scmgroup

INSTRUCTION MANUAL

TRANSLATION OF THE ORIGINAL OPERATING INSTRUCTIONS

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

accord 30 fx-m

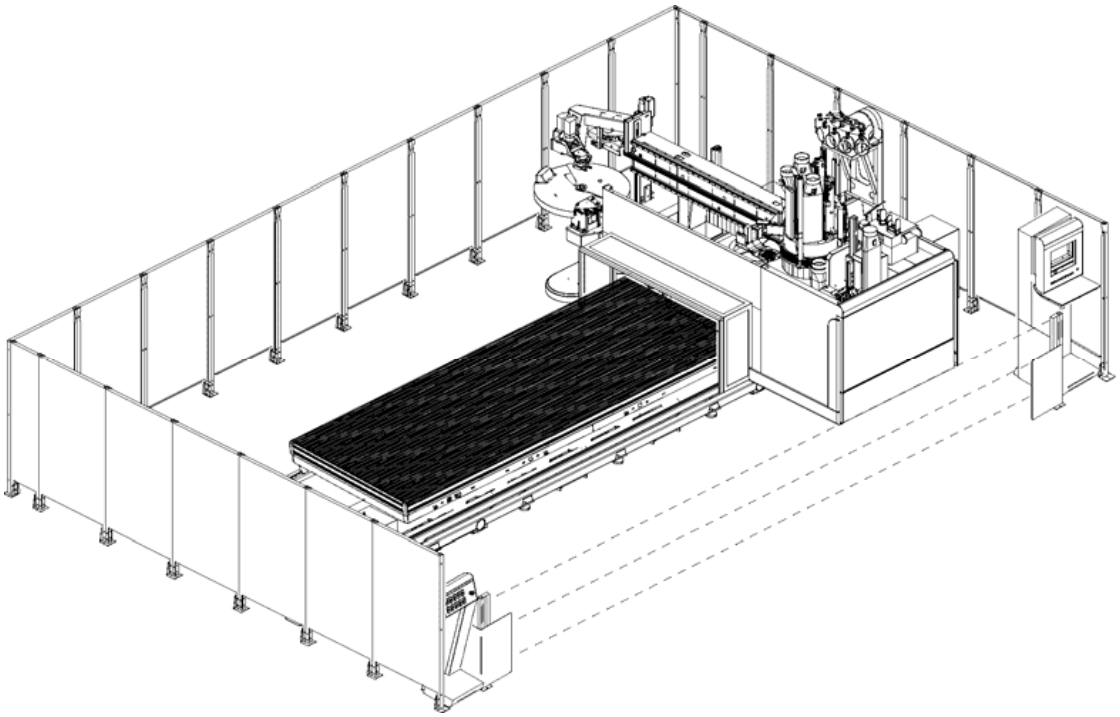
INSTRUCTION MANUAL

Rel. 1.2 / 05-2012 **s.n. AA2/002685** EN

CE

NC BORING AND ROUTING MACHINE

NUMERIC CONTROL BORING - ROUTING MACHINE
FOR WORKING WITH WOOD AND MATERIAL
WITH SIMILAR PHYSICAL CHARACTERISTICS



MANUFACTURER:	**SCM GROUP s.p.a.**
ADDRESS:	**Via Emilia, 77 - I - 47921 Rimini (RN) - ITALY**
TYPE OF DOCUMENT:	**INSTRUCTION MANUAL**
DOCUMENT CODE:	**s.n. AA2/002685**
EDITION:	**Rel. 1.2 / 05-2012**
PRODUCT:	**accord 30 fx-m**
MODEL:	**accord 30 fx-m**
SERIAL NO.:	**AA2/002685**
CUSTOMER:	
CUSTOMER SERIAL NO.:	
YEAR OF MANUFACTURE:	
PRINT DATE:	**04/12/2013**
CONFORMITY:	CE

INDEX

INDEX

INDEX

INDEX

INDEX

INDEX

INDEX

INDEX

INDEX

A.1 Documentation provided with machine

(ux5-hde_1.1_a.1)

The documentations with the machine are composed of :

- Paper copy of the instruction manual (this one) inclusive of a separate section with electrical and pneumatic diagrams bearing the type and/or serial number of the machine.
- Statement of "EC" conformity* (See FAC-SIMILE)

Compact Disk contains:

- Instruction manual
- Electric and pneumatic circuit arrangements
- User and programming manual
- Spare parts catalogue
- Technical generic documentations of machine components is not necessarely included

Inside the CD-rom enclosed to the documentation of the machine there is the official version of the use and maintenance manual in Italian language written by SCM Group S.p.A.

The pneumatic and electrical diagrams are intended specifically for specialized technicians hired by the manufacturer and are, therefore, drawn up only in Italian and English.

The software manuals are for use by expert technicians only, therefore they are translated into (1): English, German, Spanish and French.

(1) the supply includes only one of these languages

All the documentation supplied with the machine, especially this manual, the EC declaration of conformity and the wiring and pneumatic diagrams, must remain with the machine when sold to another user.

****THE "CE DECLARATION OF CONFORMITY" IS COMPILED IN A SINGLE COPY AND MUST ALWAYS BE IN THE POSSESSION OF THE MACHINE OWNER AND MUST ALWAYS REMAIN WITH THE MACHINE: THE ORIGINAL IS SUPPLIED PRINTED ON WATERMARKED PAPER***

The CE declaration of conformity refers to the machine complete with all possible configurations that can be realised based on catalogue optional features.
NOTE: The devices on the price-list can change at manufacturer's discretion

- -
(facsim-ce_acc-30-fx-m)

THE ORIGINAL COPY OF THE ""EC" DECLARATION OF CONFORMITY" MUST REMAIN WITH THE MACHINE WHEN SOLD TO ANOTHER USER.

DICHIARAZIONE “CE” DI CONFORMITÀ

(AI SENSI DELL’ AII.IIA DELLA DIRETTIVA 2006/42/CE E DI ALTRE DIRETTIVE APPLICABILI)

"EC" DECLARATION OF CONFORMITY

(IN ACCORDANCE WITH ANNEX II A TO DIRECTIVE 2006/42/EC AND OTHER DIRECTIVES APPLICABLE)

IL FABBRICANTE: *THE MANUFACTURER::*	***SCM Group s.p.a.*** ***Via Emilia, 77*** ***I-47921, Rimini (RN) - ITALY***

DICHIARA CHE LA
DECLARES THAT THE

MACCHINA: *MACHINE:*	[c18] *Numerically Controlled (NC) boring and routing machines: for working wood and materials with similar physical properties.*		
MARCA: *BRAND:*	SCM:	N°DI SERIE: *SERIAL No.:*	***XXXXXXX***
TIPO: *TYPE:*	ACCORD 30 FX-M	ANNO DI COSTRUZIONE: *YEAR OF CONSTRUCTION:*	***XXXX***
MODELLO: *MODEL:*	ACCORD 30 FX-M		

È 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*
2004/108/CE	*2004/108/EC*

PERSONA AUTORIZZATA A COSTITUIRE IL FASCICOLO TECNICO: *PERSON AUTHORISED TO PRODUCE THE TECHNICAL FILE:*	***SCM Group s.p.a.*** ***Via Emilia, 77*** ***I-47921, Rimini (RN) - ITALY***

IL RAPPRESENTANTE DELEGATO DEL FABBRICANTE
THE MANUFACTURER'S REPRESENTATIVE

Rimini, ***XX/XX/XX***,

XXXXXXXX

(IT) LINGUA ORIGINALE DICHIARAZIONE
(EN) TRANSLATION OF DECLARATION ORIGINAL LANGUAGE

A.2 Importance of the instructions manual

(acc-30-fx_2.2_a.2)

The constructor supplies this handbook, in order to give all the information and the instructions which are necessary for a correct usage of the machine.

Before using the machine "the authorised operators" using the machine and performing maintenance operations must read and understand all sections of this manual.

The addressee of this handbook is the staff charged with the work on the machine: it needs to be professionally qualified as far as its task is concerned and it has to read the handbooks by making kind attention to the security rules and to the paragraphs dealing with its own task.

It is recommended not to carry out any operation not described in this manual.

- The machine is equipped with an electronic control device for programming all of the panel machining operations; the utilisation modes are described in the attached manual in the CD.
- The aim of this manual is to prevent accidents to persons and damage to machinery. Please read it carefully, paying special attention to the text preceded by the words Warning, Caution, Important or Note and to text in underlined, bold type.
- Use of this manual is the sole responsibility of the user. Operations not described in it, or not performed according to instructions if they are described, are forbidden. Any operator who performs unauthorised operations or fails to follow instructions must accept full responsibility for the result of his/her actions.
- The constant observation of the instructions in it contained guarantees: safety for the man and the machine, operation saving and a longer length of the machine functioning.

This manual is an integral part of the machine, it must be stored for future reference and it must always remain with the machine.

Some of the pictures in this handbook may not exactly correspond with the true configuration of the machine: this doesn't have no influence on the validity of the information and instructions supplied and doesn't compromise, therefore, the user safety.

THIS MANUAL MUST REMAIN WITH THE MACHINE WHEN SOLD TO ANOTHER USER.

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(acc-30-fx_2.2_a.2a)

The "PRO-SPEED" version is mainly displayed in this manual (See chapter "Machine description")

A.3 Consultation notes - acronyms - glossary

(acc-40-fx_1.1-3.3_a.3)

Page layout:

- at the top there is the company logo, the type of machine, the description of the section and the two-letter international code for the language.
- at the bottom there is the section code and the progressive and total number of pages: the numbering of the pages refers to the section only

Abbreviations:

Pag.	= page
Fig.	= figure
Cap.	= section
Min	= minimum
Max	= maximum
s.l.m.	= above sea level
pos.	= position
H	= height
Ø / D	= diameter
CC	= direct current
CNC / CN	= Numeric Control
PC	= Personal Computer
DPI	= Personal Protective Equipment
E.M.	= Electro-spindle
PES	= expert person (according to standard EN 50110, CEI 11-27)
PAV	= warned person (according to standard EN 50110, CEI 11-27)
PRO-SPEED	= machine with photocells, enabled to the double speed of axis "X" (See chapter "Machine description")
PRO-SPACE	= machine without photocells, enabled only to the low speed of axis "X" (See chapter "Machine description")

NOTE: In the manual the terms "SCM" and "manufacturer" substitute the full name SCM GROUP S.p.A.

-
(layout_sch-el_1.0)

The electrical diagrams shows the following data:

MACHINERY MODEL:	Machine model
MACHINERY SERIAL NUMBER:	Machine serial number
REV. No.:	Revision number
DESCRIPTION:	Description
DATE:	Date
DRAWN:	Drawer
APPROVATED:	Approved
MANUFACTURER:	Manufacturer
TITLE:	Title
ELECTRIC DIAGRAM:	Electric diagram
CODE WD:	WD code
PHASES:	Phases
FREQ (Hz):	electrical frequency in Hertz
Un (V):	Rated voltage in Volts
In (A):	Rated current in Amperes
Ik (kA):	Short circuit current
FORMAT:	Format
SCALE:	Scale
SHEET:	Sheet
NEXT:	Next

A.3.1 Symbols in User Manual

(ux5-hde_1.0_a.3.1)

NOTE: The present manual applies to all versions of machines. Instructions and information applicable only to a particular version or versions are indicated with a Note or symbol.

THE SYMBOLOGIES OF REFERENCE FOR THE STAFF USING THE MACHINE ARE AS FOLLOWS:

chapters assigned to the production user. He mustn't carry out any setting up or machine equipment operations.

chapters assigned to the expert user charged with the equipment and the setting up of the machine.

chapters assigned to the expert user charged with the machine programming.

chapters assigned to the user charged with the maintenance.

NOTE:The chapters that lack specific symbols as above described, are to be understood for the whole staff charged with the machine.

ATTENTION: indicates dangerous situations and/or conditions

PROHIBITION: it shows the duty of not carrying out any manoeuvres, controls or anything else that can create conditions very dangerous for the man or harmful for the machine.

OBBLIGATION: indicates an obligation to carry out instructions given

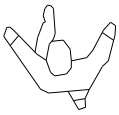
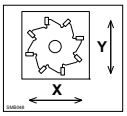
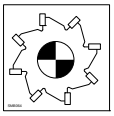
PRECAUTION: indicates situations that might be dangerous if not carefully respected.

