws (D fig. 8.1-1) and on the four grub screws (F fig. 8.1-1).
5) Check proper adjustment by moving the working table transversally, and tighten the screws (A fig. 8.1-1).
6) Ensure that the four grub screws (F fig. 8.1-1) rest on the base.
7) Reposition the pin (1 fig. 8.1-1), presser belt support, as shwon in the figure.

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NOTE-INFORMATION:
ensure that the work table is a distance of 11mm from the point centre.

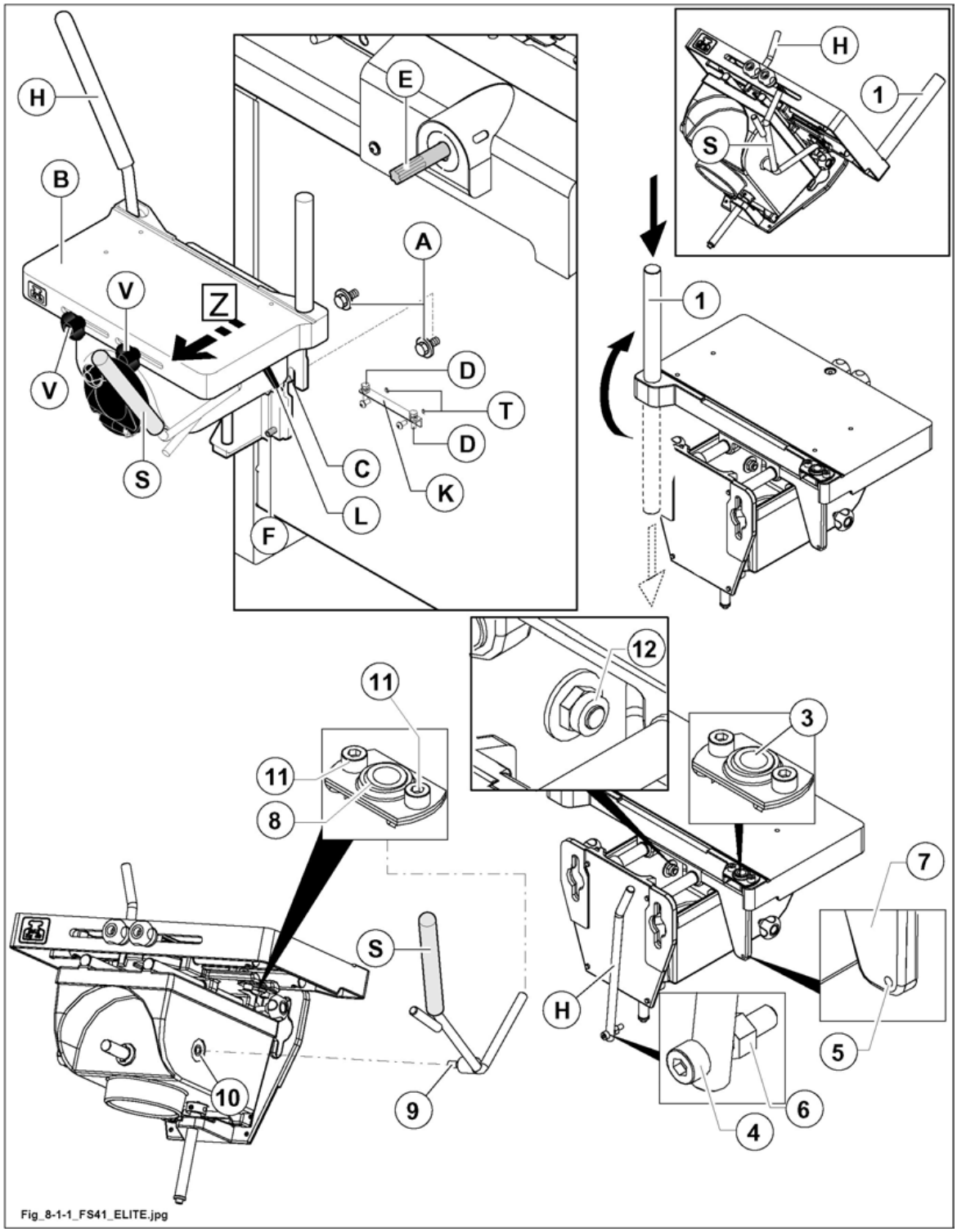


Fig. 8.1-1

8.1.2 SPINDLE BITS - ASSEMBLY

(fs_8-1-2_0.0)

DANGER-WARNING
use gloves for handling the bit.

The machine can be equipped with a fixed chuck, self-centring chuck or a gripper carrier chuck.

1) Fixed spindle
Mounts 16 mm right bits which are locked by two screws.

2) Self-centering spindle OPT
Mounts from 3 to 16 mm right bits which are locked by a screw.

3) Collet spindle OPT
Fit bits with shanks of Ø 5 mm, Ø 10 mm, Ø 16 mm.

Fitting the tool (fixed and selfcentring spindle)
Tighten the tool (D fig. 8.1-2) though the holes (A fig. 8.1-2) din the spindle cover.

Fitting the tool (collet spindle)
Tighten the tool (D fig. 8.1-2) using accessory pin (F fig. 8.1-2) and special key (G fig. 8.1-2) as indicated in figure.

DANGER-WARNING
it is prohibited to use abrasive grinding wheels.
When the slotter is not in use, it is necessary to disassemble the bit, as it rotates jointly with the surfacing table shaft and it cannot be protected.
The bits must be locked over the entire useful length of the spindle.

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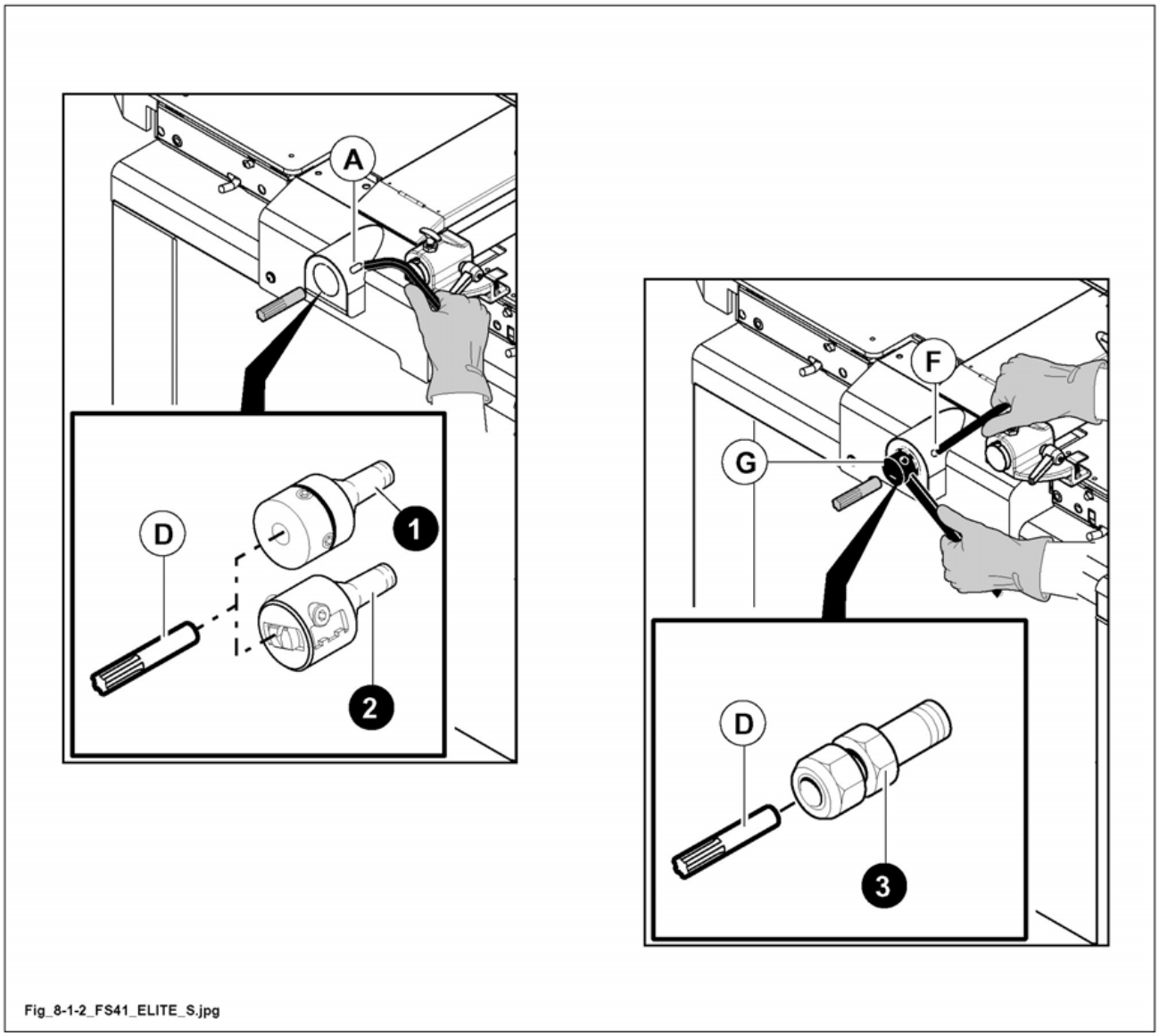


Fig. 8.1-2

8.2 MORTISER USE

(fs_8-2_0.0)

OPT

SAFETY OVER ALL

DANGER-WARNING
the tool must turn in the direction indicated by the arrow as shown in fig. 8.2.
Switch on the machine for a fraction of a second and check the direction of rotation. Should rotation be incorrect, follow the instructions listed in Chap. 4 "Electrical connection".
Mount the tool following the instructions and warnings listed in par. 8.1.2.
Check that the tool is well tightened.

DANGER-WARNING
always make sure that the workpiece is rightly clamped on the table.

For long workpieces use a support the height of which may be adjusted and eventually add a clamping device to the support (not supplied by SCM***).***

Work with moderate feed speed with small strokes because the bit is brittle.

Before starting working always make sure that the cutterblock is protected.

As the bit and cutterblock rotate together, after the use as a mortiser demount the bit as it is not protected.

DANGER-WARNING
before starting working always make sure that the cutterblock is totally covered by the fence and its rear guard moved to the front side of the machine as much as possible (see G fig. 8.2).

After adjusting the table stroke, set the workpiece against stop (B fig. 8.2)and clamp it with foot(Z fig. 8.2).

With levers (A and S fig. 8.2)start drilling in longitudinal direction with a drilling depth equal to 10 mm, then carry out the drilling in the traverse direction along the entire length of the slot desired.

The milling may be carried out with many adiacent holes, the slot is obtained with a traverse stroke.

This technique is necessary to avoid the bit rupture (tool always brittle), to permit the chips exhaust and to avoid the overheating of the tool which may be damaged so the working quality is not ensured.

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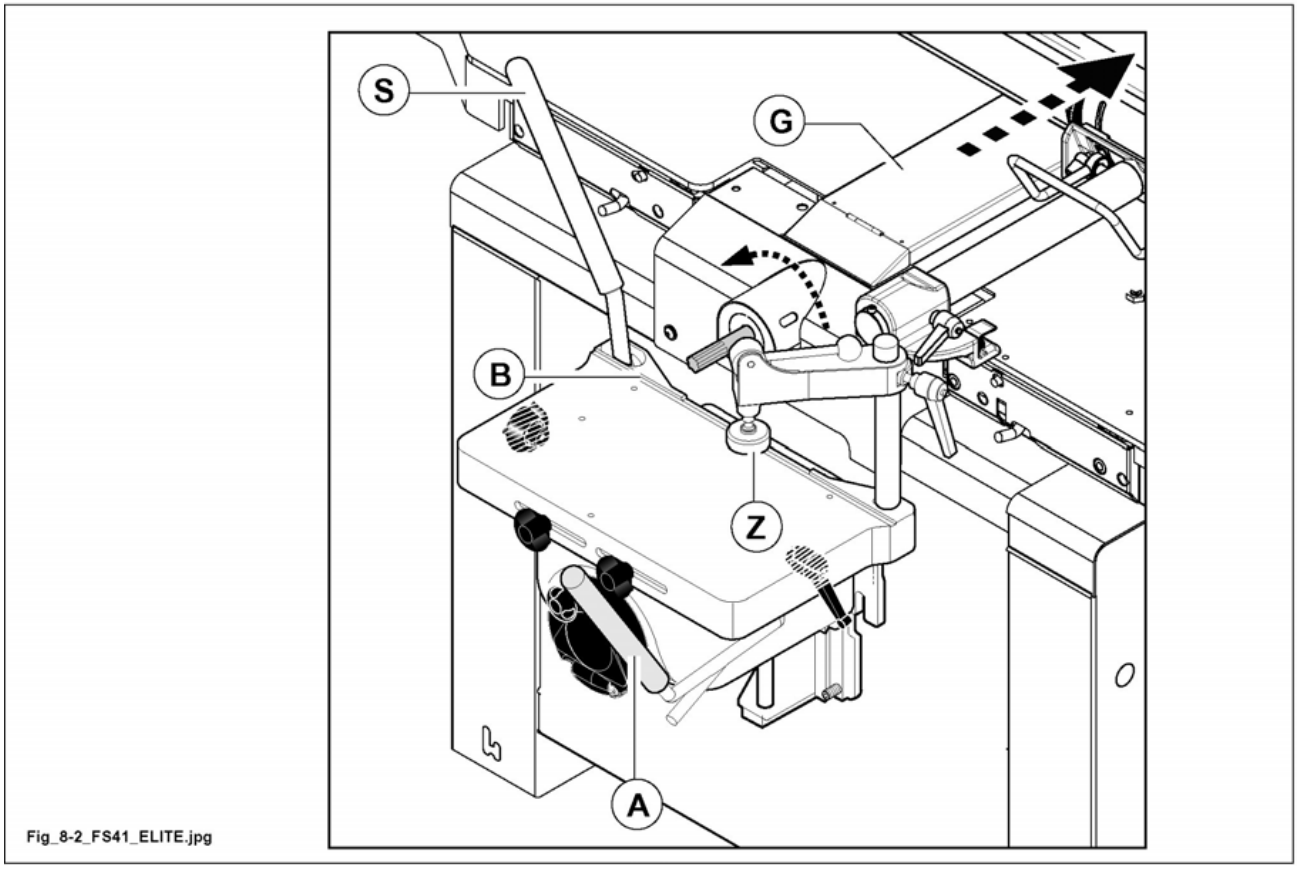


Fig. 8.2

8.3 ADJUSTMENTS

(fs_8-3_0.0)

OPT

With the use of slotter it is possible to carry out holes and slots both dead or through.

- Place the workpiece on the table, stopping it and securing it by means of the presser (B fig. 8.3).

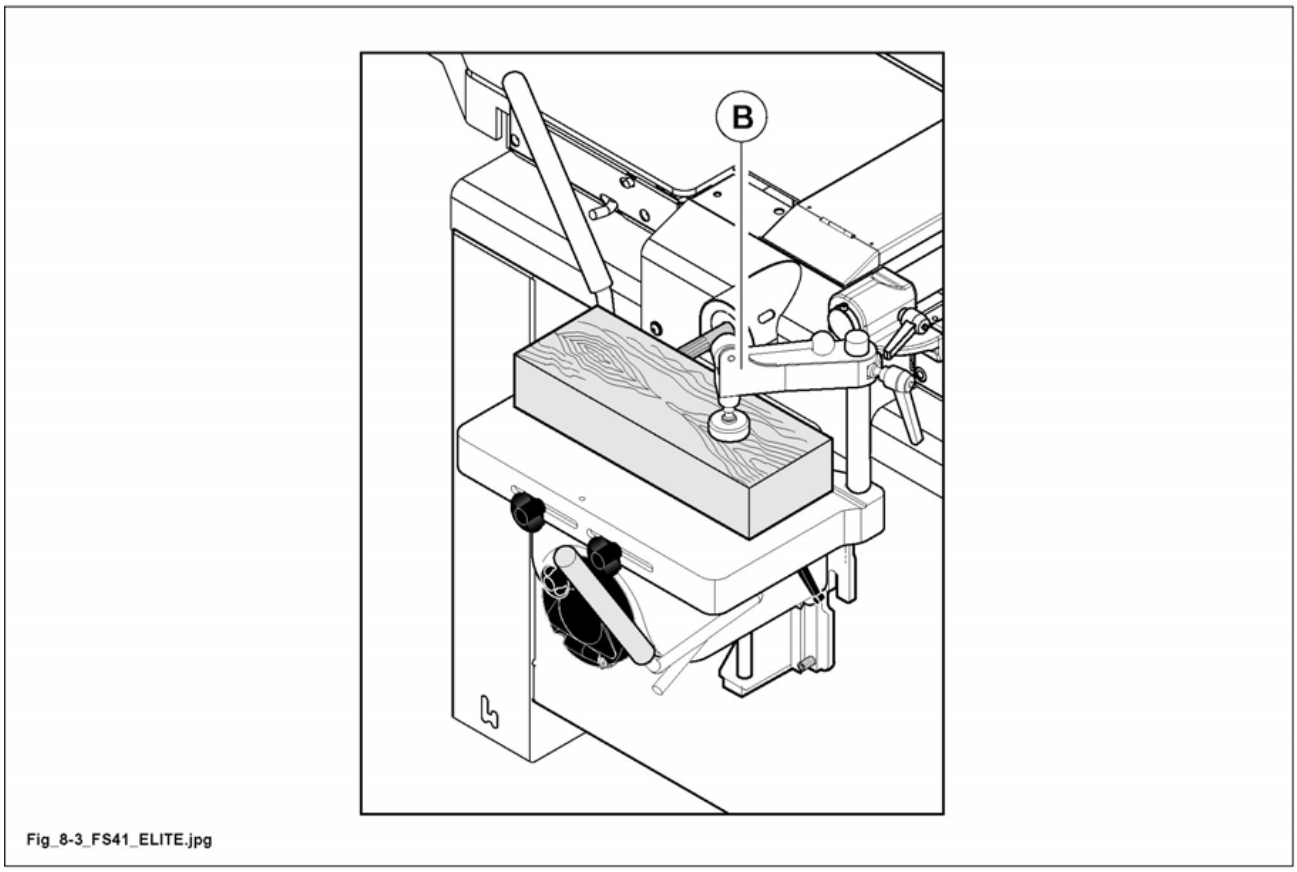


Fig. 8.3

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8.3.1 SLOT DEPTH LIMITATION

(fs_8-3-1_0.0)

In the case of dead holes you have to adjust the stroke of additional table (A fig. 8.3-1) (axis Z):

- try the forward stroke using lever (F fig. 8.3-1) and lock the depth stop by tightening lever (H fig. 8.3-1).

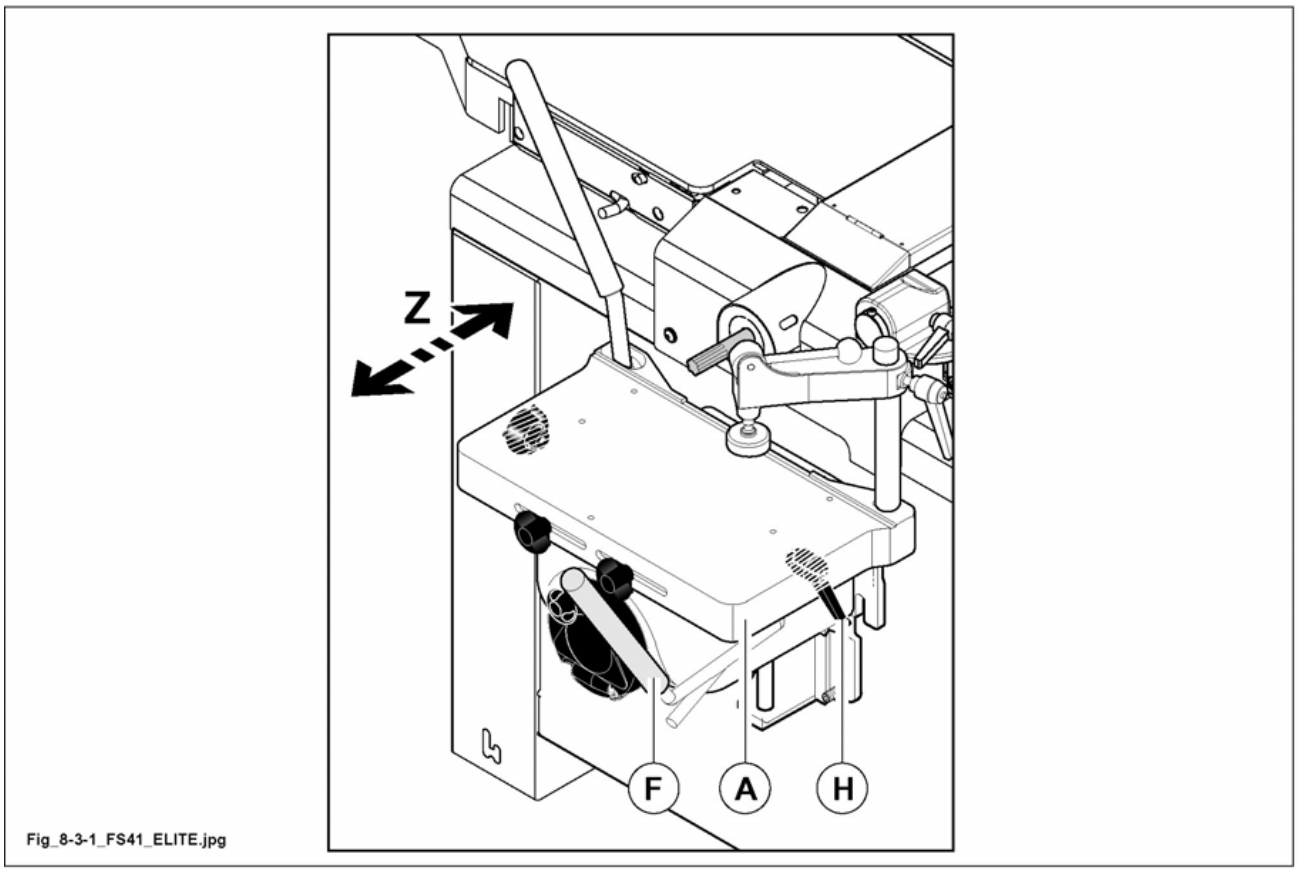


Fig. 8.3-1

8.3.2 SLOT WIDTH LIMITATION

(fs_8-3-2_0.0)

For mortising which does not go through the workpiece, adjust the depth of the stroke, as already indicated, and the transversal stroke of the table (X-axis):

- using a pencil, mark the position of the mortise to be cut on the workpiece (1 fig. 8.3-2).
- Test the transversal stroke using lever (D fig. 8.3-2) according to the mortise to be cut and adjust the side stops to suit, by tightening the knobs (E fig. 8.3-2).

NOTE-INFORMATION:
to carry out slots, it is necessary to drill a row of holes, then, moving the table by means of the lever (D fig. 8.3-2), the inside of the slot is thoroughly cleaned.

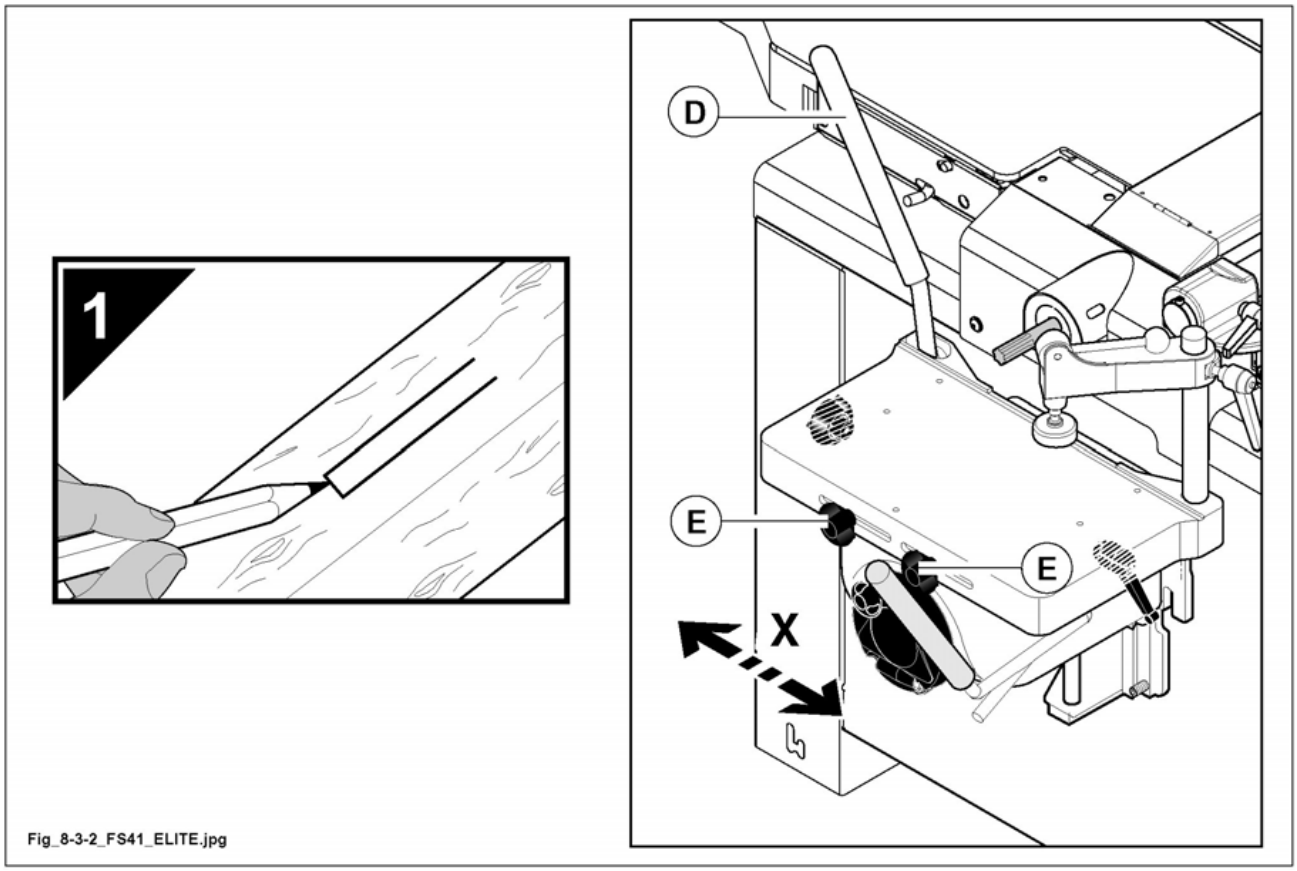


Fig. 8.3-2

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8.3.3 HEIGHT ADJUSTING

(fs_8-3-3_0.0)

- Position the table at the correct height using the accessory handwheel (C fig. 8.3-3); lock it in position by tightening the knob (G fig. 8.3-3).

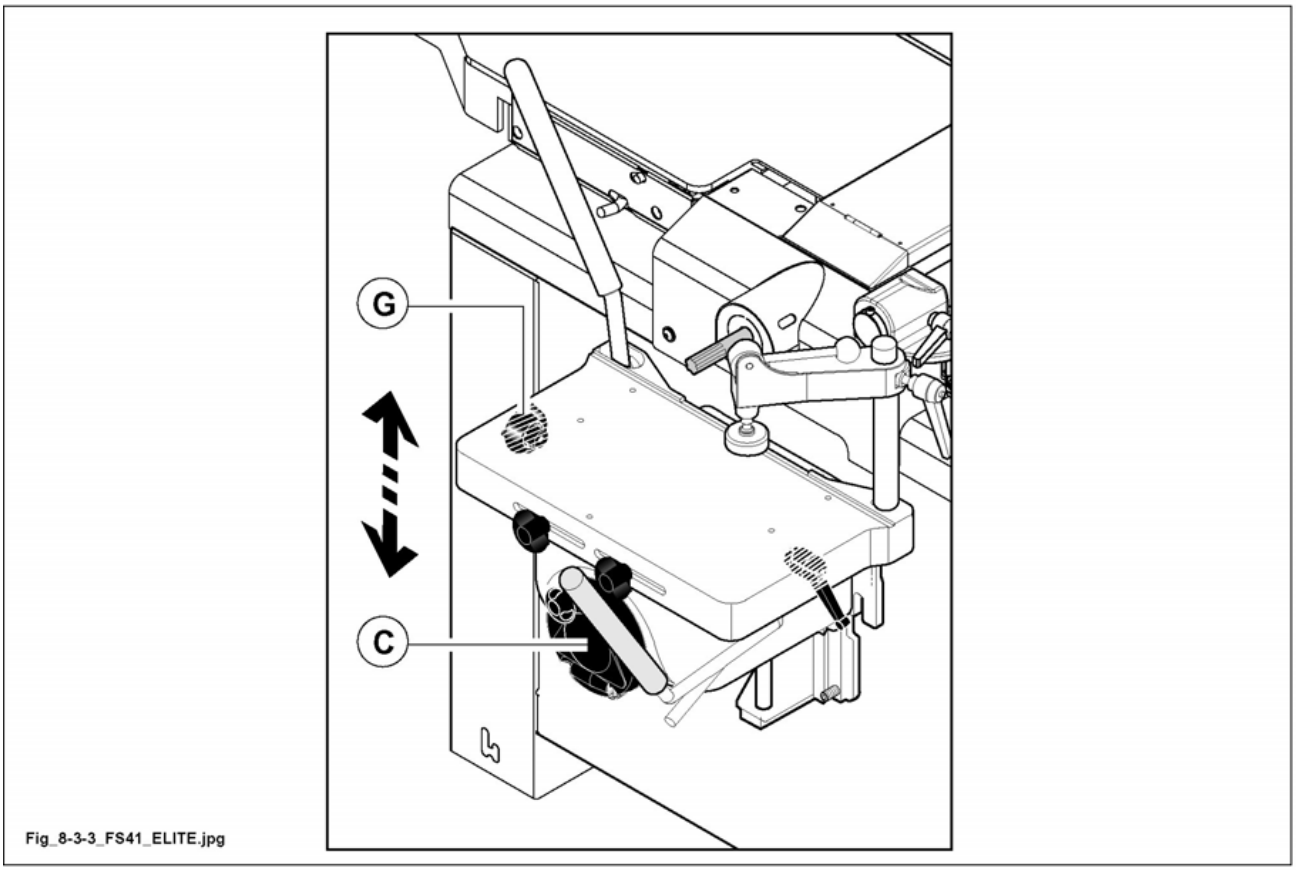


Fig. 8.3-3

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9.1 PRELIMINARY ADJUSTMENT FOR PASSING FROM PLANING TO THICKNESSING

(fs_9-1-0.0)

NOTE-INFORMATION:
THICKNESSING
This operation is carried out for obtaining the required thickness of a given workpiece after surfacing.

9.1.1 MACHINE WITH MANUAL TABLE LIFTING

(fs_9-1-1_0.0)

- Stop cutterblock motor.
- Wait for a few seconds until the cutterblock stops completely.
- Position the planing fence (A fig. 9.1-1) at the bottom of the stroke and tighten the lever (L fig. 9.1-1); knob (Z fig. 9.1-1) automatically blocks the guides at the end of the run.
- Slacken the lever (B fig. 9.1-1) and raise the wire outfeed table (U fig. 9.1-1) and then the wire infeed table (O fig. 9.1-1) (when table (U fig. 9.1-1) is opened this sets off the micro that prevents the machine from starting).

CAUTION:
check that the block (N fig. 9.1-1) of the table opening is correctly positioned.

- Turn the chip conveyor hood (F fig. 9.1-1) upside down securing it by the spring (M fig. 9.1-1) in the protection (E fig. 9.1-1) (the hood rotation reacts again on the micro-switch, reactivating the machine).

NOTE-INFORMATION:
thicknessing can only be carried out if the safety guard (F fig. 9.1-1) is in position.
This position is checked by an electro-mechanical limit switch.

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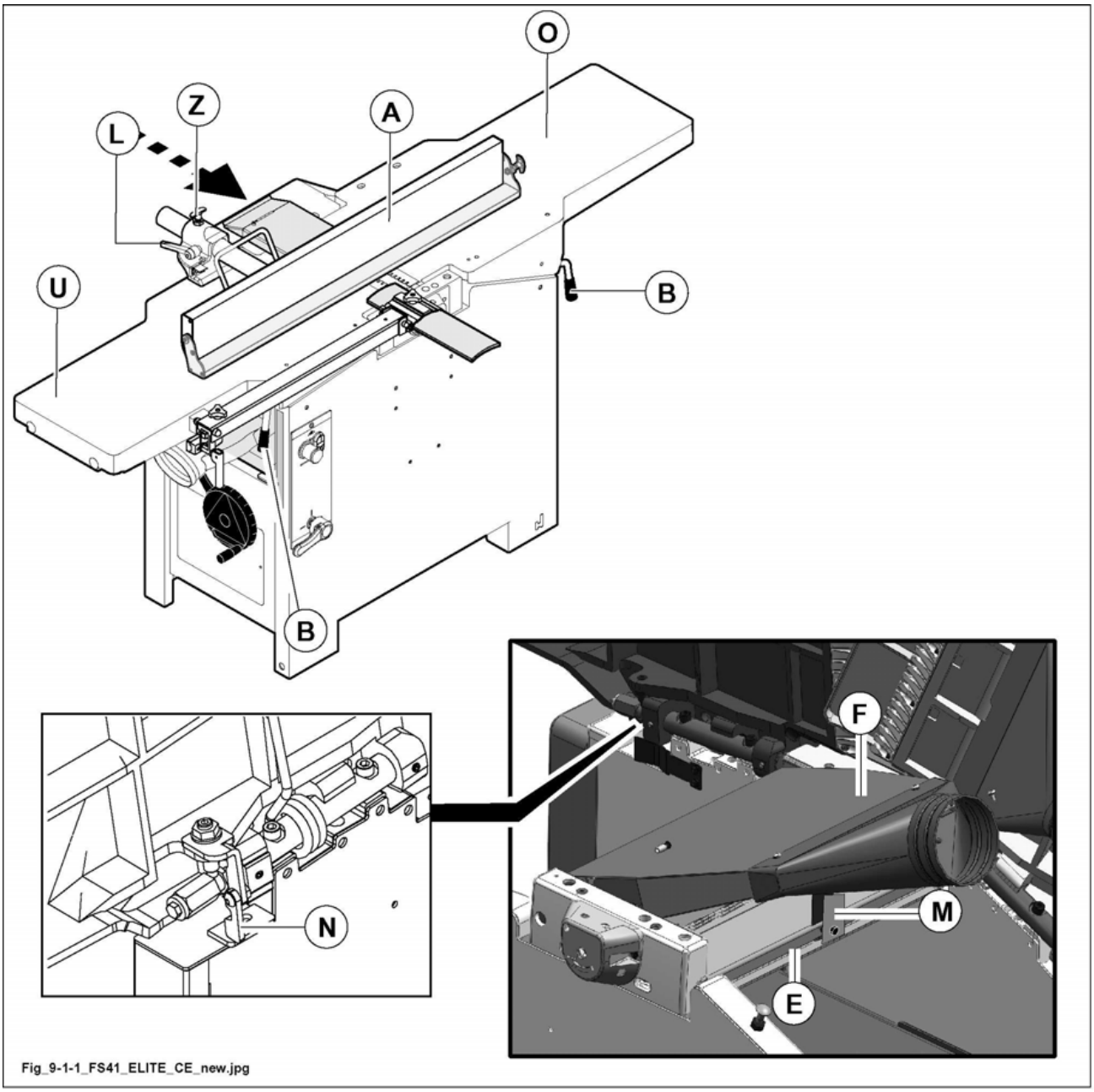


Fig. 9.1-1

9.2 ADJUSTMENT TO PASS FROM THICKNESSING TO SURFACE PLANING

(fs_9-2_0.0)

NOTE-INFORMATION:
SURFACING TABLES
This operation is carried out for straightening a wood piece and for trimming the long side of a panel. In this way you get a reference plan for the next working steps. After straightening a ledge side surface side at 90° in order to carry out the thicknessing: in this way it is possible to obtain a finished piece planned on all 4 sides.