WARNING / NOTE: indicates situations and/or recommendations to pay attention to

Read the manual and follow the manufacturer's instructions

HSK 63

Specific for electro spindles with HSK63 fitting

OPTIONAL	Feature supplied only on request
	Machine operator
	No-access area with on or operating machine
(R - D)	Right rotation (Clockwise)
(L - S)	Left rotation (Anti-clockwise)
	Vertical routing unit
	Drilling unit for hinges
	Disc routing unit with manual positioning in "X" or "Y" axes
	Unit with horizontal routing and cutter disk
	Use ortho-protection devices
	Use eye goggles

Use work gloves

Use of protection mask for respiratory protection is compulsory

Position of the main electrical ON/OFF switch (electrical panel on)

Position of the main electrical ON/OFF switch (electrical panel off)

A.3.2 Symbols on the machine

(a-m800_1.0-3.3_a.3.3)

DANGER: ELECTRICAL CURRENT

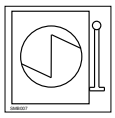
GENERAL DANGER

DANGER: LASER BEAM

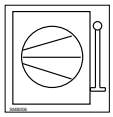
DANGER: MAGNETS: This symbol indicates the device contains neodymium (NdFeB) magnets which are much more powerful than ordinary magnets. Keep away from devices / objects that can be damaged by magnetic fields: computers, monitors, floppy disks, mechanical clocks, hearing aids, loud-speakers, etc. [attenz] PEOPLE WHO HAVE ELECTRO-MEDICAL DEVICES (SUCH AS PACEMAKERS) MUST TAKE PARTICULAR CARE AND KEEP AT A SAFE DISTANCE OF AT LEAST 1m.

NOT TO BE USED BY PACEMAKER WEARERS

Indicates that it is compulsory to have read and understood the entire instruction manual before using the machine.



Electrical power switch



Pneumatic power switch

Pneumatic power

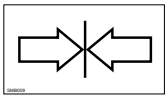
Vacuum pump

Read the manual and follow the manufacturer's instructions

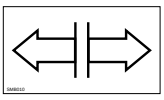
Read the manual for the adjustment / fixturing operations

Read the manual for the cleaning operations

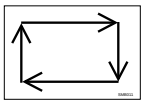
Read the manual for the lubrication operations



Lock



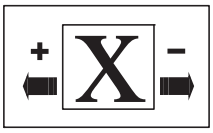
Release



Automatic cycle

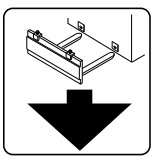
Stop

Start

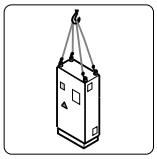


Direction Axis

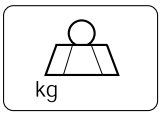
Device for lifting by hook



Forks insertion point for lifting the machine with a fork lift truck



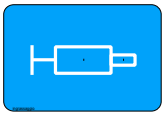
Loading instructions



Weight: kg...

Prohibition of disconnecting cables (absolute encoder)

Do not tread on / climb



Greasing point

Prohibition of disconnecting cables (absolute encoder)

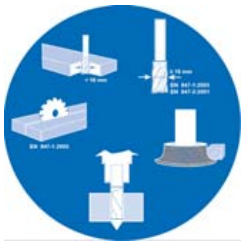
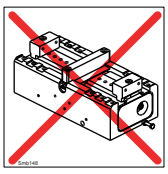


Plate identifying the tools that can be used on the machine and relative requirements: boring bits, sanding pads, cylindrical cutters (with diameter less than 16 mm) have to show the maximum speed of rotation (rpm); blade tools must comply with EN 847-1:2005; cylindrical cutters with diameter greater than 16 mm must comply with EN 847-1:2005 (tools) / EN 847-2:2001 (tang, if present).



It is prohibited to assemble the horizontal clamp on the accessory support

A.4 Machine Identification

(targa_macchina_1.0)

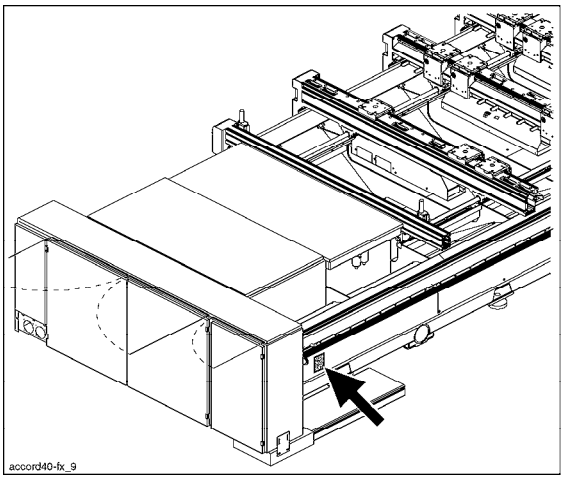
Plate A is marked with the identification data for the machine. Please quote this data when making technical enquiries or ordering spare parts.

The plate is located on the frame of the machine and shows the following data:

- DESIGNAZIONE = Description of type of the machine
- Marca = Merchandise mark
- Tipo = Machine type
- Anno = Production year
- N° Serie = Serial number
- kg = Weight (kg)
- 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
- Mod. = Machine model
- Comp. = Machine version
- Ref. = Internal references

It is a good idea to write down the machine identification data on this page for ready reference.

(sp_210mm)



A.5 Contact Address

(acc-40-p_1.2_ce_1.2)

When writing to or calling the dealer or SCM Group S.p.A. for any reason relative to the machine, always have the following information ready:
- Machine model
- Year of construction
- Serial number
- Voltage and frequency

For any request and/or information contact:

Assistence department:	Tel. 0039, 0541/700100
E-mail:	service@scmgroup.com
Spare parts department:	Tel. +0039 0541 674706
E-mail:	spareparts@scmgroup.com

A.6 Machine Description

(acc-30-fxm_1.0_a.6)

This machine is a NUMERIC CONTROL BORING - ROUTING MACHINE FOR WORKING WITH WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS

The structure has two main elements:
- the load-bearing base A
- the single-piece upright B which moves along the X-axis

Machining unit C is mounted on a slide D which is moved on the upright B mobile along the Y-axis and includes movement along the Z1 - Z2 (opzionale)-axis.

All the axes move on prismatic guides with ball bearings; high quality pinions and gear racks are used for the X and Y axes while ball bearing screws of equally high quality are used for the Z axes.

The working table “E” is a single table type Nesting: the information about this table are indicated into the specific chapter.

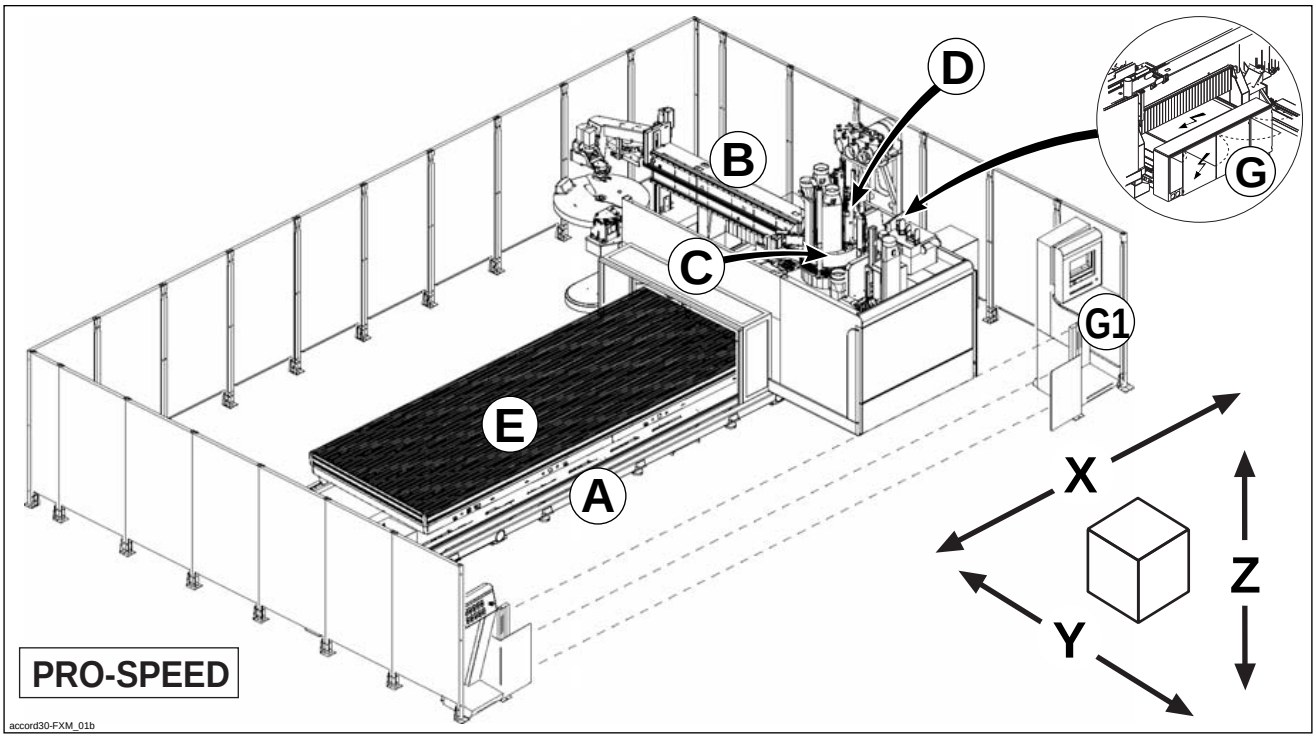
The control unit of the machine is installed on the electrical cabinet G and a console G1 .

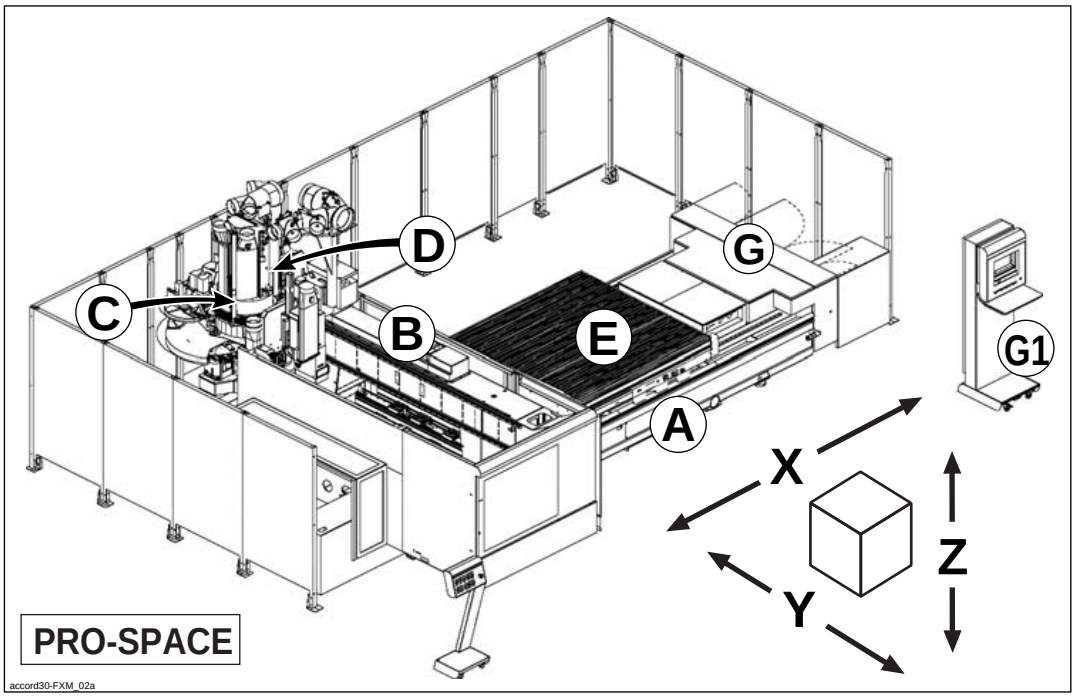
This machine has two types of set-up:
PRO-SPEED
PRO-SPACE

The PRO-SPEED set-up foresees the presence of the front safety photocells and the double speed of axis "X" with the slowdown booking of the speed to gain access in the operational zone without stopping the machine.

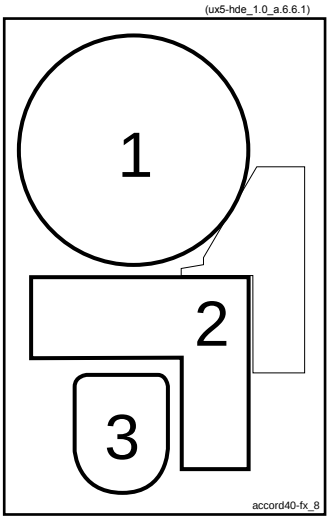
The PRO-SPACE set-up is dedicated to customers that require a machine with reduced overall dimensions: for this reason the machine does not have the front safety photocells, has a shorter enclosure in the "Y" direction and only has the reduced speed of axis "X" enabled.

For further information on the safety devices operation, consult the specific chapter.