9.2.1 MACHINE WITH MANUAL TABLE LIFTING

(fs_9-2-1_0.0)

When the thicknessing is finished, to use the surfacing unit:

1) Stop planer motor.
2) Wait few seconds for the complete cutterblock stop.

CAUTION:
before lowering the planing tables, remember to open the chip conveyor guard (F fig. 9.2-1) and lower the thicknessing table to the red notch (M fig. 9.2-1) so as not to damage any element and return the lever (L fig. 9.2-1) to the "0" position (deactivation of the feeding rollers).

3) Disengage the block (N fig. 9.2-1) and close the tables.
Lower the INLET surfacing table (D fig. 9.2-1). Lower the lever (T fig. 9.2-1) to lock table. THEN lower the OUTLET surfacing table (C fig. 9.2-1) and lower the lever (G fig. 9.2-1) and to lock table.

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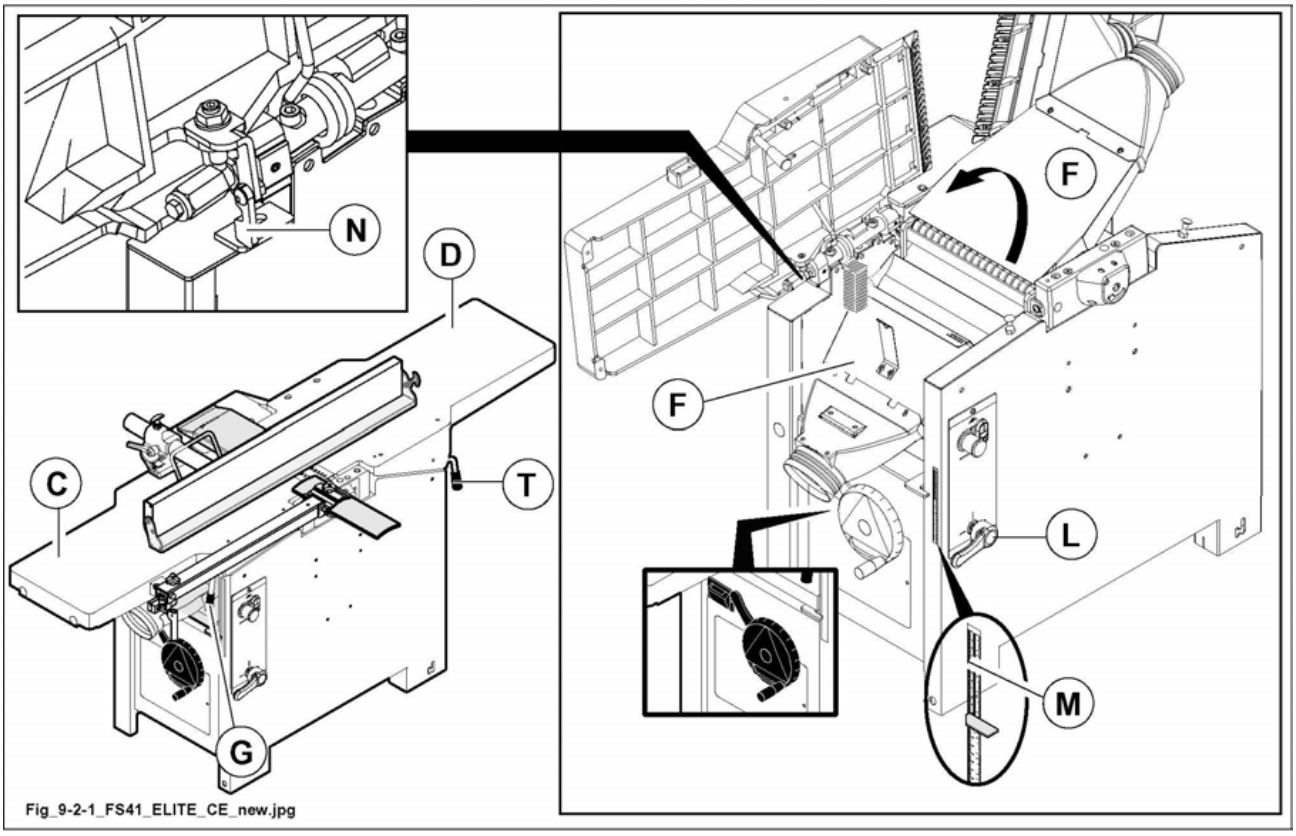


Fig. 9.2-1

9.4 AUTOMATIC FEED AND SPEED CHANGE

(fs_9-4_0.0)

To switch on the feed turn lever (L fig. 9.5). Carry out this operation with the machine running.
2 speeds are available (6 - 12 m/min); between 2 speeds there is the idle position (feed unit standstill).

NOTE-INFORMATION:
the feed is possible only if the cutterblock is rotating.

DANGER-WARNING
never machine workpiece of length and thickness lower than the values permitted (L = 140 mm; thickness 3,0 mm), as in that case the system, which control the feed and the pressure on the workpiece, can not operate and causes dangerous conditions.

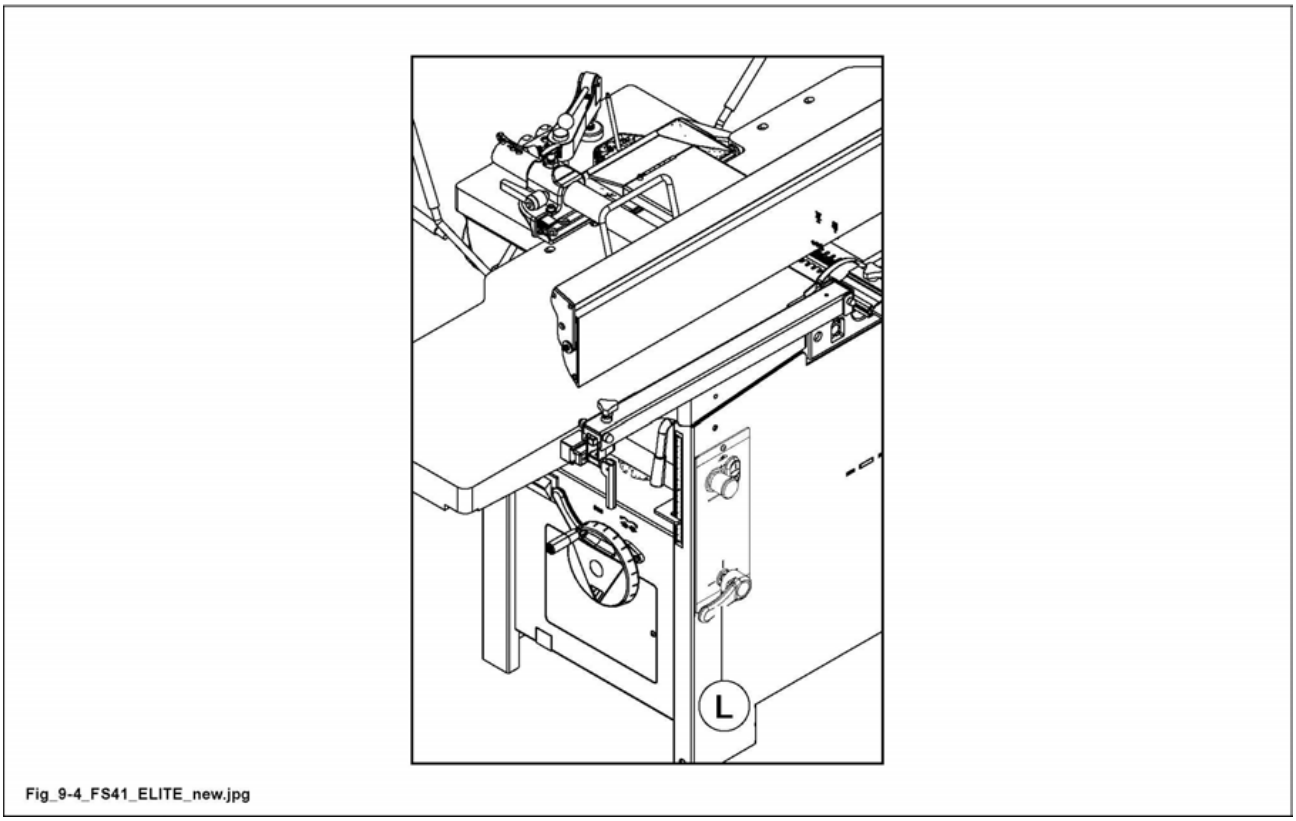


Fig. 9.4

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9.5 MANUAL ADJUSTING OF THICKNESSING TABLE

(fs_9-5-0.0)

DANGER-WARNING
Before lifting the thicknessing table make sure that there are no wood residures on the table, as in that case the system, which control the feed and the pressure on the workpiece, can not operate and causes dangerous conditions.

Always reach the working height with table motion upwards to take up slack bewteen lead screws and lead nuts.

Adjust the thicknessing tables to obtain the required stock removal. Proceed as follows:

- loosen the knob (H fig. 9.5);
- rotate handwheel (V fig. 9.5) referring to index (I fig. 9.5) or numeric indicator (L fig. 9.5) (OPT);
- tighten the knob (H fig. 9.5).

If the indicator (L fig. 9.5) gives an imprecise indication, restore adjustments as follows:

- insert a small screwdriver into hole (T fig. 9.5), lightly press and turn clockwise to increase the decimal of the measure indicated, counterclockwise to decrease the decimal.

FORBIDDEN:
it is forbidden to move the table when the machine is running.

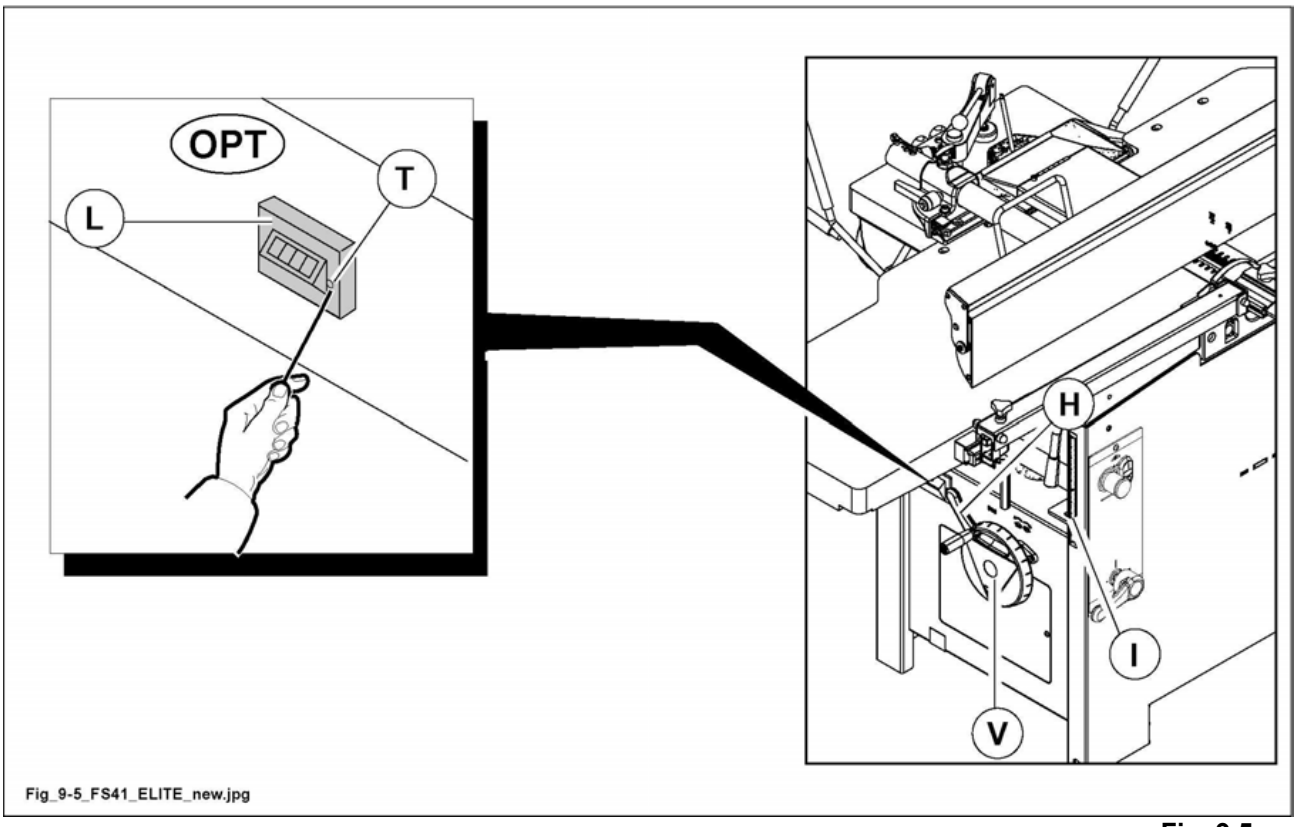


Fig. 9.5

9.8 PRESSURE ROLLERS ADJUSTING

(fs_9-8_0.0)

The spring pressure of the feed rollers is adjusted at factory during the machine test to ensure the right piece feed.
Only in peculiar cases set bushes (E fig.9.8) by means of Allen wrench.
Uniformly adjust the spring pressure of the same roller on both sides.

NOTE-INFORMATION:
pressure should be increased to machine hard wood and/or large sized workpieces.

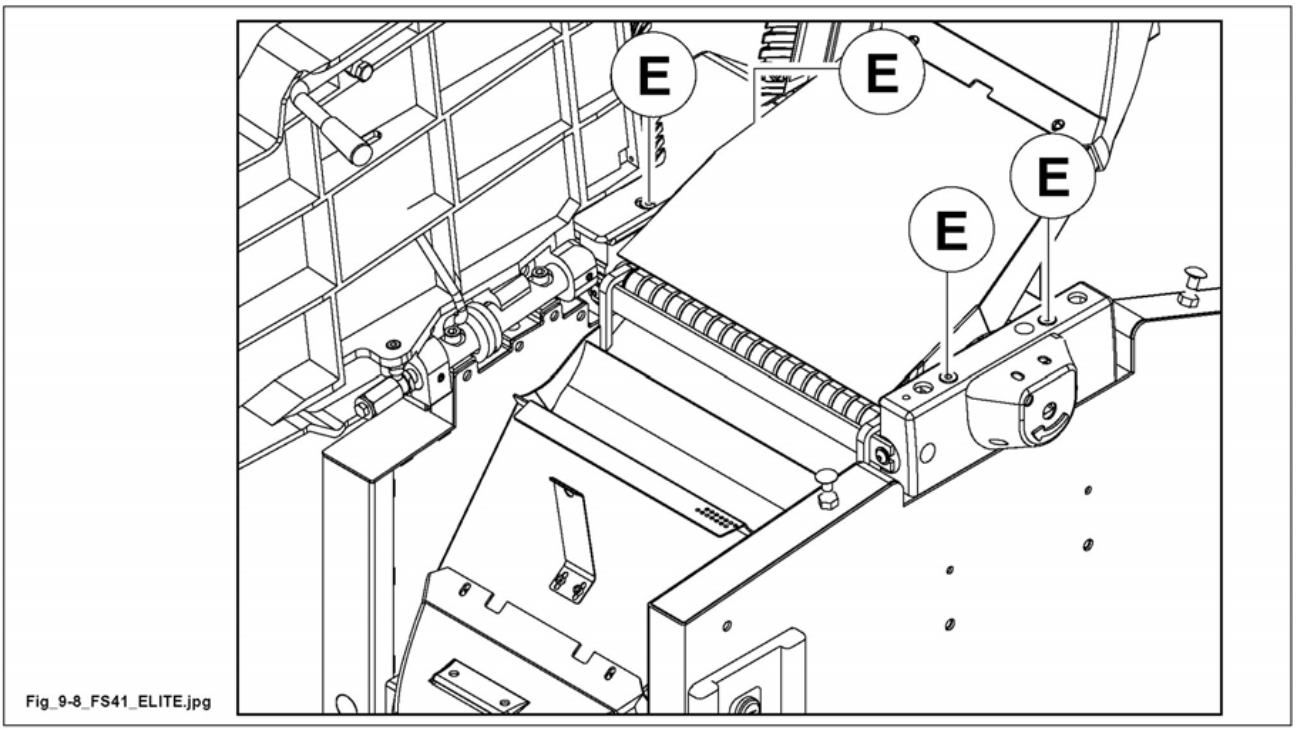


Fig. 9.8

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(fs_vuota_9-01)

9.9 SAFETY GUARDS

(fs_9-9_0.0)

- Anti-kickback fingers (T fig. 9.9) working with pieces of different thickness prevent the workpiece to be thrown back towards the operator, thus providing an effective protection.
- Before starting the working check that the fingers (T fig. 9.9) can rotate smoothly around their support shafts.
- The presence of chips and dust in position corresponding to anti-kickback fingers (T fig. 9.9) can compromise the good machine operation.
- The opening of anti-kickback fingers (T fig. 9.9) can cause the ejection of splints compromising the operator safety.
- To prevent binding or jamming of some fingers (T fig. 9.9), always keep clean them clean by removing the shavings fitted in the fingers.
- Remove resin residues by washing the unit with a brush and terpentine.
  NEVER OIL OR GREASE THE ANTI-KICK BACK FINGERS.
  Thicknessing can only be carried out if the safety guard is in position (A fig. 9.9).

FORBIDDEN:
the machine use is forbidden if these conditions are not ensured.

SAFETY WARNINGS

- Periodically press emergency button to verify the efficiency.
- Make sure that the motor brake stops the cutterblock within 10 seconds; otherwise adjust the brake (see Par.20-8 OPT).
- DO NOT process wood pieces with clefts, knots etc.
- **DO NOT feed boards with different thickness at the same time.**
- Select the feed speed according to the piece width and the depth of cut.
- Make sure that the feed rollers are free to rise in the right way.
- Never stay in front of the machine infeed side during the working and do not try to look inside the machine; there is the danger that the splinters are ejected.
- Never put your hands inside the machine to remove chips or splinters when the machine is running.
- **When a workpiece is locked in the machine, stop the cutterblock, lower the table, take off the piece.**
- DO NOT try to carry out depth of cut larger than the one specified.
- It is forbidden to move the table when the machine is running.
- **DO NOT workpieces of too large thickness or lower than 3.0 mm**
- **DO NOT workpieces of length lower than 140 mm**

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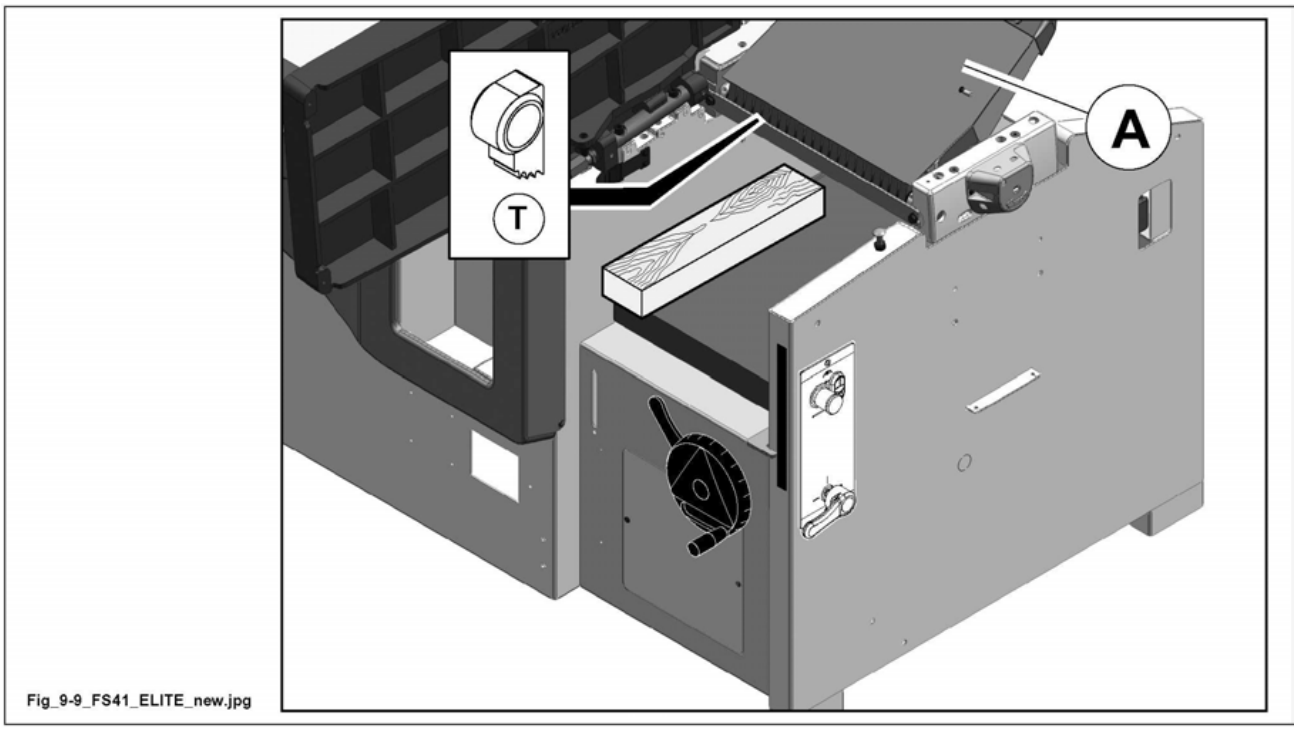


Fig. 9.9

9.10 KNIFE ADJUSTMENT

(fs_9-10_0.0)

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

For adjusting the knife projection see Chapter 7.

9.11 KNIFE REPLACING

(fs_9-11_0.0)

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

For replacing the knife projection see Chapter 7.

9.12 REPLACING THE THROW-AWAY KNIVES

(fs_9-12_0.0)

OPT

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

DANGER-WARNING
do not start planer spindle motor when knives are not fitted.

For replacing the knife projection see Chapter 7.

9.12A HELICOIDAL PLANER - TIPS REPLACEMENT

(fs_9-12a_0.0)

OPT

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

See Chapter 7.

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10.1 CUTTERBLOCK GUARD

(fs_10-1_0.0)

It protects the cutterblock during the surfacing.

The machine is equipped with two protections on the planer:
A - protection behind the planer guide
B - bridge-type protection

NOTE-INFORMATION:
the machine can be supplied, (OPT) on request, setup (S fig. 10.1) to install the SUVAMATIC guard (P fig. 10.1).
For all the information on the guard, relative to:
- Use
- Names
- Installation diagram
- Installation instructions
- Starting
- Operational procedures
- Knives replacement
- Maintenance
- Spare parts
- Spare parts assembly
refer to Par. 4.3.1.1 of this manual and the specific manual (M fig. 10.1) of the SUVAMATIC guard, that must be supplied with the guard.

10.1.1 DESCRIPTION

(fs_10-1-1_0.0)

NOTE-INFORMATION:
this protection is easily adjustable on the whole length of the cutterblock.

A - Protection behind the planer guide

This is an articulated protection which always covers the planer shaft in both the guide positions, 90º and 45º respectively.

B - Bridge-type protection

1) Bridge (B fig. 10.1).
2) Bridge locking knob (C fig. 10.1).
3) Height adjusting knob (D fig. 10.1) (max. height which may be reached: 75 mm).
4) Arm (E fig. 10.1).
5) Protection locking knob (F fig. 10.1).

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10.1.2 GUARD ADJUSTING

(fs_10-1-2_0.0)

B - Bridge-type protection

Use the adjustment knob (D fig. 10.1) to adjust the height of the anodised aluminium cover (B fig. 10.1) in relation to the worktable and the thickness of the material being machined.
Adjust the cover of the cutting part with the knob (C fig. 10.1).

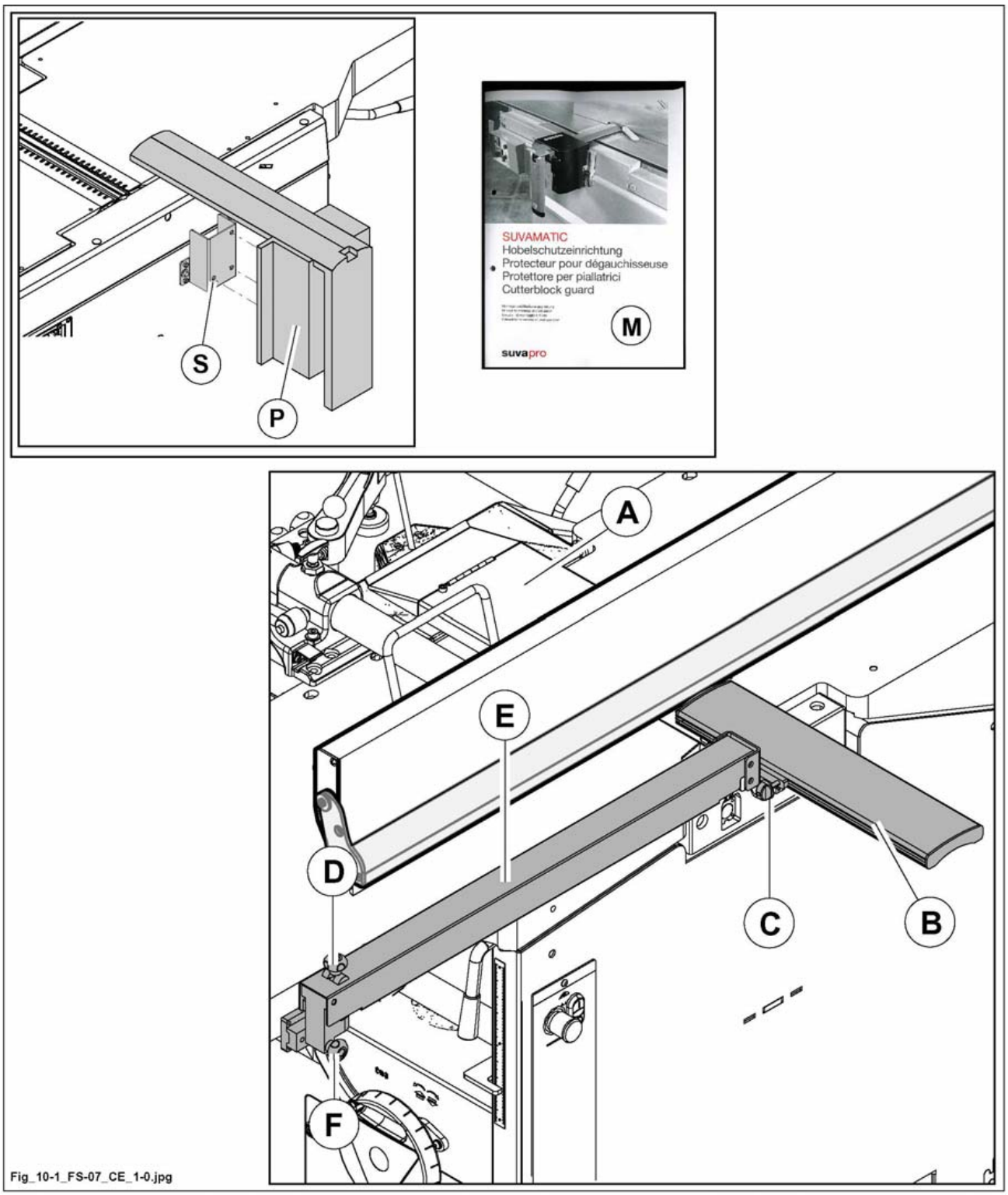


Fig. 10.1

10.3 PROCEDURES FOR SAFE WORKING

(fs_10-3_0.0)

DANGER-WARNING
the guard adjusting shall always be carried out with the motor off.

DANGER-WARNING:
do not machine workpieces too small or too big for the machine.
See relative paragraph 3.1 "Dimensions of workpiece to be milled".

DANGER-WARNING:
adjust the guard so that it covers the planer spindle completely.

DANGER-WARNING:
never put your hands near the cutterblock. Never forget to move the protection to its right position, to protect the tool-holder shaft between two working phases.

10.3.1 EXAMPLES

(fs_10-3-1_0.0)

10.3.1.1 SURFACING WORKPIECES OF THICKNESS LESS 75 MM

(fs_10-3-1-1_0.0)

- Loosen knob (C fig.10.3-1-1) and rest bridge (A fig.10.3-1-1) against fence (G fig. 10.3-1-1); lift bridge (A fig.10.3-1-1) by means of knob (B fig.10.3-1-1) at the height equal to the workpiece thickness.
- Rest the workpiece against the fence and move it forwards with the right hand in order to fit it under the bridge (1 fig.10.3-1-1).
- Push the workpiece forwards(from the inlet table side)(2 fig.10.3-1-1) by keeping the hands flat on the workpiece, let one hand and then the other hand climb over the guard bridge.
- As soon as possible press both hands on the workpiece on the outlet table side to continue the workpiece feed (3 fig.10.3-1-1).

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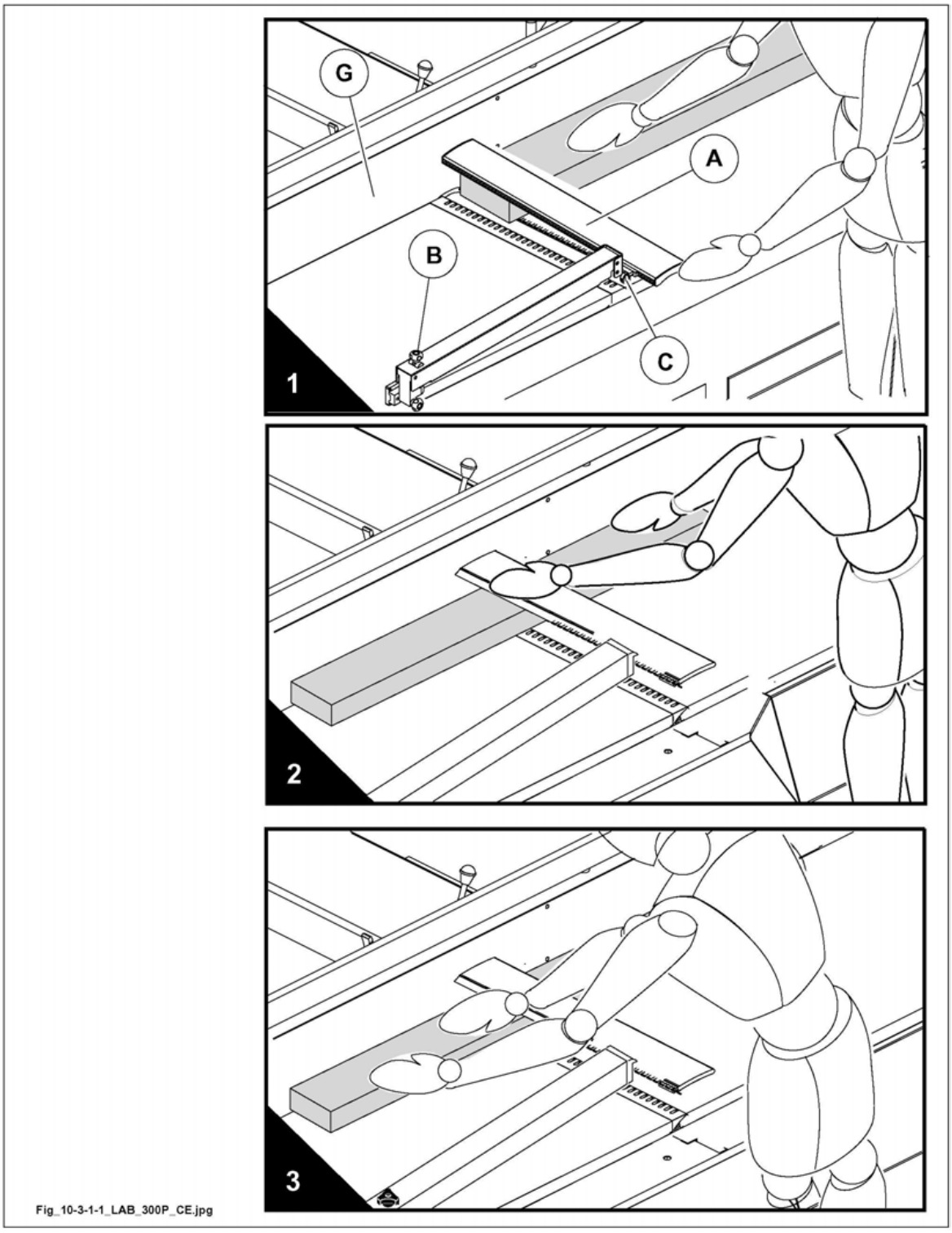


Fig. 10.3-1-1

10.3.1.2 STRAIGHTENING

(fs_10-3-1-2_0.0)

Adjusting the guard for straightening:

the bridge guard must be lowered on the tables and adjusted horizontally relative to the workpiece.

- Rest the bridge onto the table by means of the knob (B fig. 10.3-1-2) and expose the shaft as it is enough to let the piece to be machined pass by pulling the bridge away (A fig. 10.3-1-2), after releasing the knob (C fig. 10.3-1-2) (lock the bridge again, then).

- Press the piece against the fence towards the outlet table by keeping the left hand for example with the clenched fist and the thumb on the piece.
  With the right hand move the piece forwards in order to get a regular motion (for example cleched fist and thumb on the piece) (2 fig. 10.3-1-2).

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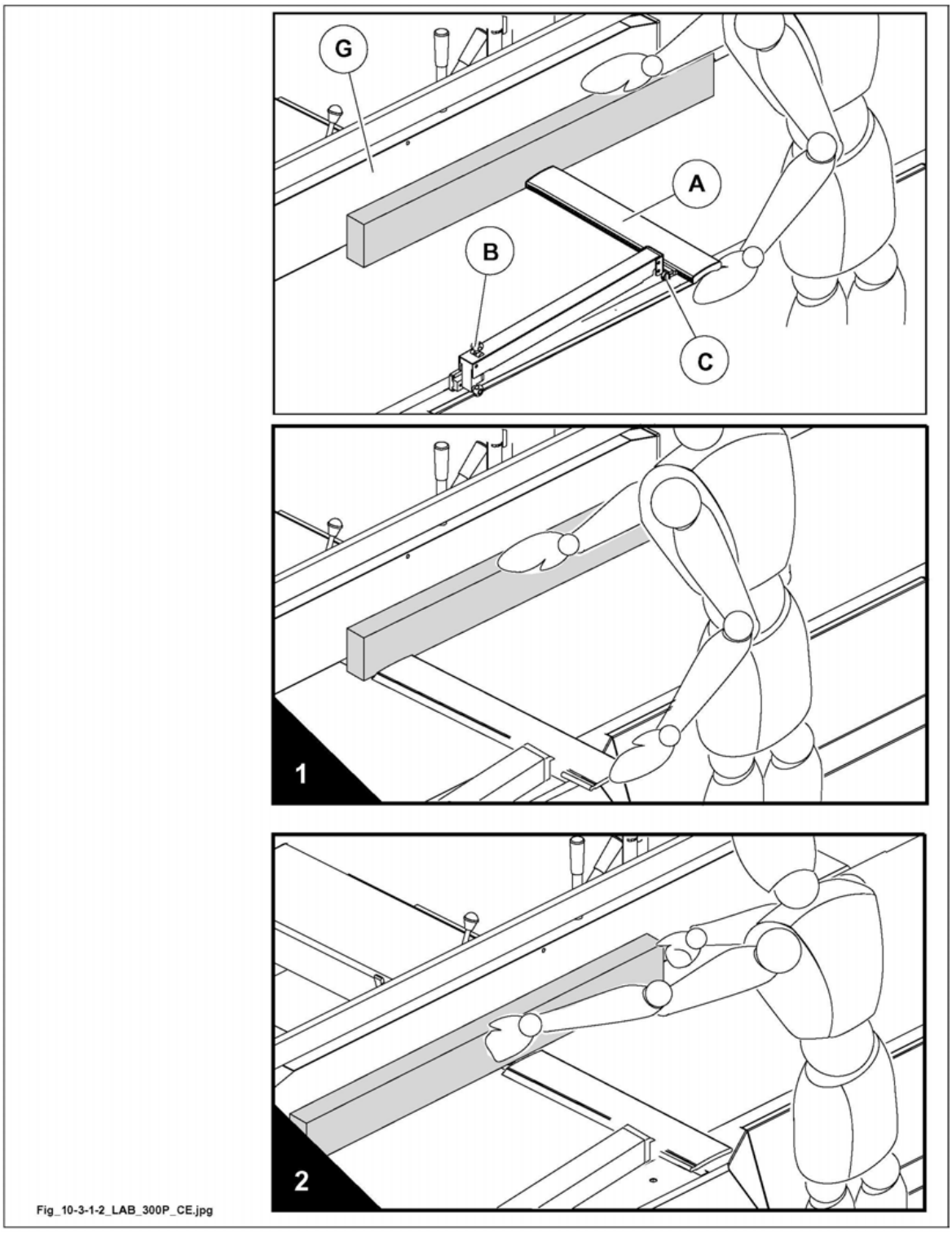


Fig. 10.3-1-2

10.3.1.3 SURFACING AND STRAIGHTENING PIECES THICKER THAN 75 MM

(fs_10-3-1-3_0.0)

The bridge of the guard shall be lower on the tables and horizontally adjusted to the piece.