D
G
C
B
E
G1
A
X
Z
Y
PRO-SPACE
accord30-FXM_02a

A.6.1 Operating units description



The machine can be equipped with the following units:

POSITION 1:
- Prisma K - 11kW — 20,000rpm electrospindle with HSK 63 coupling
- Prisma S - 13kW — 24,000rpm electrospindle with HSK 63 coupling
- Prisma Q - 15kW — 24,000rpm electrospindle with HSK 63 coupling

- HSK 63 connection 8,5kW Electric spindle
- HSK 63 connection 11kW Electric spindle
- HSK 63 connection 15kW Electric spindle
- HSK 63 connection 18kW Electric spindle

POSITION 2:
- F14L boring unit: with 10 vertical spindles — 4 horizontal spindles (2 on “X” axis, 2 on “Y” axis) - blade unit
- F16 boring unit: with 10 vertical spindles — 6 horizontal spindles (4 on “X” axis, 2 on “Y” axis)
- F20L boring unit: with 14 vertical spindles — 6 horizontal spindles (4 on “X” axis, 2 on “Y” axis) - blade unit
- F20L2 boring unit: with 14 vertical spindles — 6 horizontal spindles (4 on “X” axis, 2 on “Y” axis) - 0-90° blade unit
- F22L boring unit: with 14 vertical spindles — 8 horizontal spindles (4 on “X” axis, 4 on “Y” axis) - blade unit
- F26L2 boring unit: with 14 vertical spindles — 12 horizontal spindles (8 on “X” axis, 4 on “Y” axis) - 0-90° blade unit
- F30L boring unit: with 24 vertical spindles — 6 horizontal spindles (4 on “X” axis, 2 on “Y” axis) - blade unit
- F30L2 boring unit: with 24 vertical spindles — 6 horizontal spindles (4 on “X” axis, 2 on “Y” axis) - 0-90° blade unit
- F37L2 boring unit: with 25 vertical spindles — 12 horizontal spindles (8 on “X” axis, 4 on “Y” axis) - 0-90° blade unit
- F50L2 boring unit: with 38 vertical spindles — 12 horizontal spindles (8 on “X” axis, 4 on “Y” axis) - 0-90° blade unit

POSITION 3:
- PB1 — 8.5kW — 24,000rpm sanding unit
- PBTC — PB1 sanding unit + C.U. 6 positions

TOOL MAGAZINES:
- Rapid 12 On Board
- Rapid 16
- Rapid 24
- Chain 48
- Quick Changer Shuttle
- TR10

NOTE: The devices on the price-list can change at manufacturer’s discretion

A.6.2 Description of the Electrical Cabinet

(gamma-2010_3.4_a.6.6.2)

The electrical and electronic components are located into the cabinet L.
The whole main working phases are managed by an innovative numerical control, in order to assure high speed of execution, high power processing and to execute different functions simultaneously.

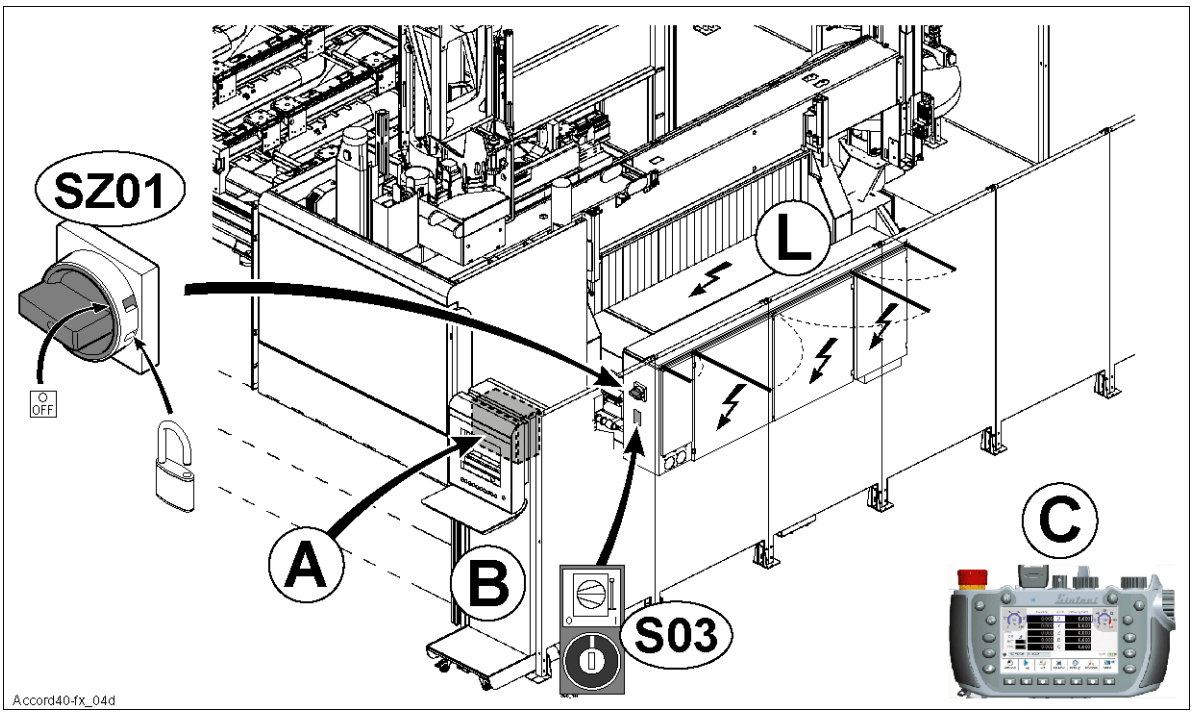
The machine is controlled by means of the operator interface at PC "A" mounted on console B, and by means of the mobile control panel C.

NOTE: On the electrical equipment are:

- ***a "SZ01" main switch for turning the electrical and pneumatic supply on and off.***
- ***an "S03" switch for turning the pneumatic supply on and off.***

Turning on the power at the main switch does not activate the pneumatic supply which has to be turned on at switch "S03".

WARNING: BEFORE OPENING THE DOORS OF THE ELECTRICAL CABINET FOR ANY REASON, ALWAYS TURN THE MAIN SWITCH TO THE ZERO POSITION AND LOCK IT .
ALWAYS GIVE THE KEY TO THE ELECTRICAL CABINET TO THE PERSON RESPONSIBLE FOR PRODUCTION.
ONLY SPECIALISED ELECTRICAL ENGINEERS MAY CARRY OUT WORK ON ELECTRICAL DEVICES.



A.7 Intended use and machining allowed

(ux5-hde_1.0_a.7)

This machine is a NUMERIC CONTROL BORING - ROUTING MACHINE FOR WORKING WITH WOOD AND MATERIAL WITH SIMILAR PHYSICAL CHARACTERISTICS

This machine is designed specifically for the purpose of boring and sanding.

SCM declines all responsibility for any damage arising as a result of use not described in this manual or incorrect maintenance.
Uses which are not allowed include the use of materials which are not specified by the manufacturer, or those which are outside machine technical specifications.

Arbitrary modifications made to the machine shall relieve the manufacturer of any liability for damages which may derive from it.

A.7.1 Materials workable

(ux5-hde_1.0_a.7.1)

This machine must only be used for machining wood or similar materials.
Products which can be machined also include workpieces made of wood or similar material, which are coated; the machining and shavings removal mechanism must not be altered.

Workpieces made of materials other than those indicated above, since they are not similar to wood, therefore cannot be machined by the machine.

Damage caused by machining materials other than those indicated is the responsibility of the user.

Wood or similar materials must be without foreign bodies (e.g. nails, stones, etc.)

A.7.2 Usable working tools

(ux5-hde_1.0_a.7.2)

WARNING: if you use tools for routing with a cutting diameter greater than 16 mm, these must comply with EN 847-1:2005 and EN 847-2:2000/AC2003 (European Standards).
WARNING: if you use blades these must comply with EN 847-1:2005 and EN 847-2:2000/AC2003 (European Standards).
WARNING: drill bits or tools for sanding may be used.

Follow the instructions of the manufacturer for use, adjustment and repair of the tools

Ensure that the tools are perfectly balanced, sharpened and accurately splined and tightened (unsharpened tools increase the risk of the workpiece being ejected)
The types and the dimensions of the tools are indicated in the chapters of the operating groups

WARNING: Permitted operating speeds are marked on the tools. Do not exceed these limits.

A.7.3 Use of machine "enables"

(ux5-hde_1.0_a.7.3)

Some machine configurations include the possibility of using "line enables"= that allow the machine to interface with other machines (automatic loaders= /unloaders, different machining equipment etc.).
The line enables are for installing the machine in line with other machines= or equipment. These devices must only be installed by highly qualified per= sonnel. (see electric diagram supplied with the machine)

WARNING: the use of line enables with which the machine has been set up, invalidates the effectiveness of the CE declaration issued under Attached 11A of Directive 2006/42/CE supplied with the machine. Therefore the new assembly of machine and enables must be re-certified by the owner/user.

WARNING: the resulting assembly must not be put into use until it has beenstated as complying with Directive2006/42/CE

WARNING: The owner/user of the resulting assembly becomes the manufacturer,= according to Directive 2006/42/CE

A.8 Prohibitions

(a632_1.0_ce_bps_1.7)

A.8.1 Materials not workable

(a632_1.0_ce_bps_1.6.1_)

IMPORTANT: This machine must not, under any circumstances, be used to machine iron, aluminium or light alloys, or any materials other than those indicated by the manufacturer.

The user will have to answer for any damages due to the machining of materials differing from the admitted ones.

A.8.2 Non admitted machinings

(a632_1.0_ce_bps_1.7.2)

it is absolutely forbidden to carry out machinings differing from the ones clearly shown in the special section of this handbook.

The user will have to answer for any damages occurred during non admitted machinings.

A.8.3 Non usable working tools

(a632_1.0_ce_bps_1.7.3~usa)

IT IS FORBIDDEN TO USE:

- tools that differ from those indicated in the "Usable tools" section

BESIDES:
- Do not use cracked, bent or blunt tools: blunt tools not only reduce the quality of work, but increase the danger of ejection of workpieces or parts of them, tools or parts of them.
- Never use tools at a speed higher than that indicated by the tool manufacturer and never use tools that are larger in size than the maximum indicated in the appropriate chapters and paragraphs of this manual.
- Never utilize tools not perfectly balanced

A.8.4 Areas where machine installation is prohibited

(=u2412_1.0_ce_ftc_1.7.4_inp)

The machine cannot be installed:

- Outside
- The machine cannot be placed in service in environments classified as potentially explosive according to European Directive "99/92/CE".

A.8.5 Non admitted usage modalities

(u2412_1.0_ce_ftc_1.7.5)

IT IS FORBIDDEN:

- To use the machine in a different way from what shown in this handbook
- to use the machine without the protections or some of their parts foreseen by the constructor
- to use the machine to work pieces with dimensions differing from the admitted ones.
- It is forbidden to utilize the machine if all the devices and protections necessary to work in complete safety are not positioned correctly, or if they are not in good conditions or if the maintenance has not been made correctly.

The user is the only responsible of any damages caused by an inappropriate usage.

A.8.6 Tamperings

(u2412_1.0_ce_ftc_1.7.6)

WARNING: MAKING VARIATIONS TO THE MACHINE CONFIGURATION PARAMETERS IS STRICTLY PROHIBITED. NEVER MAKE ANY CHANGES ON THE MACHINE.
THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR INJURY TO PERSONS OR DAMAGE TO OBJECTS AS A RESULT OF TAMPERING WITH THE MACHINE.

Installation of any software other than that installed by SCM Group S.p.A. is strictly forbidden.
Software untested by the manufacturer could interfere with correct operation of the machine.
SCM Group S.p.A. declines all responsibility for faults or damage caused by failure to observe this warning.

(sp_210mm)

INDEX

B.1 Reference directives and standards

(ux5-hde_1.0_b.1)

The machine has been projected and built in conformity to how much suitable in "EC Declaration of conformity."

B.1.1 Safety information

(ux5-hde_1.0_b.1.1)

Read this manual carefully before starting the machine, designed and built for maximum safety and top performance.

The machine must only be used by qualified operators

Persons using, adjusting, maintaining and repairing the machine must be familiar with and implement all instructions provided, especially in terms of safety.

The operator must never leave the machine unattended while it is operating.

The use of any machine tool involves certain risks. The operator is responsible for his/her safety and the safety of others.

Failure to observe safety standards always involves a serious risk of accident.

Never use the machine if under the influence of alcohol, drugs or medication.

The operator must be trained in the correct use of guards and safety devices. He/she must also be trained to carry out periodic inspections on these guards and safety devices.

Some of the pictures in this handbook may not exactly correspond with the true configuration of the machine: this doesn't have no influence on the validity of the information and instructions supplied and doesn't compromise, therefore, the user safety.
To make the instructions clearer some images may show the machine without protective guards (guards, perimeter enclosures, etc.):  ***do not remove these guards.***

WARNING: MAKING VARIATIONS TO THE MACHINE CONFIGURATION PARAMETERS IS STRICTLY PROHIBITED. NEVER MAKE ANY CHANGES ON THE MACHINE.

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR INJURY TO PERSONS OR DAMAGE TO OBJECTS AS A RESULT OF TAMPERING WITH THE MACHINE.

WARNING: BEFORE MACHINING, IT IS EXTREMELY IMPORTANT TO CHECK THE TOOLS ARE CORRECTLY INSTALLED (SEE THE SPECIFIC MACHINING HEADS AND TOOL HOLDER MAGAZINES SECTIONS - "IF THEY ARE PRESENT")

The indications and instructions in this manual about use of the machine are in addition to but are not meant to substitute, supplement or modify any specific standard, requirement, decree, directive or law in force where the installation takes place relating to safety, the use and maintenance of mechanical, electrical, pneumatic or other equipment or plants.