1 - Rest the bridge onto the table by means of the knob (B fig. 10.3-1-3) and expose the shaft as it is enough to let the piece to be machined pass by pulling the bridge away (A fig. 10.3-1-3), after releasing the knob (C fig. 10.3-1-3) (lock the bridge again, then).
2 - Press the guard so that it rests on the outfeed table (1 fig. 10.3-1-3).

Move the piece along the fence with regular motion by keeping the hands flat on the piece (2 fig. 10.3-1-3).

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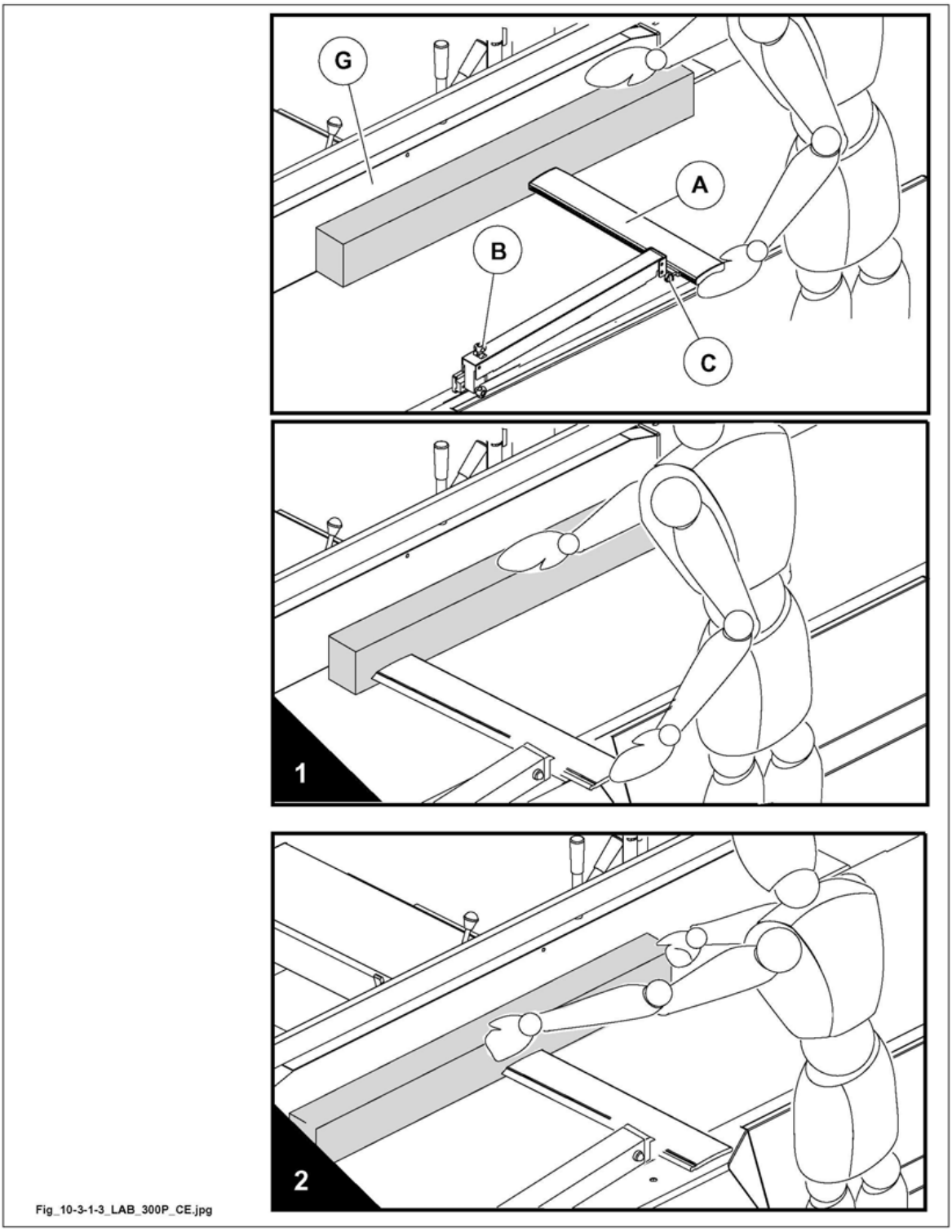


Fig. 10.3-1-3

10.3.1.4 SURFACING PIECES OF SQUARE SECTION

(fs_10-3-1-4_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

- the bridge guard must rest on the workpiece (fig. 10.3-1-4) and against the fence.
- Move the piece forwards by keeping the fingers bended.

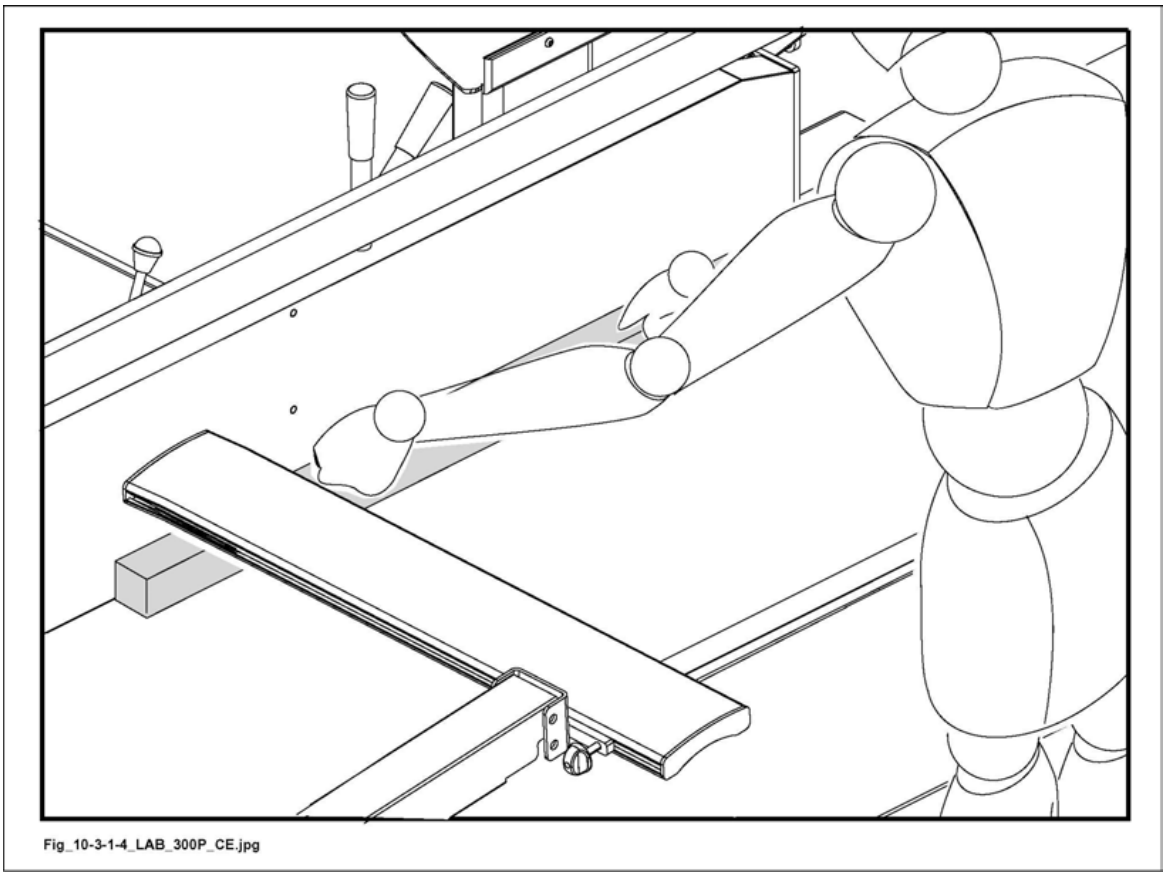


Fig. 10.3-1-4

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10.3.1.5 SURFACING SHORT PIECES

(fs_10-3-1-5_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

- Press the guard bridge on the piece by keeping the hand flat and move the piece forwards with the right hand by using a pusher.
- Rest the left hand on the guard bridge and as soon as the piece rests on the outlet table.
- The pusher shall be thinner than the workpiece.

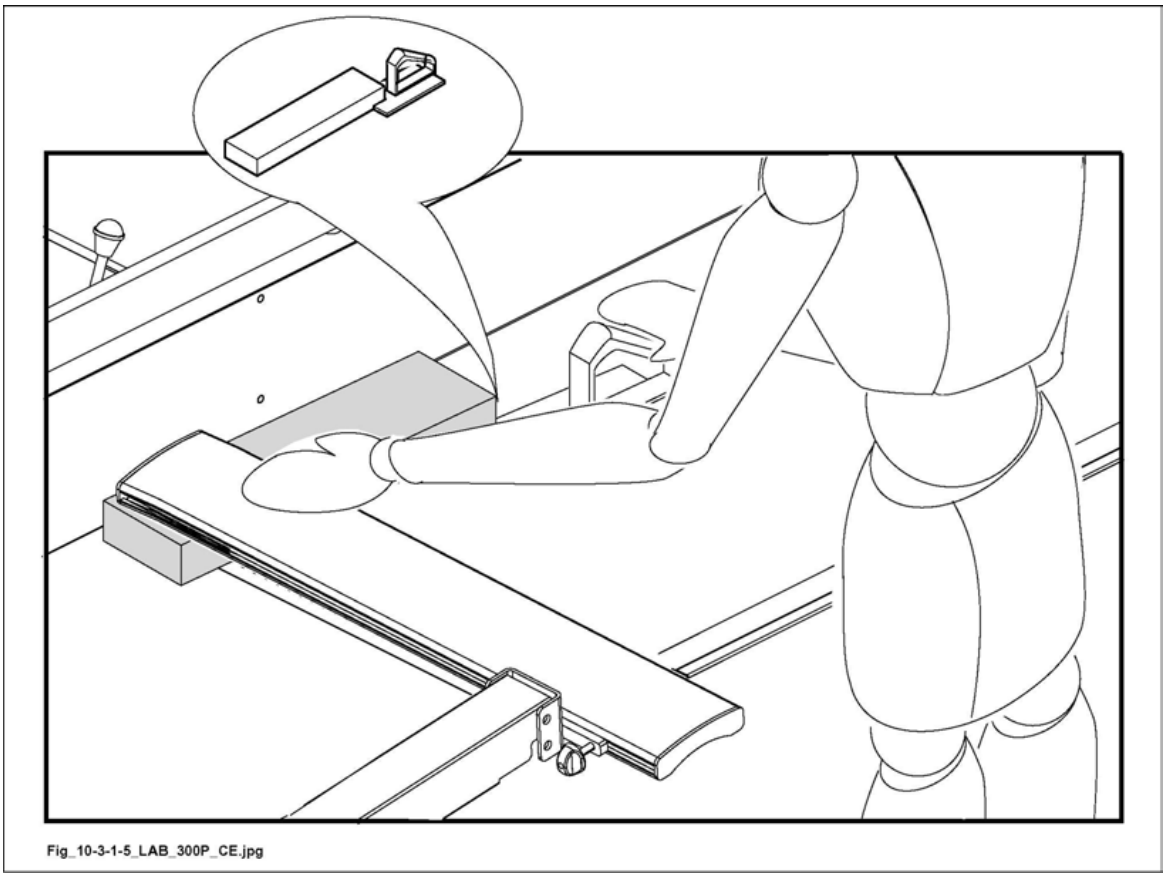


Fig. 10.3-1-5

10.3.1.6 STRAIGHTENING SHORT PIECES

(fs_10-3-1-6_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

- Move the piece along the fence and towards the outlet table by keeping the left hand with clenched fist, then with the right hand push the piece by using a pusher.

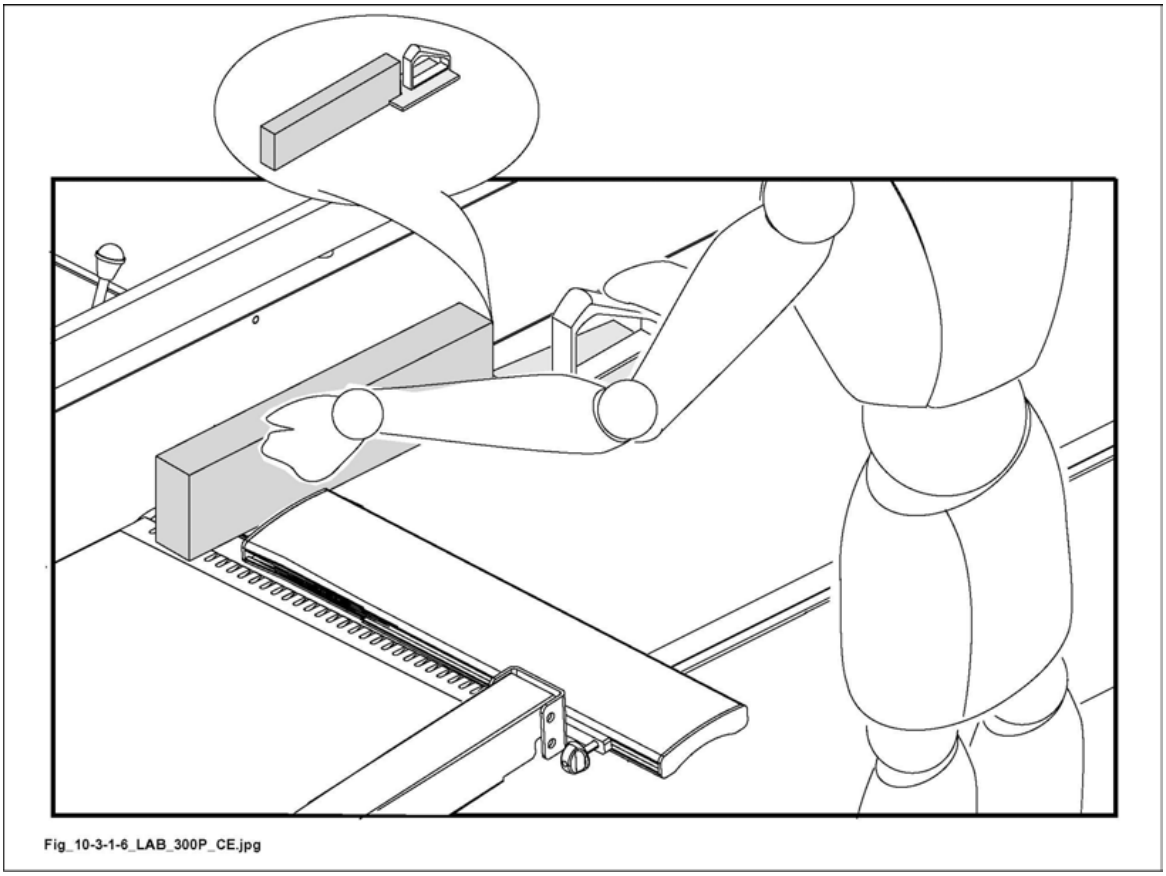


Fig. 10.3-1-6

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10.3.1.7 CHAMFERING ALONG THE FENCE

(fs_10-3-1-7_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

- Rest the piece with the right hand against the slanting fence. Set the piece and the guard: see (1 fig. 10.3-1-7).

- Let the piece feed along the fence towards the outlet table by keeping the hand with clenched fist, push the piece forwards with the clenched right fist (2 fig. 10.3-1-7).