The machine / line is fitted with one or more interlocks / key-operated switches which enable use of the machine / line according to precise settings and logics for working in safety.

THE PERSON RESPONSIBLE FOR PRODUCTION IS THE GUARDIAN WHO KEEPS THE KEYS OF THE MACHINE / LINE.

The interlocks / key-operated switches must only be used by experienced operators who are authorized expressly by the person responsible for production: Improper use can cause dangerous operation of the machine / line.

The keys must be removed and TAKEN AWAY after use and any adjustments made with the interlocks / key-operated switches to prevent anyone from turning on and running the machine / line inadvertently.

B.1.2 Operator safety

(a632_1.0_ce_bps_1.8.1)

- Always wear suitable work overalls, safety footwear and hats or hairnets.

- Keep all cuffs buttoned up or rolled up so that they cannot become trapped in moving machine parts.

- Remove all items of personal jewellery or clothing which could cause accidents (rings, watches, bracelets, chains, ties).

- Ensure that all guards, grills, covers and safety devices are efficient and in place at all times.

- Switch off the main power supply to the machine before commencing any cleaning or maintenance operations.

- Keep the machine, work surfaces and the working area clean and clear of obstructions at all times.

- Make sure that the working area is suitably lit, by the main or local lighting.

- A clear space all around the machine is essential to safety.

- Personal protective equipment (PPE)

(ux5-hde_1.0_b.1.2)

It is important that when necessary operators and maintenance workers use appropriate personal protective equipment (PPE).

The instructions in this manual about the use of PPE are in addition to but are not meant to substitute, supplement or modify any specific standard, requirement, decree, directive or law in force where the installation takes place relating to safety for the worker.

Below is an indication of the PPE with the relative symbol used in this manual:

Ear defenders to reduce the risk of damage to hearing

Protection of airways, to reduce the risk of inhaling dusts and hazardous substances.
CAUTION: HARDWOOD SAWDUSTS ARE CARCINOGENIC

Protective goggles, to reduce the risk of damage to vision

Gloves for handling tools

Operators and maintenance workers must use PPE:

- ***which conforms to the laws and standards in force;***
- ***required based on the risks involved in the work to be done.***

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR ANY INJURY CAUSED BY FAILURE TO USE PPE.

-

(a632_1.0_ce_bps_1.8.1a)

WARNING:

- Always work from the front of the machine (See chap. "Working position").

- Only authorised personnel may enter the working area.

- Load and position the panels from the front of the machine.

- Do not perform checks or maintenance operations on any working area whatsoever of the machine when the machine is in operation. When the machine is running do not perform any checks or maintenance in a working area even though the machine might be operating in another area.

- Do not, under any circumstances, climb onto the machine for any reason while the power supply or the compressed air supply is on.

WARNING: Do not remove or disenable safety protection or emergency devices for any reason.

WARNING: Always use the doors to gain access to the fenced off area around the sides and back of the machine and do not, under any circumstances attempt to bypass the emergency safety devices (see subsecs. "Safety devices description")

ATTENTION: IT'S ABSOLUTELY FORBIDDEN TO ENTER, WITH TOOLS OR SOMETHINNG ELSE, INTO THE PROTECTIONS AND INTO SAFETY DEVICES OF THE GROUPS OPERATOR.

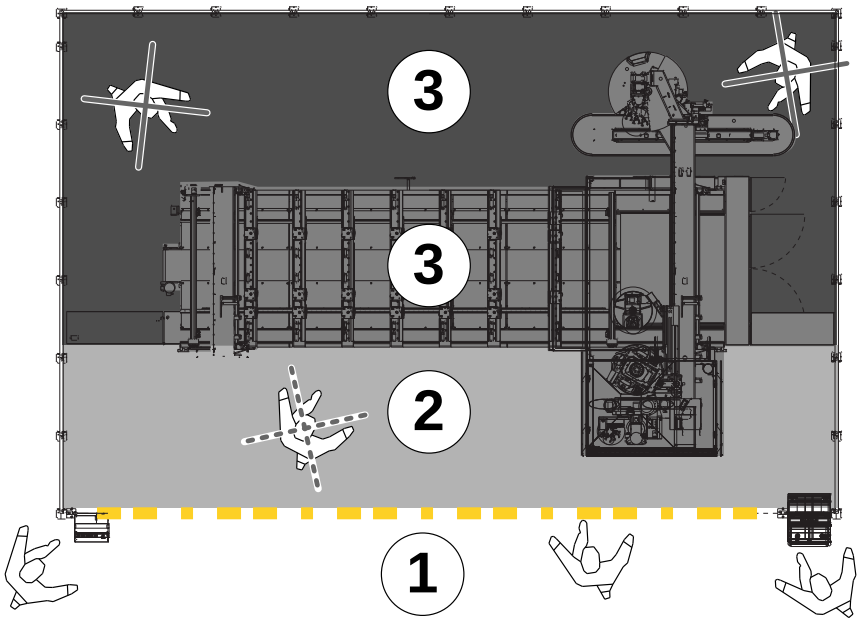
B.1.3 Working position

(ux5-hde_1.0_b.1.3)

During the machining the production user will be able to occupy only the working positions shown in LAY-OUT "Main working areas."

MAIN WORKING ZONES:

1 - Zone reserved for operators during machining
2 - Zone for load / unload panels (front of machine).
3 - Zone which is always off limits during machining (work table and machine side and rear areas).



The user will be the only responsible of any possible damages to things or people whenever he adopts positions differing from the ones shown above.

B.1.3.1 Noise

(=u2412_1.0_ce_ftc_1.8.1.1_inp)

The operator must be informed concerning the noise levels which may be generated during normal use of the machine and the factors which affect the exposure to noise. The factors include:

- correct tool selection;
- correct speed selection;
- tool and machine maintenance;
- type of material machined;
- proper use of personal protection (headsets, earplugs, etc.).

B.1.3.2 Dust

(u2412_1.0_ce_ftc_1.8.1.2)

The operator must be informed concerning the risks caused by exposure to dust and the factors which affect exposure. These factors include:

- tool and machine maintenance;
- relation between cutting speed and feed speed;
- type of material machined;
- importance of local aspiration on each operating unit (dust collection at source);
- proper adjustment of hoods, deflectors, hoppers;
- proper use of personal protection (masks, etc.).

CAUTION: HARDWOOD SAWDUSTS ARE CARCINOGENIC

You MUST connect all of the dust extractor hoods to the extractor network, the suction system must be connected to the machine and operational before starting machining.

DO NOT USE COMPRESSED AIR TO REMOVE DUST AND SHAVINGS:

- Compressed air will only blow dirt into delicate machine parts leading to operating faults.
- it would increase the dust concentration in work environment air

B.1.4 Safety norms on the machine

(u2412_1.0_ce_ftc_1.8.2)

- Persons using the machine must concentrate before beginning work and must prevent other, inexpert or unauthorised persons, from using the machine.

- Never start the machine unless all safety and emergency devices are fitted. These must never be removed.

- Avoid supporting panels by hand during machining.

- Observe all warnings on the machine, whether written or in the form of icons.

- The manufacturer declines all responsibility for unauthorised changes made to the machine and any damage which may arise as a result of said changes.

- Connect all dust extractor hoods to the vacuum system. Never operate the machine if the extractor system is off.

- Never remove waste or other parts of the workpiece from the machining area with the machine still operating .

- Before starting the machine, check that there are no extraneous objects on the work table.

- Periodically make sure that the earthing system is efficient

-Each new program needs to be tested in order to verify its feasibility in "vacuum", that is without any pieces or not in rotation working tools (absence of "crash" conditions).

- Report faults in the machine, including guards or tool as soon as they are discovered.

- Adopt safe procedures for cleaning, maintenance and remove chips and dust regurarly to avoid the risk of fire

Do not store objects in the electrical cabinet

The machine must not be used if the guards and safety devices are not active, in position, in good condition and properly maintained

Never work pieces of dimensions not suited to the machine capacity

B.1.5 Safety norms for tools

(u2412_1.0_ce_ftc_1.8.3)

- Do not use cracked, bent or blunt tools: blunt tools not only reduce the quality of work, but increase the danger of ejection of workpieces or parts of them, tools or parts of them.

- Never use tools at a speed higher than that indicated by the tool manufacturer and never use tools that are larger in size than the maximum indicated in the appropriate chapters and paragraphs of this manual.

- Handle tools carefully. To avoid damaging the cutting edges, do not place them on metal surfaces. Use protective gloves to handle cutting edges.

- Store tools in an orderly manner and in a place where they are not accessible to unauthorised personnel.

- Before fitting any tool in its seat or shaft, check that the contact surfaces are clean, free of marks and perfectly flat.

- Ensure that all rotary tools are perfectly balanced, sharpened and carefully keyed and tightened.

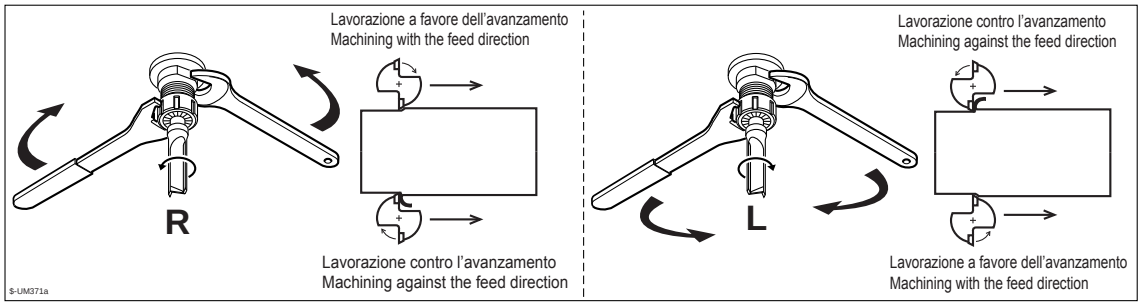
- When fitting tools, check that the ring nuts or tightening screws do not come undone during machining (A tool that rotates to the right will have a fastening system with a right screw-thread, while a tool that rotates to the left will have a fastening system with a left screw-thread: figure shows the correct way to shut a tool.); also check that the direction of machining matches the tool rotation .

- Follow the instructions of the working tools' constructor accurately, as far as their usage, their control and/or their repairing are concerned.

- During set up check that there is no contact between non-rotating tools and any machine element workpiece locking device.

WARNING: BEFORE MACHINING, IT IS EXTREMELY IMPORTANT TO CHECK THE TOOLS ARE CORRECTLY INSTALLED (SEE THE SPECIFIC MACHINING HEADS AND TOOL HOLDER MAGAZINES SECTIONS - "IF THEY ARE PRESENT")

Figure shows how to correctly tighten a tool on the spindle and the correct direction of feed relative to tool rotation.



WARNING: if you use tools for routing with a cutting diameter greater than 16 mm, these must comply with EN 847-1:2005 and EN 847-2:2000/AC2003 (European Standards).
WARNING: if you use blades these must comply with EN 847-1:2005 and EN 847-2:2000/AC2003 (European Standards).
WARNING: drill bits or tools for sanding may be used.

IT IS FORBIDDEN TO USE DIFFERENT TOOLS.

B.1.6 Safety norms in the maintenance

(=a632_1.0_ce_bps_1.8.4_inp)

Before any maintenance operation, check that the main On/Off switch is padlocked in the O OFF ***position.***

- Ensure that safety devices are always maintained in working order.

- Before removing any protective device for maintenance, adjustments or cleaning, stop the machine completely.

- Switch off the power using the main On/Off switch, then apply a sign to the machine indicating that work is being carried out.

- Clean the machine, the floor and the work tables carefully and at the proper intervals. Also keep decals and plates on the machine clean at all times.

- Regularly remove chippings and dust to prevent fire hazards.

- Do not use compressed air to clean the machine and the surrounding area, but use either industrial vacuum cleaners or a manual means of cleaning (e.g. brooms, rags, ecc.).

- Any machine fault or defect, including on guards or tools, must be reported as soon as it is discovered. The machine must be stopped and the necessary action taken.

B.1.7 Operator training

(u2412_1.0_ce_ftc_1.8.5)

It is important that all the operators receive adequate training, which includes information relative to the dangers associated with use of the machine and the precautions to take.

In particular:

- the machine operating principles, proper use, correct use of the protections which must periodically be checked;
- how to handle the pieces at the time of use, and reject wood with evident defects (curved, split, knotted, containing stones, metal, etc.);
- the position of the hands before, during and after machining;
- report falts in the machine, including guards or tool as soon as they are discovered
- the operators must furthermore be trained for firefighting operations.

B.1.8 Warning for installing and configuring PC-OFFICE

(u2412_1.0_ce_ftc_1.8.6)

Do not make any changes to the Operating System configuration, or install hardware or software program boards different from those supplied with the machine, unless you have request and received authorisation from SCM Group S.p.A. relative Assistance Centre.

Great care must be taken for example of network connections and accessories consequently authorised by the various machine software and systems as well as when using any type of modem.
If necessary make an agreement with SCM Group S.p.A. Assistance Centre about ways of intervening that could even be carried out in close collaboration.

Any different operations not authorised and/or not complying with machine normal functioning requirements could compromise its regular functioning.

SCM Group S.p.A. do not assume responsibility for any errors, mishandling or inaccuracy that may occur during any installation or configuration not authorised. Therefore any consequent machine malfunctions will not be attributed to the machine itself.
Anyone who carries out such unauthorised operations must be aware that they could result in the warranty for these malfunctions being invalidated, therefore any resultant repairs will be the exclusive responsibility of the client.
SCM Group S.p.A. reserve the right to change for their use and consumption the configuration and software used, without prior warning and without any responsibility to the final client.

B.2 Residual risks

(u2412_1.0_ce_ftc_1.9)

IMPORTANT: Since you can gain access to the electrical panels in the electrical equipment without powering down, the tool which opens the electrical equipment must be handed over to the maintenance manager.

Any work that has to be done in the electrical equipment without powering down must be carried out by specialised electricians.

This machine is equipped with safety devices which comply with the best available in the safety sector. These safety devices are effective if used correctly and maintained. Although all safety regulations have been observed use of the machine in accordance with the rules indicated in this manual may still involve the following residual risks:

- Inverter fault: the tools may keep rotating even with the machine switched off or in the emergency state
- Contact with tools at a standstill.
- Ejection of the workpiece or parts of it (e.g.: due to incorrect workpiece locking and/or machining waste)
- Ejection of tools or parts of them due to: programming errors (e.g.: retrieval of incorrect tools), tooling (association of incorrect parameters with a given tool code), loading incorrect tool when requested directly by the machine, incorrect tool loading in the tool magazine (if present on the machine), incorrect tool mounting.
- Tool collisions with the worktable and/or reference stops due to programming errors.
- Fire resulting from an incorrect machine use in conjunction with an accumulation of shavings and/or dusts.
- Contact with hot parts with the risk of burns and/or scalding

B.2.1 Reasonably foreseeable improper use

(ux5-hde_1.0_b.2.1)

The following are considered improper use, therefore, they are prohibited:

- Use of the machine by persons who are not authorised, suitably trained operators.
- Use of the machine without the guards required or removal of part of the guards (the removal of fixed and movable guards and bypassing of safety microswitches is forbidden).
- Machining materials other than those for which the machine was designed and which are not indicated in this manual.
- Machining materials with dimensions different to those for which the machine was designed and which are not indicated in this manual.
- Use of the machine in environmental conditions other than those indicated.
- Using the machine and tampering with tools without following safety indications contained in this manual and not using PPE (Personal Protective Equipment)
- Using tools that are not indicated in the "Tools that can be used" chapter or whose dimensions are not compatible with technical characteristics.
- Making modifications to the machine (executing modifications forfeits the Conformity Declaration of the machine and, before placing the machine in service once again, the owner must obtain a new Conformity Declaration).
- Carrying out maintenance operations without shutting off the machine and cutting the electric and pneumatic power supply
- Carrying out lubrication operations with spray without using personal protective equipment for eyes and respiratory airways (goggles / masks).
- Leaving the machine unattended while in operation or powered
- Entering inside the protected area of the machine without using the specific access routes
- Entering inside the protected area of the machine and restarting it by coordinating with a second operator

The user is the only party responsible for damages resulting from improper use.

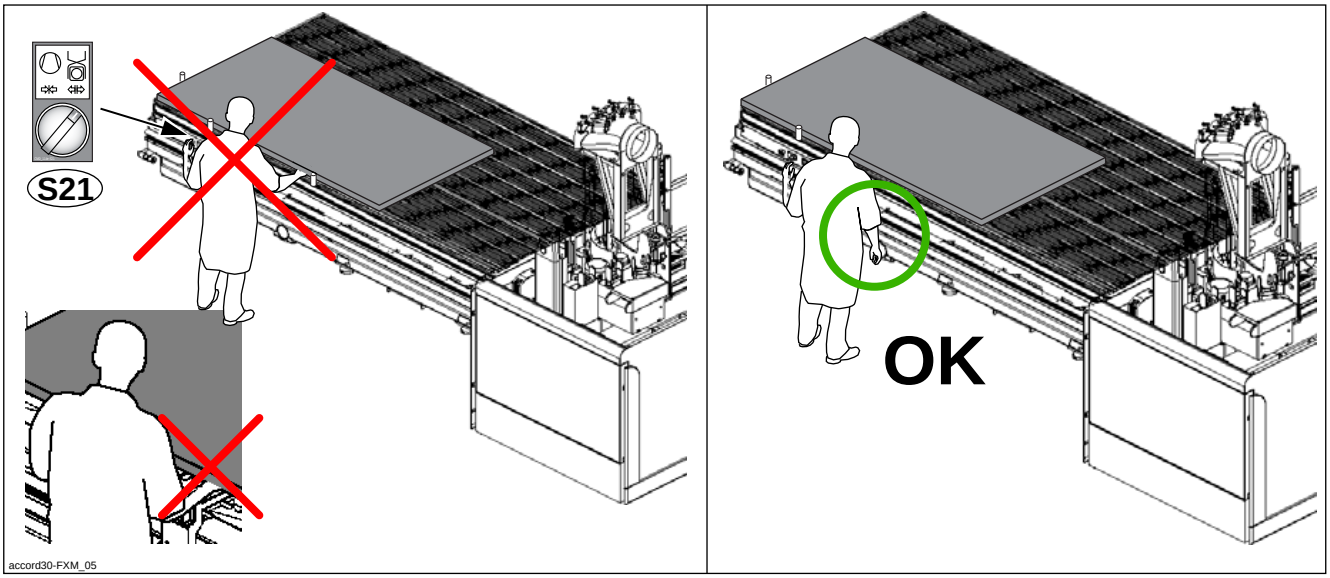
B.2.2 Residual risks after electric blackout

(acc-30-fxm_1.0_b.2.2)

In case of "black-out" (sudden electrical cut-out), stay off of the operator units, because the tools may continue rotating for an undetermined period of time due to their weight and rotary speed.

The frequency converter "blocks" (failure): the electric spindle is no longer controlled by the frequency converter and the tool continues to rotate by inertia, DO NOT APPROACH THE OPERATOR UNIT!.

After an electric blackout it is not possible to know with precision, in which cycle phase the PLC/machine connection was interrupted.
For this reason the release of the piece from the work surface must be carried out without supporting it, because the activation of the release control (S21) could cause unforeseen movements (lifting of the stops, etc.)



B.3 Safety signs and plates - Position

(u2412_1.0_ce_ftc_1.4.2.1_inp)

NOTE: The signs and plates must be inspected and cleaned regularly to keep them clear and legible.

If the signs and plates are not clearly legible, contact the manufacturer for their replacement.
In case of replacement, operate as follows:
- Remove the old sign or plate.
- Clean the area with detergent.
- Fit the new sign or plate, respecting the position and orientation of the old one.

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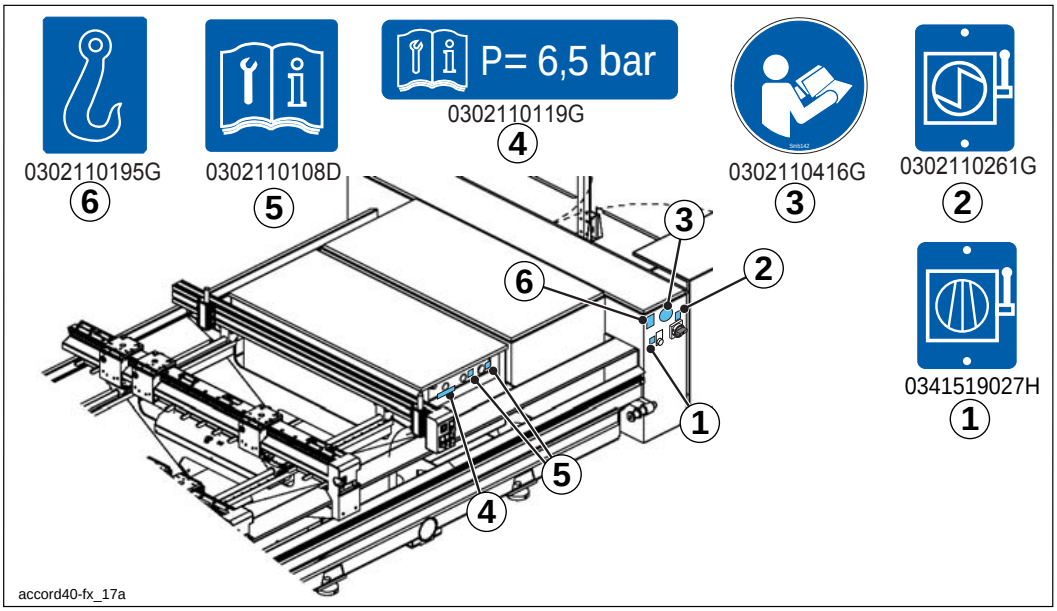
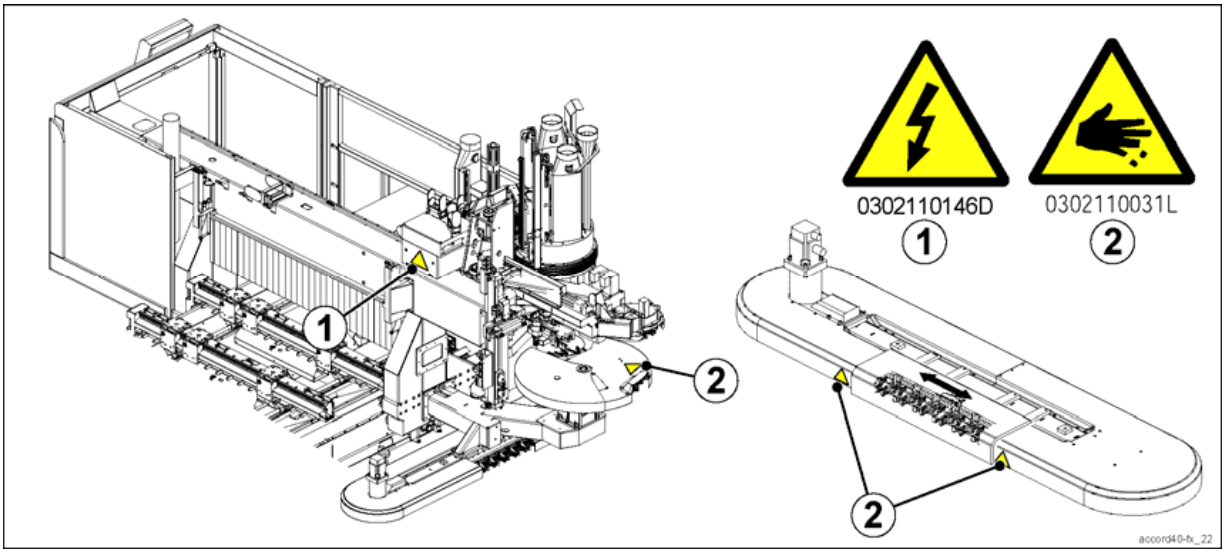
(acc-40-fx_1.0_b.3a)

Stickers for the machine





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(acc-40-fx_1.0_b.3)

Stickers for electrical cabinet

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0302110282B (EN-ES-PT-NL)
0302110283D (EN-SV-DK-NO)
0302110284H (EN-FI-PL-LT)
0302110285F (EN-GR-CS-SK)
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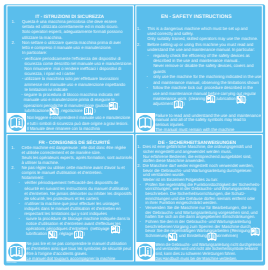
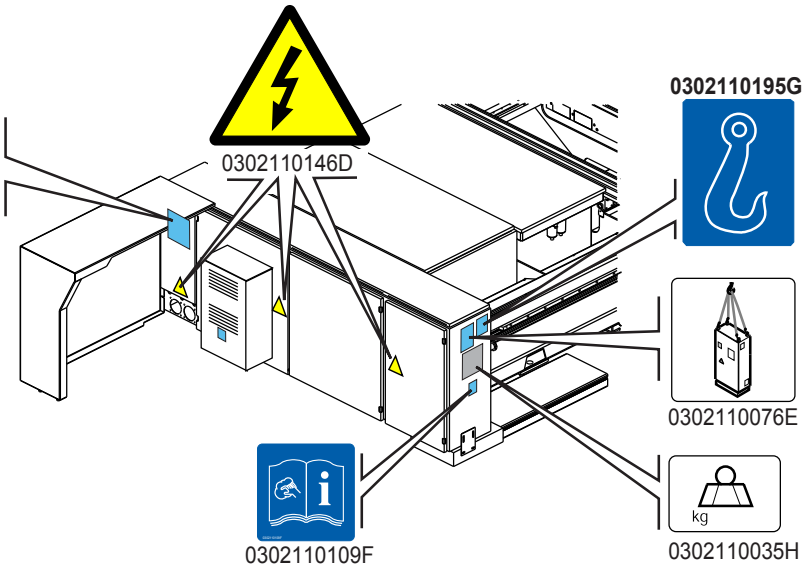
0302110287C (EN-IT-HU-RU)