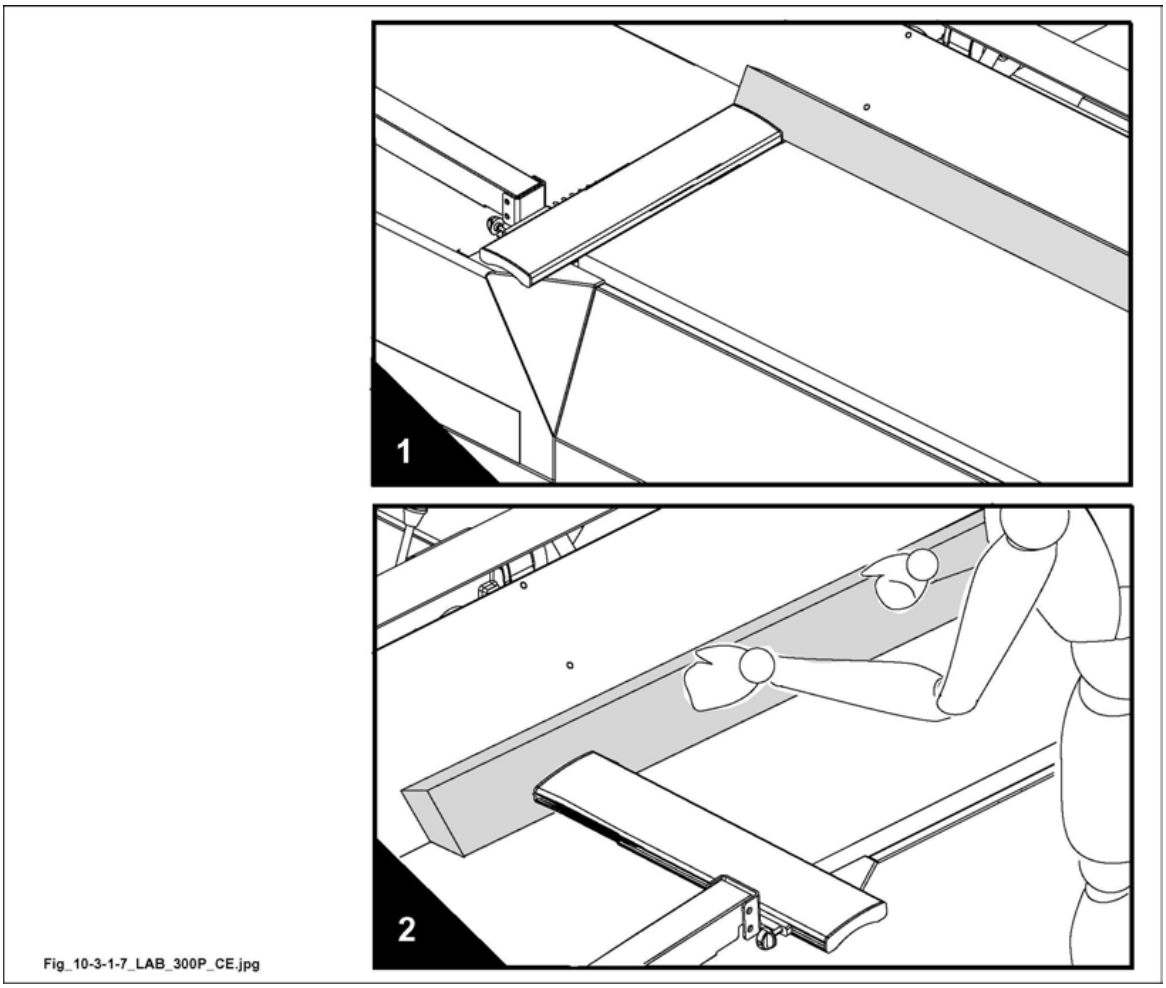


Fig. 10.3-1-7

10.3.1.8 SURFACING WORKPIECES WITH SMALL SECTION

(fs_10-3-1-8_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

to carry out this working we recommend to install a turnover auxiliary rule(R fig. 10.3-1-8)OPT(see par.7.10).

Push the workpiece forwards with spread hands (fig.10.3-1-8), like in the case of workpieces with thickness lower than 75 mm (see par.10.3.1.1).

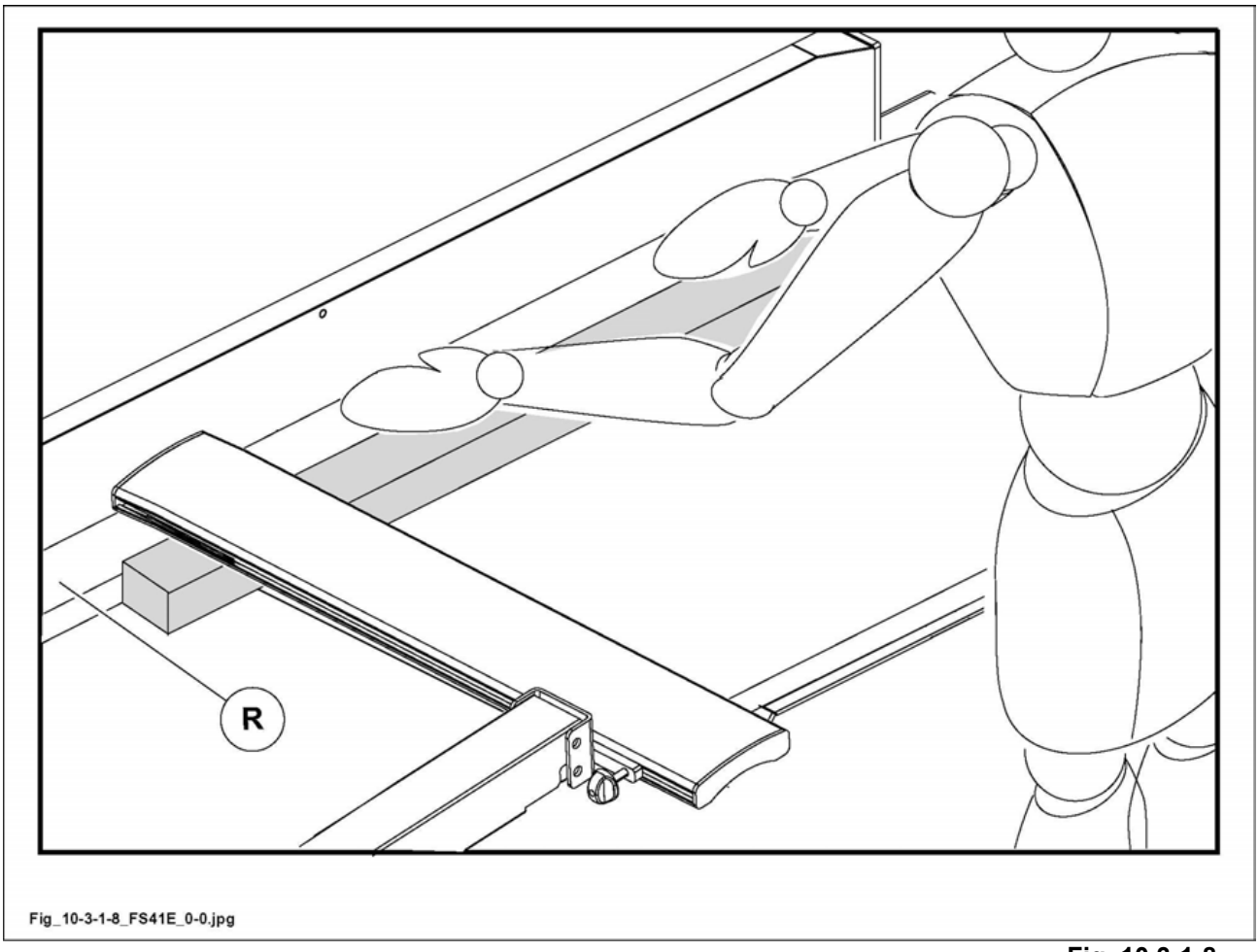


Fig. 10.3-1-8

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10.3.1.9 STRAIGHTENING WORKPIECES OF SMALL SECTION

(fs_10-3-1-9_0.0)

NOTE-INFORMATION:
adjust the bridge guard as described in the previous sections.

Press the workpiece with the hands (clenched fist) against the rule and the table (fig.10.3-1-9)and push it forwards. The guard is adjusted in horizontal direction against the fence and rests on the workpiece.

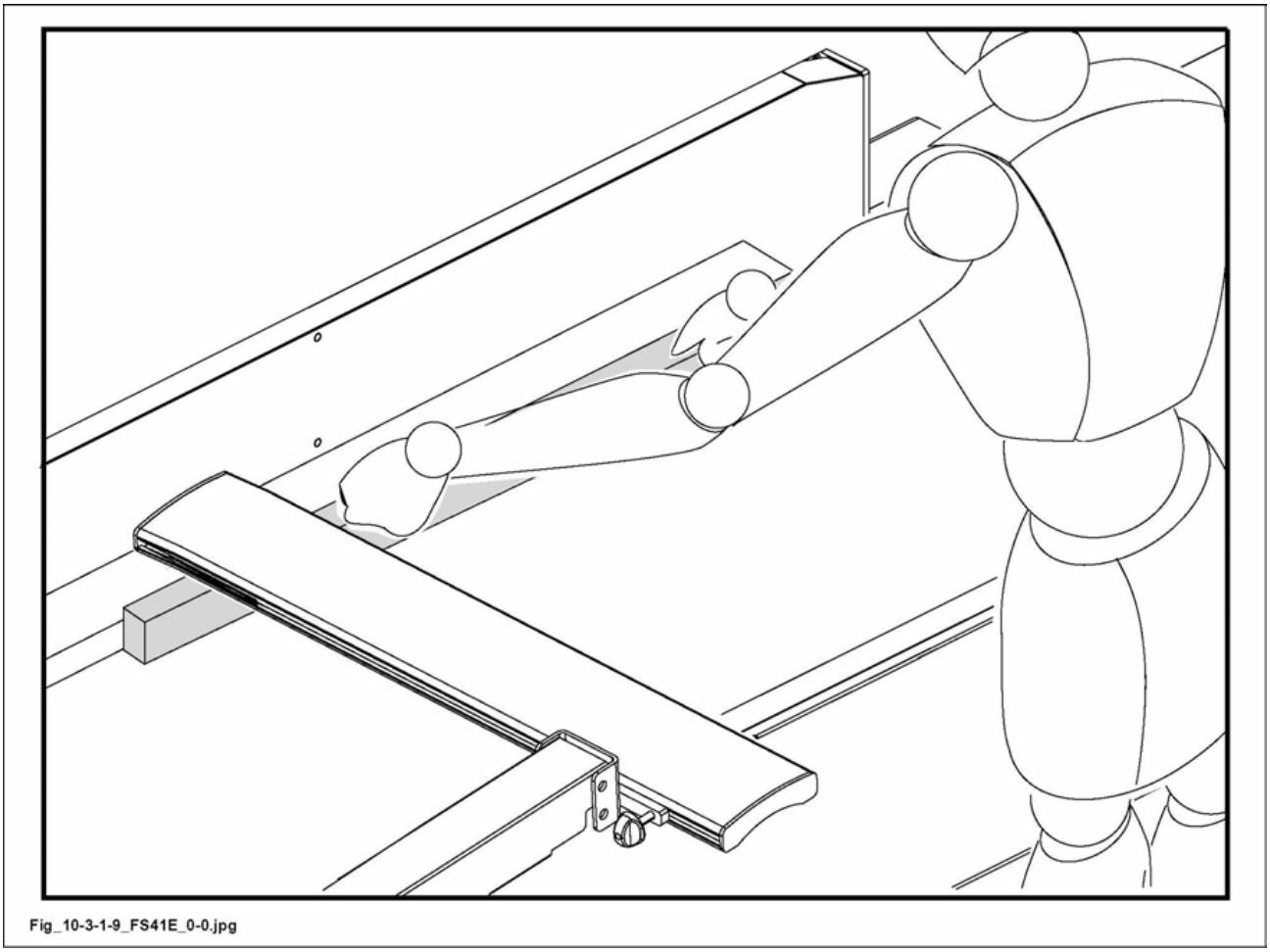


Fig. 10.3-1-9

10.5 SAFETY NOTES

(fs_10-5_0.0)

SAFETY OVER ALL

DANGER-WARNING
keep the machine edges clean and free. Take a safe position to carry out the working.

Remove the chips from the tables by using a wood piece better than your hands.

Set the guard bridge in contact with the tables.

When working the last part, the hand should always be positioned after the plane arbor, on the exit table.

The feed speed of the wood must always be proportionate to the thickness to be removed.

DANGER-WARNING
in case of seepage of chips inside the machine or in the suction hood before intervening switch off the machine and lock the main switch.

DANGER-WARNING
to improve the sliding of the workpieces treat the tables with paraffin or other proper product.

The guard serves as a safety shield, the workpiece is pressed at the outlet table level and not on the guard bridge.

Rest the concave part of the workpiece on the tables and do not machine workpieces with arched shape arcs and other too evident defects (clefts, knots etc.) or foreign bodies (nails, clips etc.).

Make sure that the workpieces are firm and use a support (not supplied by SCM***) positioned behind the the outlet table for long workpieces.***

During the working of workpieces with big thickness (panels) against the fence, lock the guard bridge as near the panel as possible to hinder the panel turnover.

Use the knob. The knob (see Section15) may be applied to pushers of different size, screwing it on with the screws provided.

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INDEX

15.1 Pusher 2

15.1 PUSHER

(ev_15-1_0.0)

DANGER-WARNING:
when for the execution of a peculiar working, the operator is obliged to put his hands near the tools, for safety reasons a proper pusher shall be used to move the workpiece forwards, to push it against the fence or to remove it after the cutting.

Handle (A fig. 15.1) is supplied for this purpose and can be applied to pushers (D fig. 15.1) of different size by means of screws (B and C fig. 15.1).

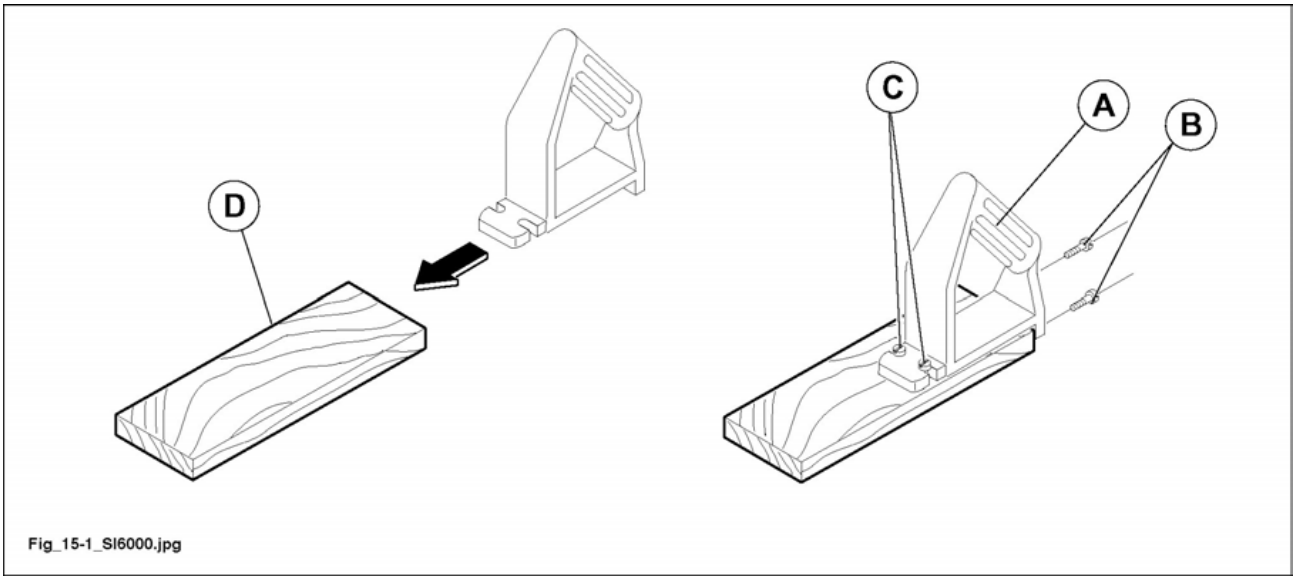
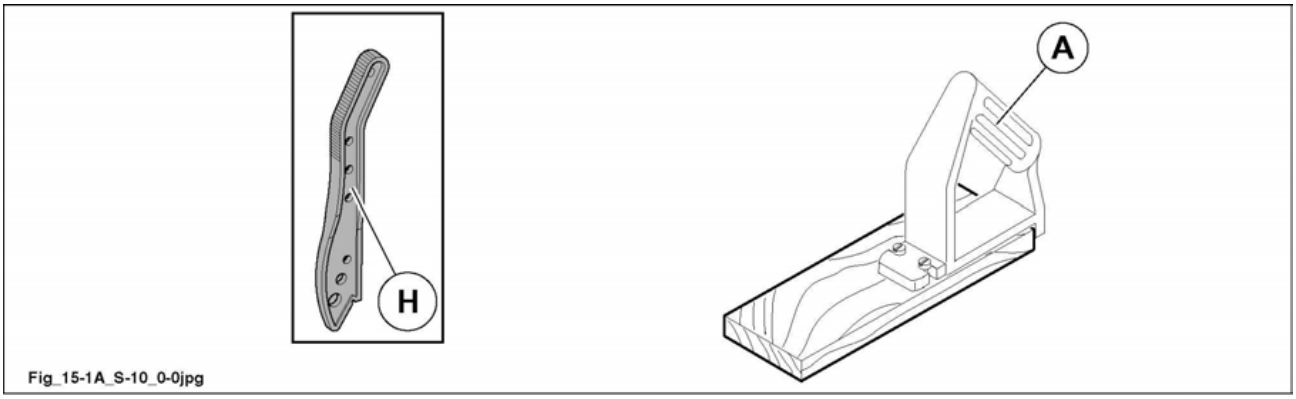


Fig. 15.1

By using a power dust aspirator clean:
- the pusher (H).
- The handle (A).



NOTE-INFORMATION:
in case of loss or breakage of the devices contact the manufacturer's SERVICE (Par. 1.3).

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20.1 MACHINE CLEANING

(fs_20-1-0.0)

DANGER-WARNING
all cleaning operations are to be carried out by the machine operator or by skilled technician.

DANGER-WARNING
before carrying out maintenance operations, adjustments or to dismount any machine member turn main switch to 0, lock it then indicate this with a sign.

DANGER-WARNING
to handle the knives and the cutterblock you shall wear safety gloves.

FORBIDDEN:
DO NOT USE COMPRESSED AIR; by blowing with a strong air jet chips,dust and dirt of any type may enter into the moving members, so the machine is no more efficient.

The machine cleaning is not only an important safety factor but it ensures the long life and the best performance of the machine.

NOTE-INFORMATION:
the frequency of cleaning interventions is determined by the room in which the machine is installed and by the machined material.

Rules for a correct machine cleaning

Every evening by using a proper aspirator clean:
- the table, cutterblock, anti kickback fingers and the cavities where you see dust and chips seepage;
- periodically clean the rollers by using not dangerous products; never use acid products;
- suction hoods (C fig.20.1) by checking that there are no occlusions.

Never use acid products.

After sucking chips or dust, with a cloth drunken with a not dangerous solvent clean:
- all moving parts, particularly the ones exposed to the resin and to the dust;
- knives (B fig. 20.1) of the cutterblock;
- sliding rod (D fig. 20.1) of planer guide;
- dovetail elements (E fig. 20.1) for mortiser sliding (OPT);
- sliding rods (P fig. 20.1) of mortising table (OPT);
- Screw (V fig. 20.1) for (OPT) mortiser height adjusting.

FORBIDDEN:
NEVER OIL OR GREASE THE ANTI-KICK BACK FINGERS.

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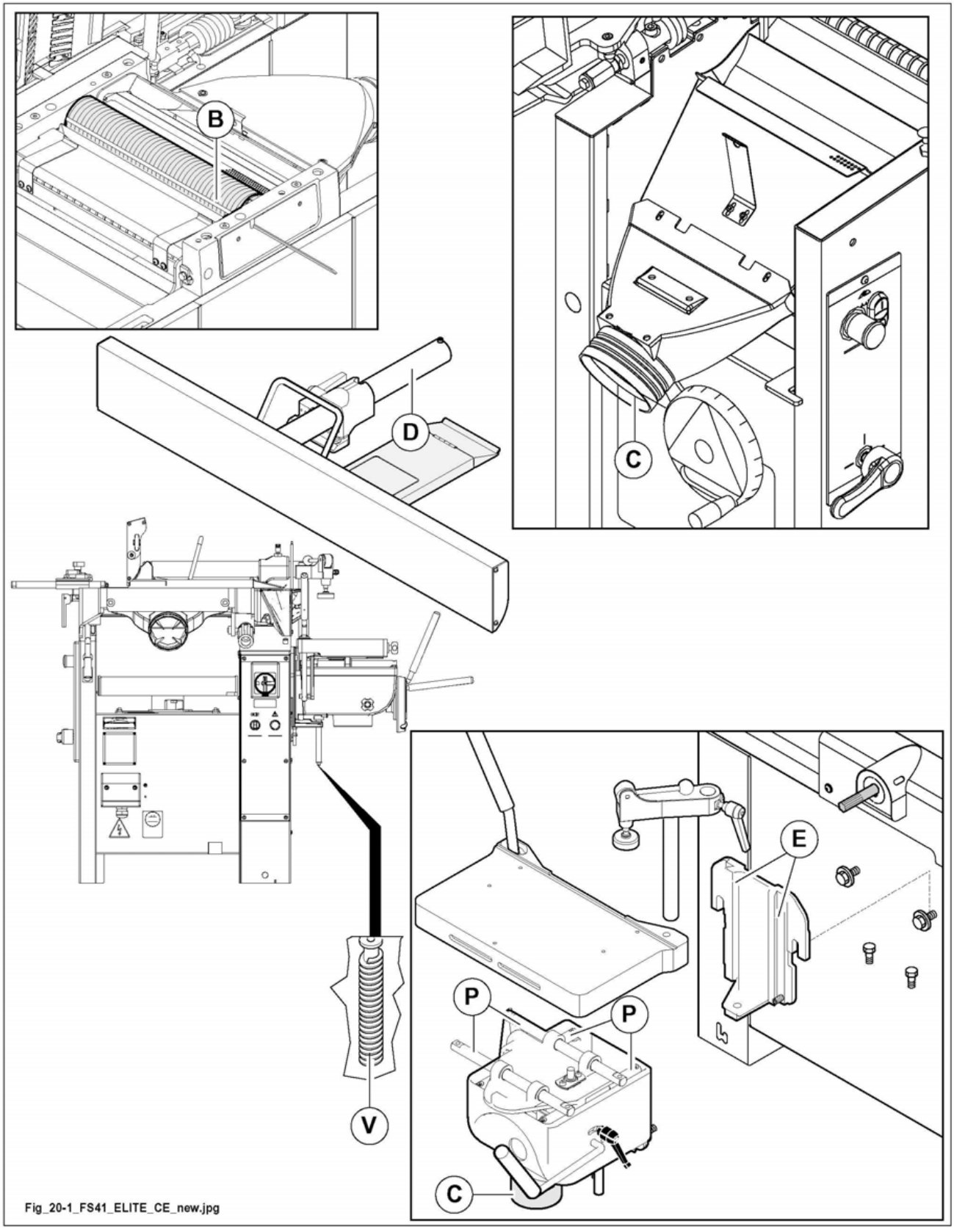


Fig. 20.1

(fs_vuota_20-01)

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20.2 SCHEDULED MAINTENANCE

(fs_20-2_0.0)

Scheduled maintenance is of the utmost importance to obtain the best performance as well as a safe operation of the machine.

DESCRIPTION	INSPECTION	INTERVALS	OPERATIONS
General machine cleaning	Visual inspection	Daily	- By using an aspirator remove dust or chips (Par. 20.1).
Tools (B fig. 20.2) of the planer unit	Visual inspection	Daily	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous.
Sliding rod (D fig. 20.2) of planer guide	Visual inspection	Weekly	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Lubricate with oil (Par. 20.3).
Cleaning of suction hoods (C fig. 20.2)	Visual inspection	Weekly	- Disconnect the flexible tubes from suction hoods, check that there are no occlusions and clean by sucking.
Guides (E fig. 20.2) for sliding mortiser (OPT)	Visual inspection	Weekly	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Lubricate with oil (Par. 20.3).
Sliding rods (P fig. 20.2) of mortiser table (OPT)	Visual inspection	Weekly	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Lubricate with oil (Par. 20.3).
Screw (V fig. 20.2) for motiser height adjusting (OPT)	Visual inspection	Weekly	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Lubricate with grease (Par. 20.3).

DESCRIPTION	INSPECTION	INTERVALS	OPERATIONS
Thicknessing table (H fig. 20.2)	Visual inspection	Daily	- Clean with a vacuum cleaner.
Cleaning the moving parts, particularly the ones exposed to the resin and to the dust	Visual inspection	Weekly	- Clean with proper detergents.
Thicknessing table - Screw (S fig. 20.2) for height adjusting	Visual inspection	Weekly	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Lubricate with grease (Par. 20.3).
Thicknessing table - Sliding cylinder (Z fig. 20.2)	Visual inspection	Daily	- By using an aspirator remove dust or chips (Par. 20.1).
Feed rollers	Visual inspection	Daily	- Clean with proper detergents.
Transmission chain of the motion to the feed rollers	Visual inspection	Weekly	- Clean and lubricate (Par. 20.3).
⚠ Anti kickback fingers (L fig. 20.2)	Visual inspection	Daily	- By using an aspirator remove dust or chips (Par. 20.1). Clean with proper detergents. - **Do not oil, do not grease.**
	Visual inspection	After 1 working hour	- **Check that the anti-kick back fingers are efficient.**
Operator units' belts (O fig. 20.2)	Check tensioning and wear	Daily	- Tension correctly (Par. 20.28) or replace (Par. 20.18) if necessary.
Safety and emergency devices (Chapter 2)	Visual check and check functioning	Every 2 weeks	- Perform stop tests (Par. 20.7).

Helicoidal planer with tips OPT

DESCRIPTION	INSPECTION	INTERVALS	OPERATIONS
Tools (U fig. 20.2) of the planer unit	Visual inspection	Daily	- By using an aspirator remove dust or chips (Par. 20.1). - Clean with a cloth or brush soaked in a suitable product which is not dangerous. - Rotate or replace tip-tools, if need be (see Par. 7.5).

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DESCRIPTION	INSPECTION	FREQUENCY	ACTION
Brake release selector operation check	Operation check	Daily	- See section 5.4

DESCRIPTION	INSPECTION / FREQUENCY	ACTION
Safety circuit	20 years	Contact the manufacturer

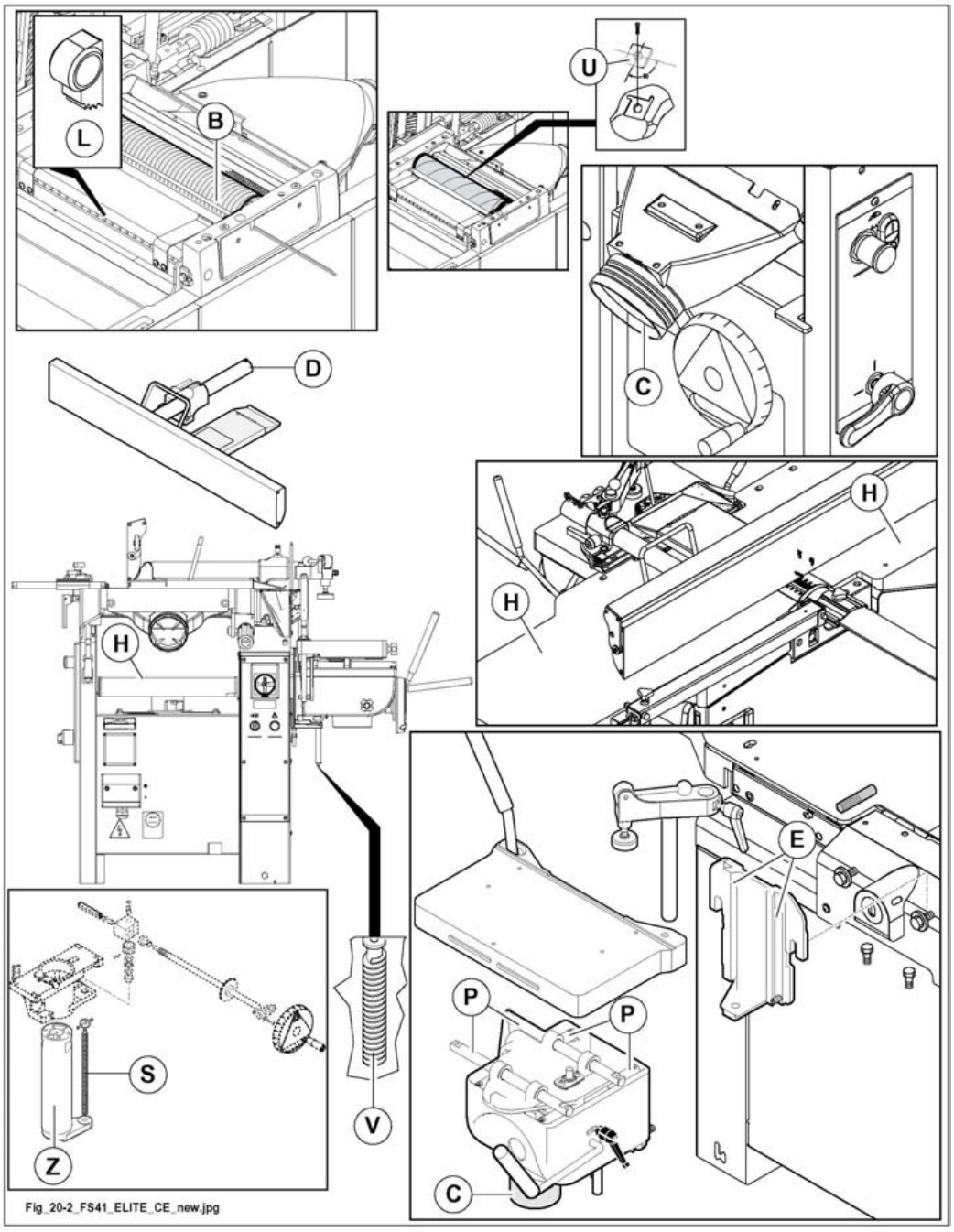


Fig. 20.2

20.3 LUBRICATION

(fs_20-3_0.0)

An accurate lubrication ensures the long life as well as the best performance of the machine.

Weekly, lubricate with grease type:

Manufacturer	Lubricant name
AGIP	GR MU EP1
ARAL	ARALUB HL1
BP	GREASE LTX1
SHELL	SUPER GREASE EP1
MOBIL	MOBILPLEX 46
KLÜBER	CENTOPLEX 1
ESSO	BEACON EP0

1) worm (V fig. 20.3) for lifting the mortiser (OPT).
2) Thicknessing table - Screw (S fig. 20.3) for height adjusting.
3) Transmission chain (A fig. 20.3) of the motion to the feed rollers.

Lubricate with oil here indicated:

Manufacturer	Lubricant name
AGIP	EXIDIA 220
ARAL	DEGANIT B 220
BP	ENERGOL GHL 220
SHELL	TONNA OIL T220
MOBIL	VACTRA OIL N° 4
KLÜBER	LAMORA SUPER POLADD 220
ESSO	FEBIS K 220

1) sliding rod (D fig. 20.3) on planer guide.
2) Sliding rods (P fig. 20.3) of mortiser table (OPT).
3) Guides (E fig. 20.3) for sliding mortiser (OPT).

NOTE-INFORMATION:
- as all bearings are sealed and lubrificated-for life, they do not require any maintenance;
- when you have to replace these bearings directly apply to SCM ***Ufficio Ricambi;***
- bearings of other makes with corresponding names are NOT suitable.

NOTE-INFORMATION:
protect all belts and pulleys to avoid contamination with oil.

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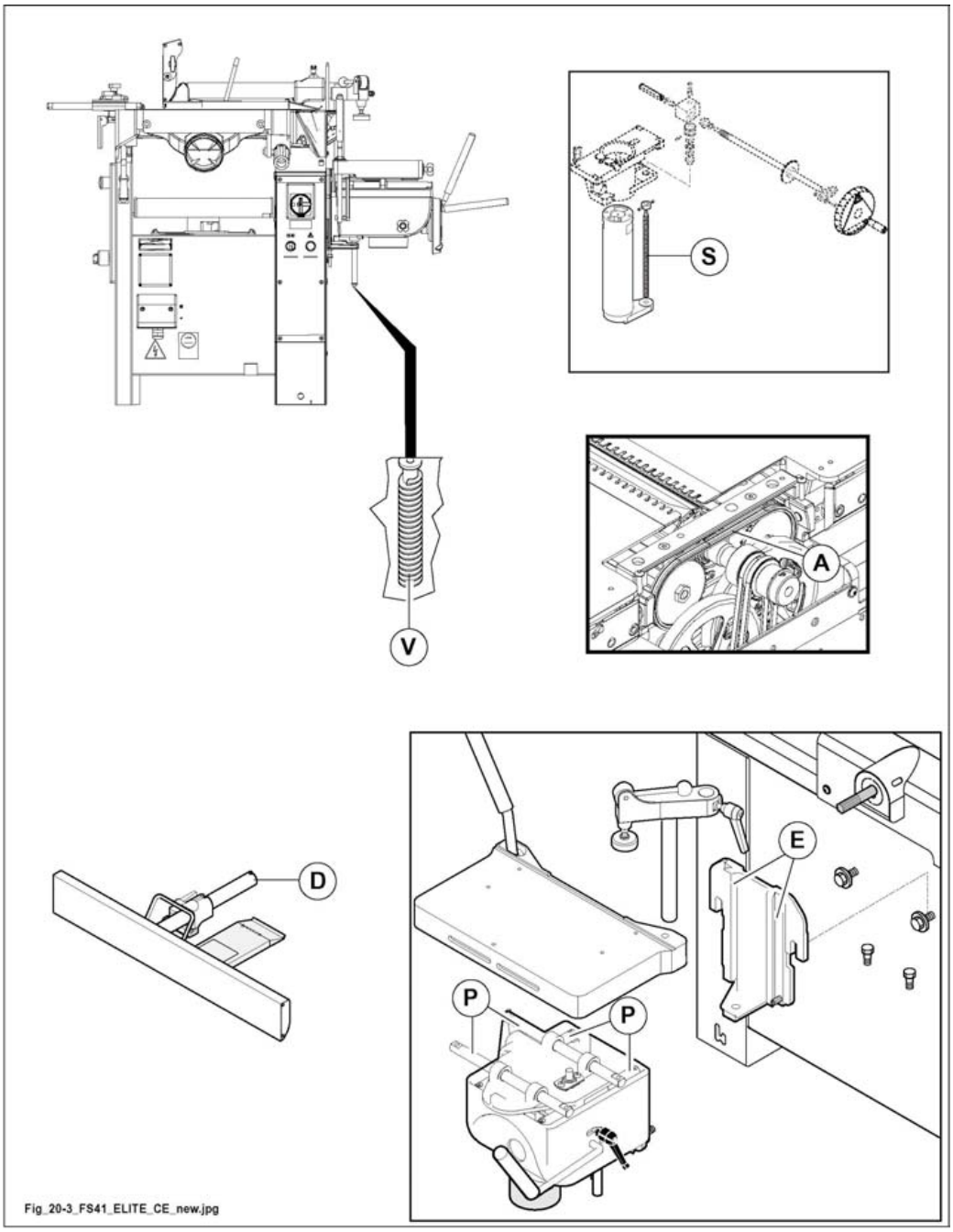


Fig. 20.3

20.7 CHECK OF SAFETY DEVICES

(fs_20-7_0.0)

The machine is equipped with safety devices described in Chapter 2 which ensure tha safe machine operation.

Every 2 weeks check the controls for emergency stops with a test.
With the machine under normal operating conditions press the emergency buttons arranged on the machine one at a time; the motor shall stop.

Check that the microswitch fitted to the surfacing tables is efficient.
With tables open and tipper open the thicknesser table must not move.

NOTE-INFORMATION:
- the belt slackening may cause an increase of the braking time, therefore make sure that the belts are stretched and in good conditions (see par. 20.23) (max. time to stop the motor: 10 sec).