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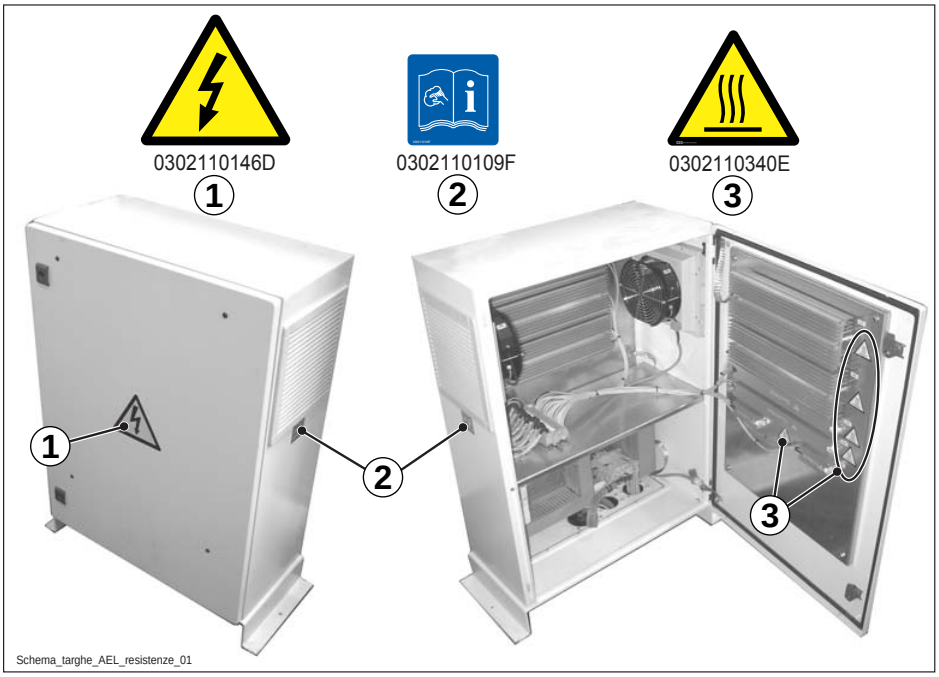
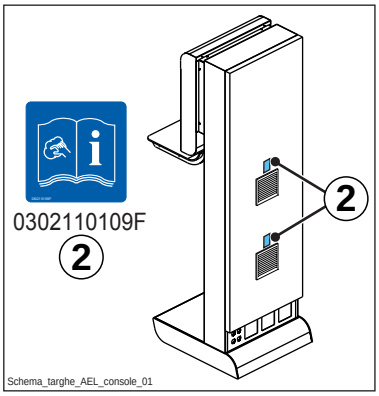


Schema_targhe_AEL_resistenze_01



Schema_targhe_AEL_console_01

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(sp_210mm)

INDEX

C.1 Safety devices description

(acc-30-fxm_1.0_c.1)

The emergency devices make the machine safe in case of irregular conditions and allow the user to block at the right time the machine functioning in case of danger or event.

The emergency devices are always active whatever mode the machine is working in.

The safety devices make the machine safe in case of irregular conditions.

"Safety devices" refer to all those safety measures that enable the machine to function without causing injury or damage. Safety measures consist in using specific technical measures to protect persons from any dangers that cannot reasonably be eliminated.

The machine is fitted with the following devices:
- Emergency push button "E01 - E02"
- Total guard A protecting the tool slide and the operating units so as to completely isolate the parts which move along the "Y" axis.
- bumpers "B" mounted on the sides of the guard to guarantee the maximum safety in the event of a collision with an obstacle.
- Safety photocell barrier C (PRO-SPEED)
- Splinter containment barrier "D" to prevent the ejection of workpieces or tools, or parts of them.
- Protective fence to prevent access to the rear and sides of the machine.
- Gates "F" to have access to the machine side and rear areas.
- Emergency cable "E03"
- Buzzer G that signals when the machine is turn on
- Luminous yellow indicator H to warn of the start-up of the (PRO-SPACE) machine

NOTE: The activation of an emergency (mushroom-shaped button / doors) cuts out the auxiliary supply to the machine, with the exception of:
- the vacuum pump
- the electrospindle cooling device (if available)
- the devices powered at 24VCC
- the shavings belt

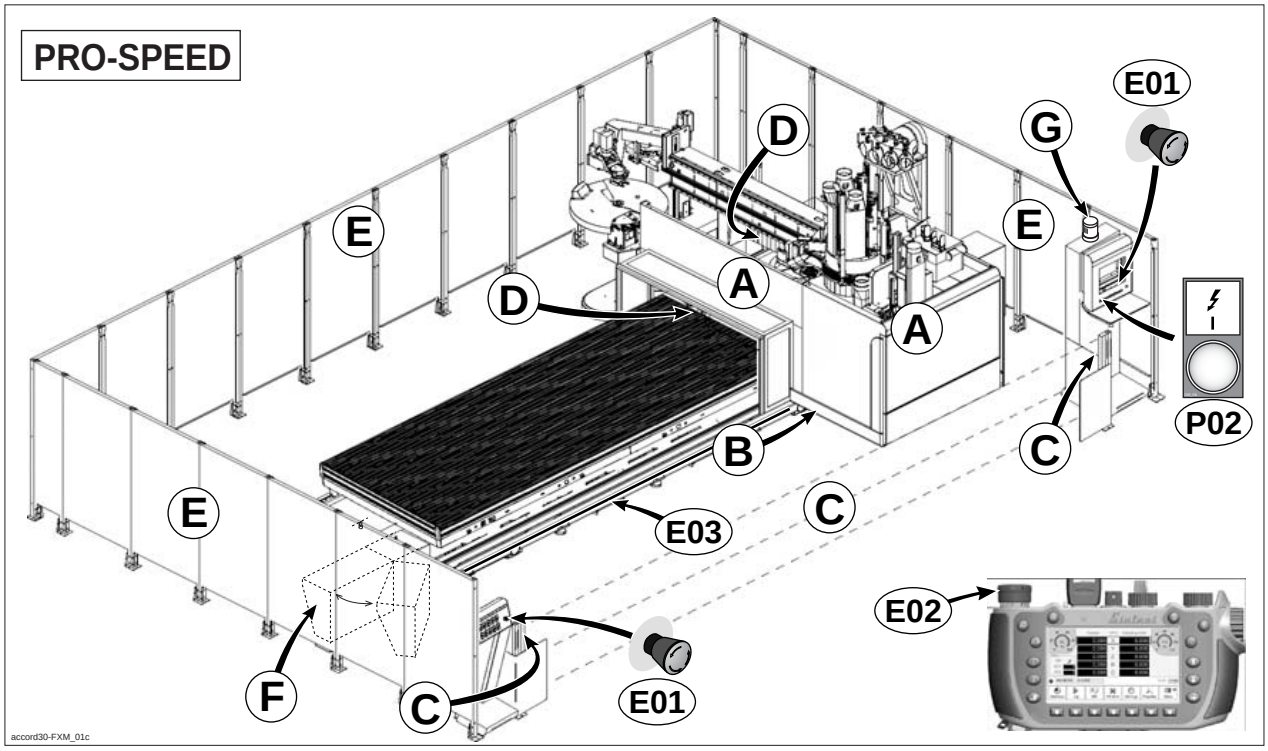
THE ELECTRIC CABINET REMAINS COMPLETELY POWERED ELECTRICALLY.
In particular, pay attention to "category 3" Inverter and Drivers (EN954-1 Standard) that do not have a remote control upstream.

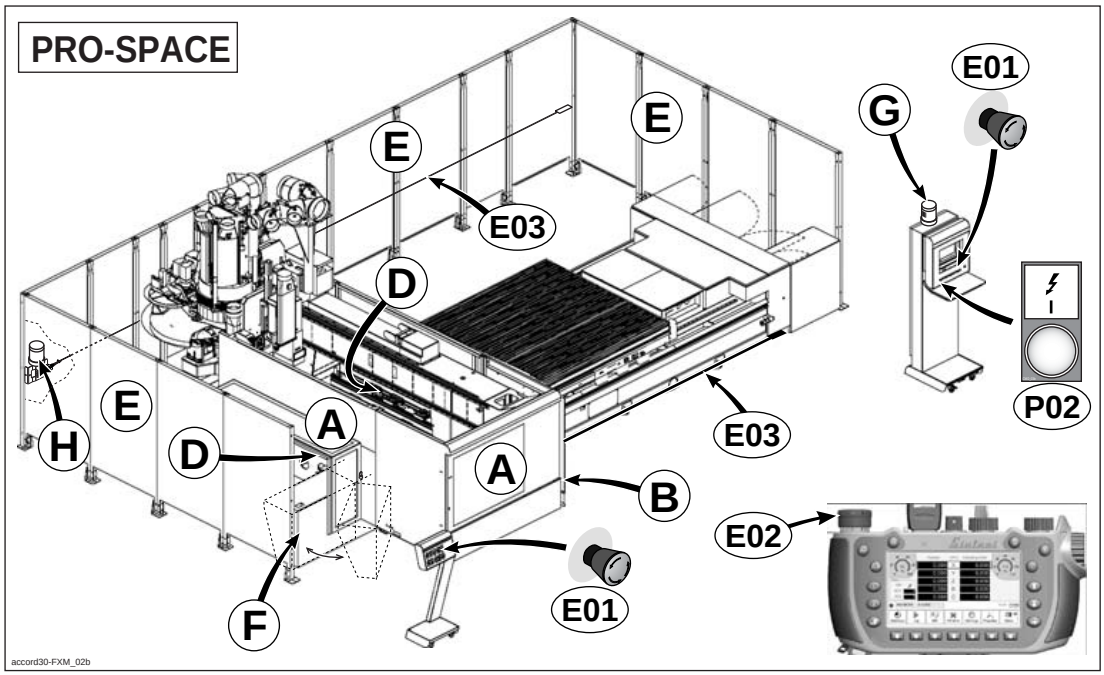
When an emergency is activated, the air is released automatically from the machine's pneumatic system: and when the machine is reset after an emergency, the pneumatic supply is activated automatically.

WARNING: DO NOT REMOVE OR DISENABLE SAFETY PROTECTION OR EMERGENCY DEVICES FOR ANY REASON. ALWAYS USE THE DOORS TO GAIN ACCESS TO THE FENCED OFF AREA AROUND THE SIDES AND BACK MACHINE AND DO NOT, UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS THE EMERGENCY SAFETY DEVICES.

PRECAUTION: IT IS EXTREMELY IMPORTANT TO REGULARLY CHECK THAT SAFETY DEVICES ARE WORKING PROPERLY ESPECIALLY IF THEY ARE NOT OFTEN ACTIVATED.

Periodic checking of the functioning of the devices is the task of the production and expert operator. Any faults must timely be reported to the person in charge.





This machine has been constructed to offer maximum safety, distinguished at the time of its construction, together with best performance. After a certain period of time (usually every 5 years) the machine and "state of the art" technology may well have become less safe over time, especially in terms of safety in the workplace environment if you compare it to current machines. We therefore recommend that you carry out a series of analyses (requiring the help of the manufacturer) in order to establish what repairs and updates need to made to the machine technology. If the machine has been sold to third parties, subcontractors etc. You are required to inform SCM GROUP of the name and address of the new purchaser so that the machine can always be traced.

Beeper

(ux5-hde_2.0_c.1a)
Whenever the machine is turned on at the white “P02” button, the buzzer G sounds intermittently for about 2-3 seconds.
In this way, the signal is given that the machine is live and ready for the cycle to start.