- Every 2 months or approx. every 500 brakings check the motor braking time (max. time to stop the motor: 10 sec); in case of brake adjusting, see par. 20-8 (OPT)***.***

At the beginning of each work shift check that all guards properly operate and that they ensure an efficient protection.

Periodically check the plates in particular the ones with yellow ground are in good state.

DANGER-WARNING:

the responsible technician is to be informed about eventual troubles during the test; in that case he shall shut off the machine and apply to Technical Service of SCM ***dealer.***
Every 20 years the safety circuit must be overhauled. Contact the manufacturer.

20.7.1 SPARE PARTS THAT AFFECT THE OPERATOR'S HEALTH AND SAFETY

(mmax_20-7-1_0.0)

The previous section "Checking safety devices" indicates the operations which the user must perform and the respective frequency.
Such operations allow early identification of any malfunctions in machine safety systems.

NOTE-INFORMATION:
if a malfunction is detected, the user must contact the Assistance Centre authorised by SCM***.***

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FORBIDDEN:
never attempt any work on the devices unless otherwise indicated in this manual.

The SCM assistance centre will identify which safety system component needs substituting and will substitute it (or will provide instructions on how to proceed).

NOTE-INFORMATION:
the user (or a specialised user technician) is only authorised to carry out the work described in this Instruction manual.

NOTE-INFORMATION:
when carrying out any maintenance tasks original spare parts supplied by the SCM ***(manufacturer) must always be used). The manufacturer is not responsible for damages due to the use of not original parts.***

NOTE-INFORMATION:
the entire machine electrical/electronic system is essential to machine safety. Therefore, the user is not authorised to carry out any repair/substitution of electrical or electronic components, except what is indicated in this manual.

DANGER-WARNING:
the user must also comply with the substitution times for the various safety devices, always using the SCM ***Assistance service to identify the correct spare part and to install it (unless otherwise indicated in this manual).***

SPARE PARTS THAT CAN BE INSTALLED BY THE USER

NOTE-INFORMATION:
in the spare parts catalogue the letter "C" indicates the codes of spare parts which affect operator health and safety.

These spare parts can be installed by expert personnel instructed by the user.

DANGER-WARNING:
for all other spare parts contact the Manufacturer's Dealer SERVICE or contact the Manufacturer's SERVICE directly.

20.8 AUTO-BRAKE MOTOR

(ev_20-8_0.0)

OPT

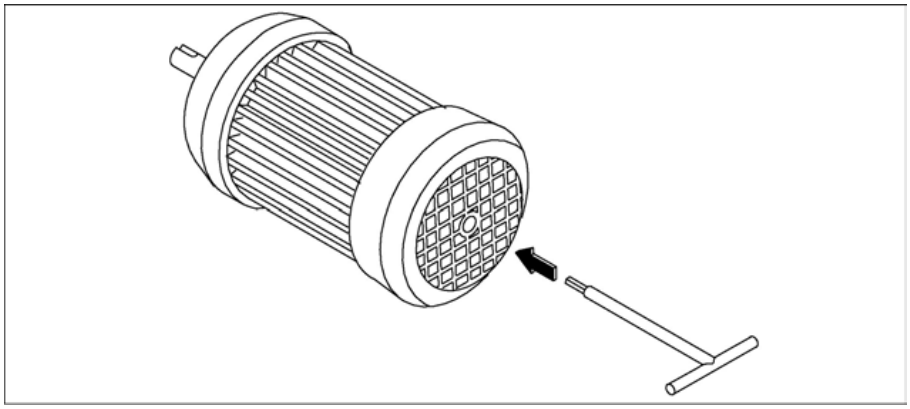
At least every 2 months or 500 stops, check and adjust the electromechanic braking device.
Braking efficacy reduction can be noticed by the increase of the time required to fully stop the cutterblock/spindle (max. time 10 seconds) in case of tool of max. size and at the maximal permitted speed.
Before carrying out any intervention on the motor, shut off the power by turning the padlockable main switch to 0 - OFF.

Adjustment of braking unit
Every two months or every 500 braking actions, braking unit adjustment is mandatory.
To reset the best braking torque proceed as follows:
- insert an Allen wrench into the hole on cover for the fan in order ot reach the adjusting screw;
- progressively screw down screw in order to join the mobile elements and to eliminate distance (brake clearance);
- unscrew screw by min.1/4 turn (max.1/3 turn) (corresponding to about 0.4 mm air gap);
- turn the brake release selector several times to check that it operates correctly;
- start and stop the motor a few times to check the correct running.

DANGER-WARNING
If the adjustment is not carried out, the machine could have these problems:
- no braking within the maximum stop times (10 seconds)
- no brake release at start command, leading to overheating of the brake and the adjusting systems.

NOTE-INFORMATION:
if the adjustment procedure cannot correctly restore brake operation, substitute the braking unit.

Braking unit substitution
Replacement is to be carried out only by technicians of SCM ***dealer.***



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(fs_vuota_20-02)

20.18 BELTS REPLACING

(fs_20-18_0.0)

If only one belt is worn or too long, you have to replace all belts.

DANGER-WARNING
loosen handle (L fig. 20.18) then move the fence totally forwards; tighten handle (L fig. 20.18).

- Stop the machine (see Chapter 5); turn the main switch to 0, lock it and indicate it with a sign.
- Remove guards (A, B fig. 20.18).
- Slacken the fixing screws (V fig. 20.18).
- Loosen the nut (C fig. 20.18).
- Loosen the tensioning screw (D fig. 20.18) through the hole under the thicknessing table.
  By using a lever lift the motor and keeping it in this position withdraw the worn belts (E fig. 20.18), then fit the new ones.
- Stretch the belts as described (see par. 20.28).
- Fit guards (A, B fig. 20.18) again.

NOTE-INFORMATION:
tighten fastening screws (V fig. 20.18) and ensure that the motor has stopped against the sheet-metal (H fig. 20.18).

FORBIDDEN:
- never pair belts of different makes;
- never use a new belt and an old one, because in that case the new belt tramsmits the entire power by itself and so it is damaged in short time.

DANGER-WARNING
the cover and door are fixed safety guards and must be reassembled before operating.

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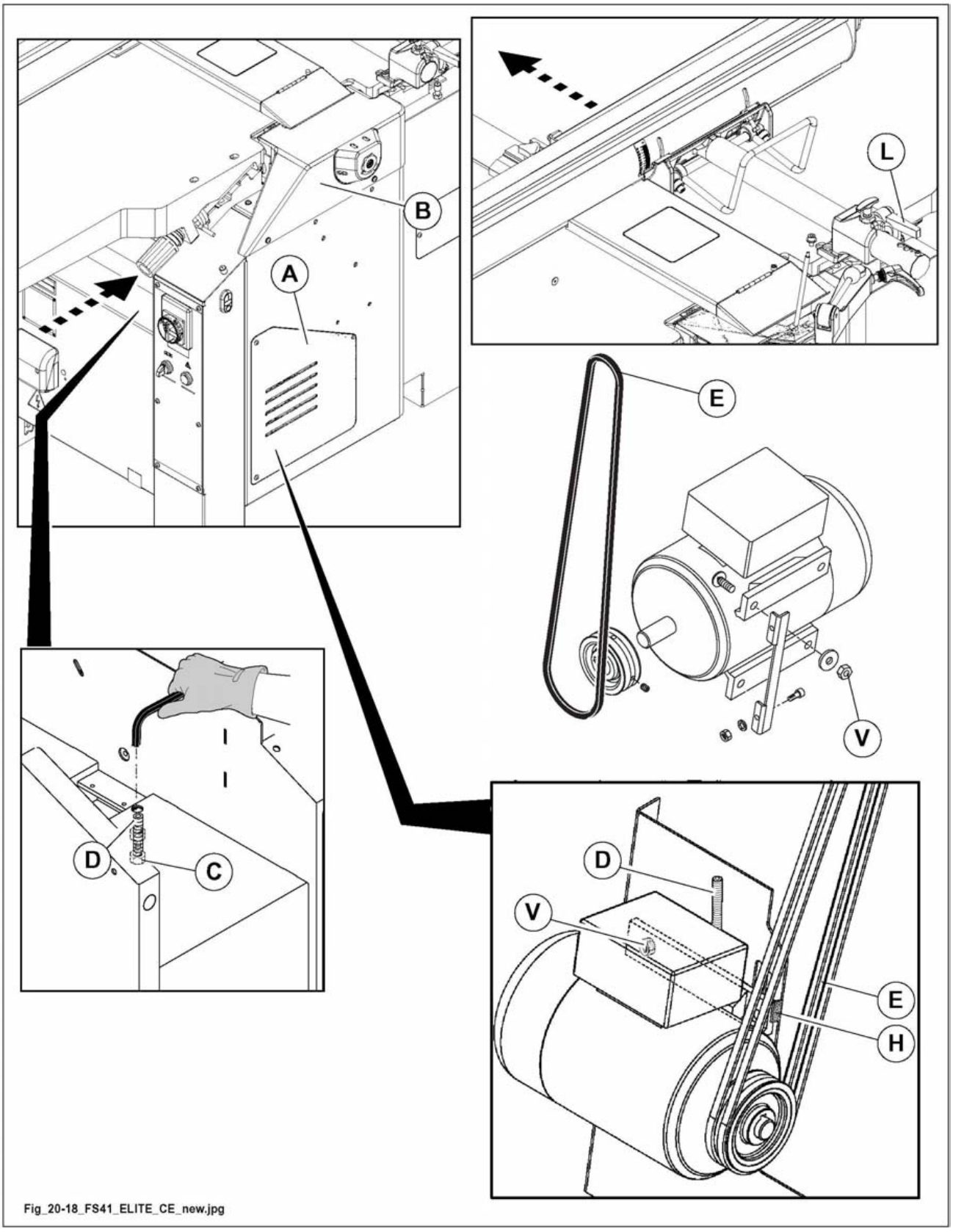


Fig. 20.18

20.28 BELT TENSION ADJUSTING

(fs_20-28_0.0)

DANGER-WARNING
check the belt tension after the first 10 hours of machine operation.
Do not overstretch the belts not to overload the bearings.
Overstretching may overheat and destroy the belts.

NOTE-INFORMATION:
every week check the cutterblock belts.

To stretch the belts proceed as follows.
- Stop the machine (see Chapter 5); turn the main switch to 0, lock it and indicate it with a sign.
- Remove guards (A, B fig. 20.18).
- Slacken the fixing screws (V fig. 20.18).
- Unloose nut (C fig. 20.18) and adjust screw (D fig. 20.18) to stretch the belt.
- Tighten the nut (C fig. 20.18) when the adjustment has been made.
- Tighten screws (V fig. 20.18).
- Fit guards (A, B fig. 20.18) again.

DANGER-WARNING
DO NOT use the machine without the required guards for every machining process or removing part of the guards.

CAUTION:
an excessive belt tightening will cause both functioning failures and belts wear beforehand. By exerting a force P in the middle of a belt, the latter must have a yielding f as shown in the table.

Force P		Yielding f (mm)
N	Kp	
25	2,5	14 ÷ 15

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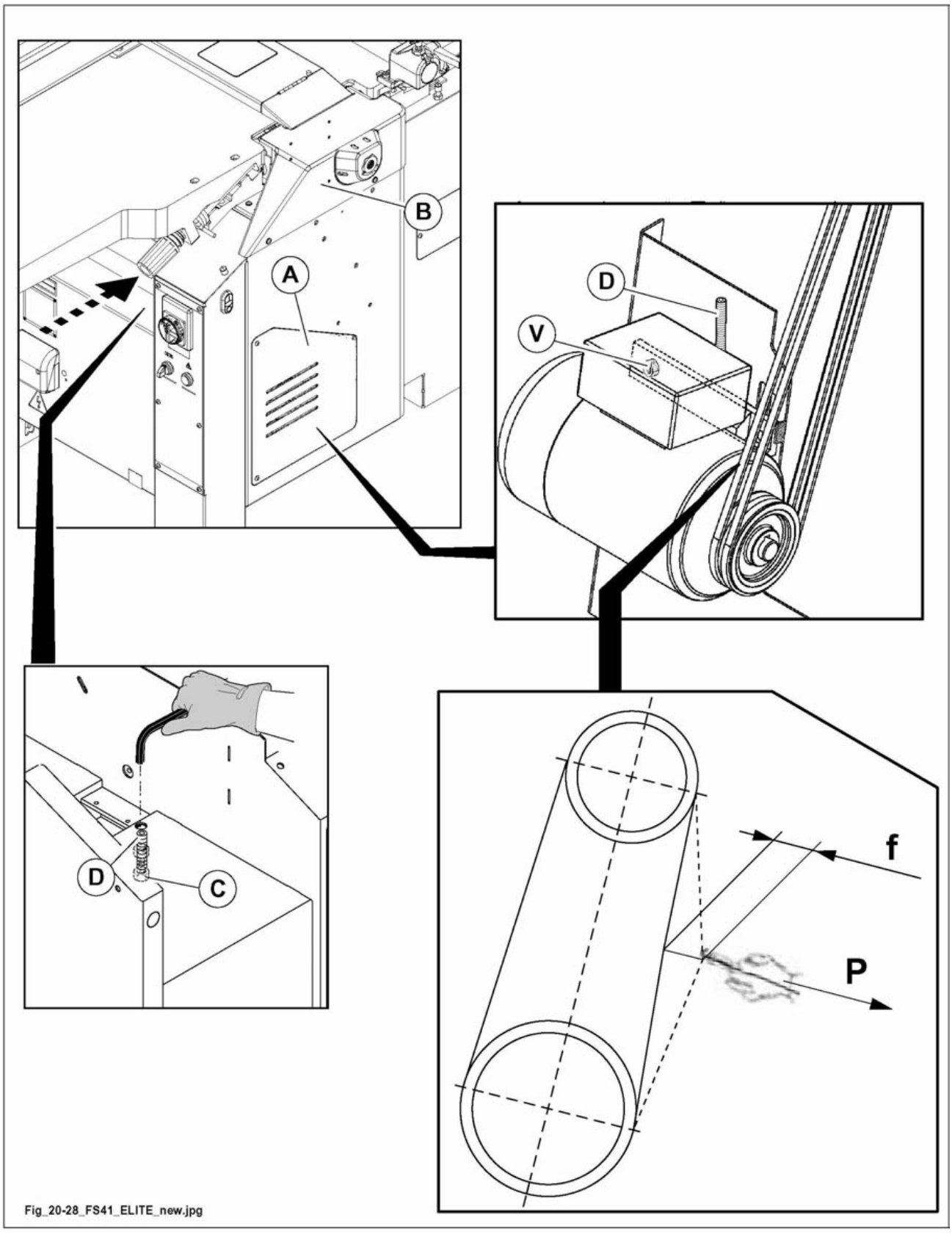


Fig. 20.28

20.37 TROUBLES - CAUSE - WHAT TO DO

(fs_20-37_0.0)

This section indicates some solutions in case of eventual troubles which may rise during the machine operation.

The operator shall intervene only after reading all that concerns the problem in this handbook.

In case of troubles not described here, apply to SCM Technical Service.

PROBLEM	CAUSE	REMEDY
The spindle motor does not start.		
	No electrical energy on one or more phases of the line.	Check with a tester there is voltage in the three phases.
	The fuses of the auxiliary circuit are interrupted or the fuse block cover is open.	1- Close the fuse block cover. If the machine does not start: 2- Open the fuse block cover. 3- Check the integrity of fuse, if necessary, replace them. 4- Adjust the braking unit as described in section 20.8.
	Emergency on.	Switch off the button by turning it.
	Guards not in right position.	Check that the guards are in right position: - planer: all tables closed and tipper open. - thicknesser: tipper closed.
	Overload triggered	Reset overload located on the control board.
	(OPT) Motor brake off.	Turn selector for brake release to (brake locked).
	Main ON/OFF switch can be padlocked in position **0** (OFF).	Rotate main ON/OFF switch to **I** (ON).
The machine stops during machining.		
	No electrical energy on one or more phases of the line.	Check with a tester there is voltage in the three phases.
	The fuses of the auxiliary circuit are interrupted or the fuse block cover is open.	Close the fuse block cover. If the machine does not start: 1- Open the fuse block cover. 2- Check the integrity of fuse, if necessary, replace them (a set is supplied with the accessory pack).
	Too heavy operation in relation to the power of the motor, or bad cutting conditions.	Wait for the thermal cut-out protection located inside the control panel, then restore it to cool down. Check the condition of planer spindle' knives and sharpen or replace them if necessary.
	Belts worn or slow.	Adjust them or change then as described in Par. 20.28 o 20.18.
The thicknesser table does not lift or lower.		
	The table screws height adjusting are clogged with dust and resin and after a few mm of lifting the red warning light comes ON.	Clean the screws; check the state of the chain.
The wood is not fed.		
	Advancing speed too slow.	Change speed (see paragraph9.4).
	Roller pressure too low.	Adjust rollers (see paragraph 9.8).

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PROBLEM	CAUSE	REMEDY
	The thicknesser table is adjusted to a measurement greater than the thickness of the wood.	Bring the table to the correct height (see paragraph 9.5; 9.6).
	The chain is broken	To change it call your dealer's Assistance Service SCM.
The tables do not close		
	Tipper closed.	Open cutter block safety tipper completely.
The motor operates but the spindle stops when it is in contact with the workpiece.		
	The belts between motor pulley and shaft have slowed down.	Stretch the belts (as described in paragraph 20.28).

20.60 UNSCHEDULED MAINTENANCE

(mmax_20-60-0.0)

All tasks not expressly listed in this manual, such as:

- tasks to be carried out following component or electric motor faults
- tasks to be carried out following mechanical system component faults

shall be considered unscheduled maintenance tasks.

These tasks require specific skills and must only be carried out by qualified personnel authorised by the machine manufacturer.

DANGER-WARNING:
never attempt to carry out makeshift repairs or replacements; this could result in dangers of a serious nature for exposed personnel and the machine itself.

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