Luminous indicator (PRO-SPACE)

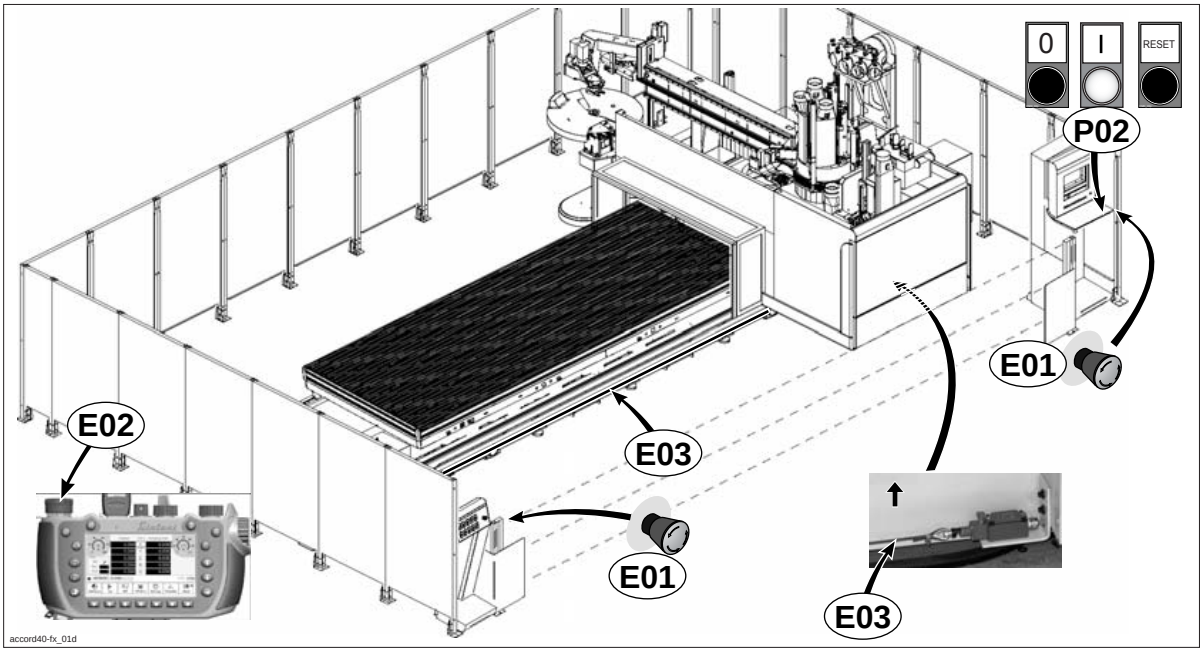
(a-m800_2.0-3.3_c.1b)
Each time the machine is started-up via the white "P02" button, the H indicator is switched-on for approximately 2-3 seconds.
In this way, the signal is given that the machine is live and ready for the cycle to start.

C.1.1 Mushroom-head emergency stop push-buttons

(acc-30-fxm_1.0_c.1.1)

The EMERGENCY mushroom-headed pushbuttons are located:
- close to the control panel - "E01"
- on the mobile pushbutton panel - "E02"

To stop the machine in an immediate danger situation, press one of the red mushroom-headed pushbuttons situated on the machine near all the work stations



WARNING: before starting to operate the machine you must identify the position of all the emergency pushbuttons, especially the ones closest to your work station

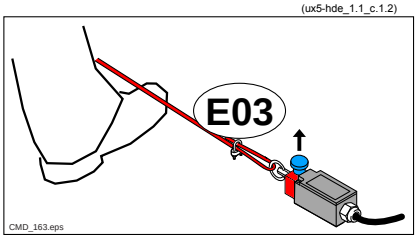
WARNING: When the operator has to execute controls or other operations on a machine, he has not to activate the buttons "E01 - E02", but he has to use the normal stop button "O" . This is necessary to avoid the frequent and inaccurate use of the safety buttons that can cause their deterioration.
WARNING: before restoring the machine and the CNC from emergency condition, verify that the cause for the emergency has been resolved.

To reset the machine after an emergency:
- reset push-button "E01" by turning it and reset "E02" by pulling it

- MAKE SURE NO ONE IS INSIDE THE FENCES
- Reset the CNC to exit emergency mode by pressing the “RESET” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

C.1.2 Emergency cable

(ux5-hde_1.1_c.1.2)



There is an “E03” emergency cord that the operator can activate with his feet in the event of an emergency when loading / unloading pieces.

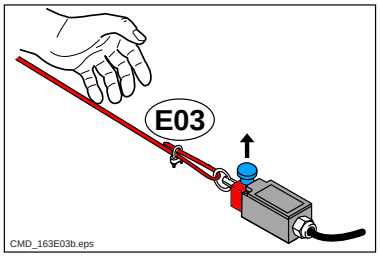
To stop the machine in an immediate danger situation, pull the emergency cord

WARNING: before restoring the machine and the CNC from emergency condition, verify that the cause for the emergency has been resolved.

To reset the machine after an emergency stop, proceed as follows:
- reset the microswitch by pulling push-button .
- Reset the CNC to exit emergency mode by pressing the “RESET” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

- -
(a-m800_2.0-3.3_c.1.2a)

PRO-SPACE

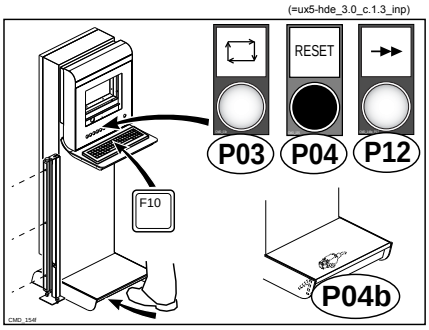


Behind the machine (inside the protective fences) there is an emergency cord - "E03".
To stop the machine in an immediate danger situation, pull the emergency cord

See the above indications to reset the machine.

Before resetting the machine from an emergency status occurs:
MAKE SURE NO ONE IS INSIDE THE FENCES
If the operator, by mistake, resets the machine with people inside the enclosure, these people will hear the start acoustic signal and seeing the luminous signal they are able to stop the machine by actuating the emergency rope.

C.1.3 Safety photocell barrier (PRO-SPEED)



The photo-electric safety barrier is in place to detect the presence of personnel in the loading / unloading zone where it is possible to come into contact with the moving carriage.

The operational logic can prevent the program in execution from being cancelled in this way:

1) The operator can "reserve" an opportunity to enter the photocells area using push-button "P12": its non-illuminated state indicates that the machine is prepared to work at low speed and photocell violation will not stop the machine as it continues working.
This means it is possible to access the operating area of the machine without stopping production and the sensitive components (the bumpers) guarantee a high level of safety by putting the machine in emergency mode in the case of contact.

2) Violation of the photocells with push-button "P12" illuminated (high-speed operating mode) stops the machine without generating an emergency or cancelling the program in execution. In this condition the video messages appear:

- OPERATING SHUTDOWN
- RESET PHOTOCELLS

Once violated the photocells field, it is necessary to reset the photocells at operational zone output using buttons "P03 - P04b" .

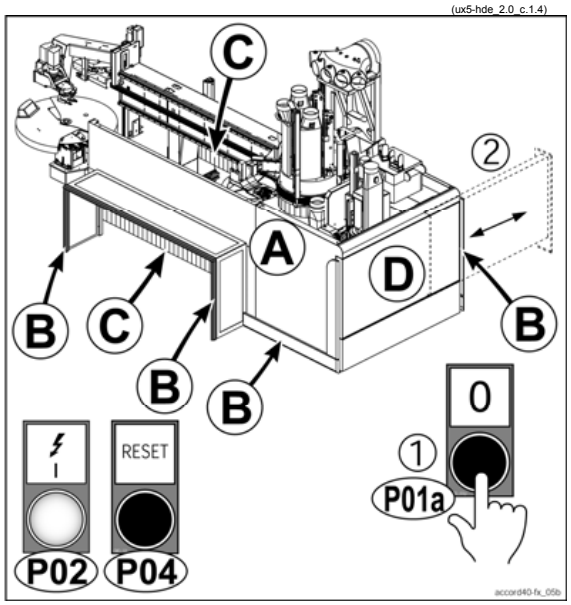
The photocells have to be activated at the same time in order to be reset. LED "P12" should turn on after the buttons are pressed.
The full machine operation is in this way restored.

ATTENTION: THE PHOTOCELLS MUST BE RESET OUTSIDE THE OPERATING AREA OF THE MACHINE AND IT IS FORBIDDEN TO TRY RESETTING THE MACHINE INSIDE THE OPERATING AREA OR HAVE IT RESET BY SOMEONE ELSE WHEN YOU ARE INSIDE THE PROTECTED AREA.

The consoles and photocells must be fixed to the ground during the testing process: refer to the layout plan.

(sp_210mm)

C.1.4 Machining unit cover



The purpose of the protective devices of operating unit A is to prevent the ejection of material (chips, shavings) out of the work area and to prevent the operator from being trapped by the moving carriage.
Mounted at the sides of the cover are the sensitive bumpers B that protect the operator in the piece loading / unloading area against the risk of being trapped by the moving carriage: activation of the sensitive bumpers puts the machine instantly in emergency mode.
To reset the machine after an emergency:
- Reset the CNC to exit emergency mode by pressing the “P04” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).

WARNING: always check the efficiency and good state of the operator unit guards. The integritty of this device is FUNDAMENTAL for the safety of persons and things.

On the front of the cover is a door with window that can be opened to check the processing.

IMPORTANT: you must replace parts made from POLYCARBONATE every 5 years.
ATTENTION: the use of lubricants during work causes a premature deterioration of the mechanical features of the plastic materials. It is essential for the operator's safety to replace the front door D at least EVERY 2 YEARS.

To open the door, one needs to first stop the machine or put it into emergency mode (at the P01a button) and then slide the door towards the right: it is only possible to open the door when the electrospindle is at standstill.

It is not possible to turn on the machine when the door is open.

Mounted under the cover are flexible screens C made of a special material that are flush with the worktable.
In TEST mode(see Xilog Plus manual) the curtain lifts up to allow you to see the movements of the mach= ining heads better.
To lift the screens in MDI or Manual mode, use the M codes in the ISO field: M177 = down; M178 = up

IMPORTANT: always keep the state of the flexible curtain under control . If the curtains are torn, cut or scraped you must replace them.
To use ONLY SCM original spare parts.
Failure to carry out the operations described above puts the operator at risk of accident and injury.

WARNING: DO NOT, UNDER ANY CIRCUMSTANCES ATTEMPT TO BYPASS THE EMERGENCY SAFETY DEVICES.

C.1.5 Perimeter Barriers

(acc-30-fxm_1.0_c.1.5)

The perimeter barriers E block access to the rear part of the machine when it is on, ensuring that dangerous zones are not reached.
They also protect from any material ejection (tool parts or parts of machined workpieces) from the work zone.
To have access to this area of the machine, use the door F .

WARNING: It is strictly prohibited to proceed beyond the perimeter fencing without using the appropriate door "F".

It is possible to open/close the doors only by using the safety key micro lock/unlock.

When you need to accede to the interior across the perimetral protections you must:
- Use the key-operated switch S05 to release the microswitch on the door and open the latter.
- Pull out the key from the door and KEEP IT WITH YOU.

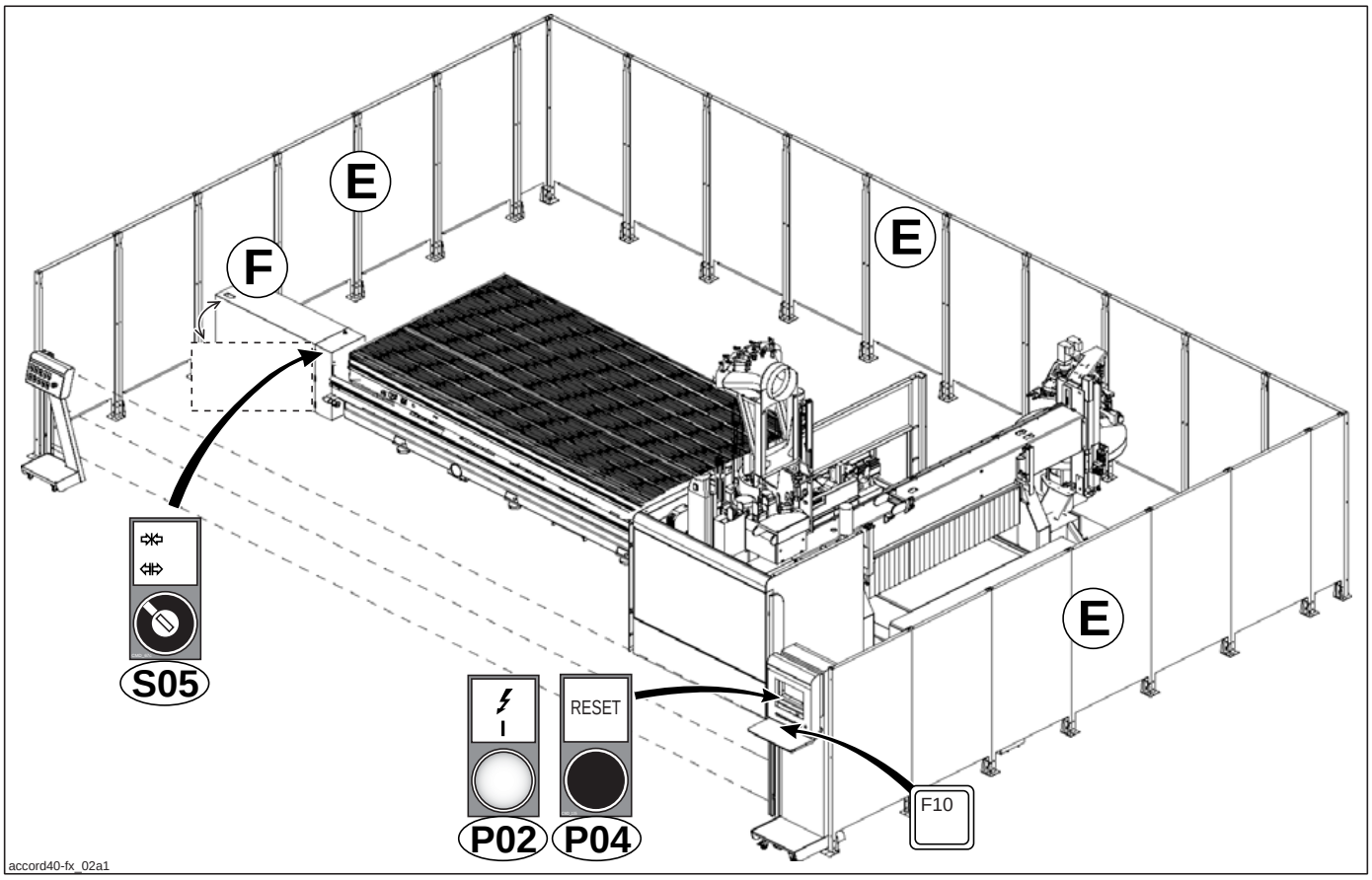
The key has to be handled by the personal that accedes to the interior across the protections.
We suggest you this to avoid that somebody,not noticing the eventual presence of personal inside the protections,closes the doors and re-starts the machine.

The release of the micro switch for the opening of a door activates the machine's emergency status.

Once the cleaning/maintenance/equipping operations have been completed exit the perimeter barriers.
To reset the machine after an emergency:

- MAKE SURE NO ONE IS INSIDE THE FENCES

- close the wicket to reset the micro
- **Lock the door by turning the switch to =>|<= : it is not possible to turn on the machine with the switch in position <=| |=>, even if the door is closed.**
- Reset the CNC to exit emergency mode by pressing the “P04” button or the F10 function key (on the keyboard).
- reset the emergency condition by pressing push-button "P02" for at least one second (until it comes on).



attention: verify systematically the efficiency and the condition of the perimetrical devices. The integrity of this device is FUNDAMENTAL for safety of persons and objects.

C.1.6 Testing safety devices

(a-m800_3.3_c.1.6)

Use the following table as support to check the Safety Devices

DEVICE	FREQUENCY	MODALITY	CONDITION OF THE MACHINE	CORRECTIVE ACTION in case of anomaly	REF. CHAP.
Mushroom-head emergency stop push-buttons	daily	Pressing the mushroom-head push-buttons the machine is had to arrest in EMERGENCY. To try all the push button.	I ON	Switch off the machine, to lock with padlock the power supply, contact the assistance center DON'T USE THE MACHINE	C.1.1
Emergency cable	daily	To pull the cable: the machine is had to arrest in EMERGENCY.	I ON		C.1.2
Safety photocell barrier	to every starting	Verify that: 1) with the "P12" button not illuminated and photocells violation, the machine reduces the mobile bridge speed 2) with the "P12" button illuminated and photocells violation, the machine stops	I ON		C.1.3
Operator unit guards	daily	To verify the integrity and the good state of the Operator unit guards. Particularly to verify the perfect integrity of the flexible curtains. The transparency of the curtains is index of their integrity. The curtains must not have made yellow (sign of old age)	O OFF		C.1.4
Bumpers	to every starting	To verify that pusing the bumpers, the machine him stops in Emergency	I ON		C.1.4
Perimeter Barriers	daily	To verify the integrity and the good state of the Perimeter Barriers	O OFF		C.1.5
Perimeter Barriers	daily	Turn the key of the perimeter fence door/doors and check that the machine him stops in Emergency	I ON		C.1.5
Interblock	daily	Verify that the opening of the door of the perimetral barriers or unit cover, it is possible only with electrospindle in stop (not in rotation)	I ON		C.1.4 C.1.5
Beeper	to every starting	Verify that at the lighting of the START button (P02), sound the beeper	I ON		C.1
Bright signaller (PRO-SPACE)	to every starting	Verify that at the lighting of the START button (P02), the yellow bright lamp ignites it	I ON		C.1
Pictograms / safety adhesive plates	weekly	To verify the integrity and the visibility of all the pictograms on the machine	O OFF	To handle their substitution	C.1.6

Tab_verif_disp_sic_BPS+FTC+fune_LUM-2010_EN_4.doc

IF FAULTS ARE FOUND: switch off the machine, padlock all power supplies (electricity, compressed air) OFF, discharge the compressed air system and contact the service centre.

IF FAULTS ARE FOUND DO NOT USE THE MACHINE

C.1.7 Spare parts which affect operator health and safety

(ricambi di sicurezza)

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.

If a malfunction is detected, the user must contact the Assistance Centre authorised by SCM Group.

Never attempt any work on the devices unless otherwise indicated in this manual

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

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

Safety-related work which the User can carry out independently:
- substitution of air filters for electrical cabinet ventilation;
- cleaning of conditioning unit(s) for the electrical cabinet(s);
- substitution of worn safety pictograms (see section on "Safety signs and plates - Position").

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.

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

(sp_210mm)

INDEX

D.1 Units tables

(a632_1.0_ce_bps_1.4.3)

UNIT OF MEASUREMENT			Conversion S.I.
kg	Kilogram Weight	Weight	9,807N
mm	Millimetres	Length	$1x10^{-3}$m
m/sec	Metres/second	Speed	m/s
m/min	Metres/minute	Speed	1/60 m/s
Rpm	Revolution per minute	Speed of rotation	2Ð :60 rad/s
NL	Normal litres	Volume	
cm^3	Cubic centimetres	Volume	$1x10^{-6}$ m^3
mm^2	Squared millimetres	Area	$1x10^{-6}$ m^2
kw	Kilowatt	Power	$1x10^3$ w
Hz	Hertz	Frequency	Hz
V	Volts	Electric voltage	V
A	Amperes	Current intensity	A
g/sec	Grams/second	Tools balance	$1x10^{-3}$ kg/s
m^3/h	Cubic metres/ hour	Capacity	$m^3/3,6x10^3$ s
m^3/sec	Cubic metres/second	Capacity	m^3/s
Pa	Pascal	Pressure	N/m^2
bar	Bar	Pressure	$1x10^5$ N/m^2
°C	Celsius degrees	Temperature	K
dB	Decibel	Sound pressure	
N	Newton	Force	
Nm	Newton metre	Torque	
Hp (CV)	Horsepower	Power	735,49 W
Lux	Lux	Illumination	lx

D.2 Environmental conditions

(ux5-hde_1.0_d.2)

The required environmental conditions are:
- humidity: max 90%
- temperature with machine running: Min. + 10°C ; Max + 35°C
- temperature with machine off: Min. + 5°C ; Max + 35°C
- altitude: max 1000 m a.s.l. (beyond this height consult the manufacturer)

Sufficient lighting must be provided, general or localised at the workstation, min. 500 LUX

A clear working area around the machine is fundamental for safety: the floor must be flat (a cement industrial floor), well-kept and free of material, e.g. shavings, scraps, etc.
The machine is designed for use indoors in industrial environments.

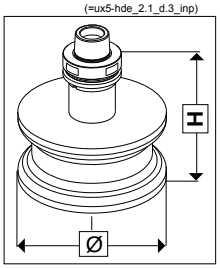
- The machine cannot be placed in service in environments classified as potentially explosive according to European Directive "99/9/CE".

D.3 Max tool dimensions

Using tool sizes that are not compatible is strictly forbidden.

When choosing a tool, check that the weight is compatible with the tool magazine capacity too (see chapter 10) and that the rotation speed is supported by the spindle specifications (See the chapters "Technical Characteristics" of the operating groups).

(=ux5-hde_2.1_d.3_inp)



D.3.1 Maximum tools dimensions with 3 axes electrospindle

(dimens-utens-em_45c-49b-47_3.4)

Electrospindle with shavings conveyor device (pallet):
Ø max 220 mm
H max 250 mm

Machine with tool room type Rapid 16 / Rapid 24 / Catena 48 :
Ø max 350 mm
H max 300 mm

Machine with tool room type Rapid 12 On Board :
Ø max 230 mm
H max 230 mm

Machine with tool room type TR10 - TR12 :
See chapter Q7.2

D.4 Dimensions of piece that can be processed

(=ux5-hde_1.0_d.3a_inp_no-pbct)

Pieces being processed must fall within (X - Y) dimensions of the work top that are defined in the "General technical data" - "Work field dimensions" chapters and in dimension (Z) for panel passage which is defined in chapters "General technical data" - "Z axis strokes"

D.5 General Technical Characteristics

(m600-x5-tv_1.3_d.5)

GENERAL TECHNICAL SPECIFICATIONS		
Dimensions of the worktable (between the stops) X-Y: Refer to section “Work range dimensions"		
Stroke of "X" - "Y" axes: Refer to section “Work range dimensions"		
Ref Stroke of "Z" axes: Refer to section ""Z" Axis Stroke"		
Programmable speed on "X" axis (PRO-SPEED)	m/min	90
Programmable speed on "X" axis (PRO-SPACE)	m/min	25
Progammable speed in "Y"-axis	m/min	90
Progammable speed in "Z"-axis	m/min	30
Vector speed (X-Y)	m/min	60
Panel feed : Refer to section "Z" Axis Stroke"		
Overall weight with electrical equipment: Refer to layout plan (section on Overall Dimensions)		
Sound power according to standards ISO / EN : See chap. "Noisiness level"		

ELECTRIC TECHNICAL SPECIFICATIONS		
Motor power of drilling head : see specific chapter		
Electrospindle power and/or optionals machining units	kW (Hp)	See specific chap.
Motor power of dust conveyor(1)	kW (Hp)	0.18
Standard power supply	V / Hz	400 / 50-60
Electric connecting cables = 3 Phases + Neutral + Earth		
Rated current in Amps: Refer to the machine’s identification plate (section on Machine Identification)		

(1) Technical data: see motor data plate
Excluded from energy efficiency constraints of Commission Regulation (EC) No. 640/2009

TECHNICAL SPECIFICATIONS compressed air supply and extraction		
Compressed air supply	Bar	6,5
Medium consumption of compressed air	Nl/min	400
Istantaneous max. consumption of the compressed air	Nl/min	1000
Sawdust/shavings extractor		Refer to section E

. Specifications for the compressed air system
(=caratt-aria-compr_1.0_inp)

IMPORTANT: Make sure that: - the compressed air supply equipment is free from condensation and deposits (emulsified oil, scaling).

- the compressed air supply pressure is at least 7 bar.

- that the hoses and piping of the compressed air secondary distribution network have a diameter of 3/4" gas (approx. 27 mm).

- the connecting pipe from the distribution system to the machine have to be with 14mm. internal diameter and it has not to be longer than 10m

Note: the infeeding pipes long from 10m to 30m have to have 16 mm internal diameter.

- In particular, the compressed air generating system must provide the following air quality characteristics*:

- MAX size of the particles = 5 microns

- Max number of solid particles per m^3 = 500

- Max oil content = 5mg/m^3

- Dew-point = + 3°C

****If you have any questions, please contact the compressed air generating system manufacturer.***

D.6 Noisiness level

(ux5-hde_2.0_d.6)

Working conditions: Drilling (in compliance with EN 848-3E)					
Quantity measured description		Reference standards	Uncertainty K (probability 68,27%)	Drilling	
Lop : level of sound pressure at operator stations - dB (A) and peak level [db(C)]	**Operator position**	EN ISO 11202:1995	5.0	**VSA**	**LAV**
	Infeed			72,2	74,6 [95,2]
	Outfeed			/	/
Lw : level of sound pressure issued : $dB(A)_{re\ 1\ pw}$ [mW(A)]		EN ISO 3746:1995	4.0	90,5 [1,12]	93,5 [2,24]
The maximum value of the instantaneous acoustic pressure, C-weighted , is less than 130dB(C)					
VSA No machining without dust extractor equipment		**LAV** Machining with dust extractor equipment			

Working conditions: Routing (in compliance with EN 848-3E)					
Quantity measured description		Reference standards	Uncertainty K (probability 68,27%)	Routing	
Lop : level of sound pressure at operator stations - dB (A) and peak level [db(C)]	**Operator position**	EN ISO 11202:1995	5.0	**VSA**	**LAV**
	Infeed			74,3	80,7 [96,6]
	Outfeed			/	/
Lw : level of sound pressure issued : $dB(A)_{re\ 1\ pw}$ [mW(A)]		EN ISO 3746:1995	4.0	89,6 [0,91]	97,9 [6,17]
The maximum value of the instantaneous acoustic pressure, C-weighted , is less than 130dB(C)					
VSA No machining without dust extractor equipment		**LAV** Machining with dust extractor equipment			

NOTE:

The noise values are emission levels and not necessarily safe working levels.

While there is a correlation between emission levels and exposure levels, this is not a reliable parameter for determining whether further precautions should be taken.

The factors which influence the real exposure of the operator include the duration of exposure, environmental features, other sources of emission, e.g. number of machines and other adjacent machining operations.

The exposure level regulations may vary from country to country.

This information should however make it possible for the machine user to make a better assessment of the hazards and risks involved.

EAR DEFENDERS: use when the material being machined or the machining conditions raise the noise level above 80db.

Certain factors that positively affect machine noise level are:
- correct choice of tool
- correct selection of speed
- maintenance of tools and machine

D.7 Overall Dimensions

(prgrf_d.7_layout-specifico)

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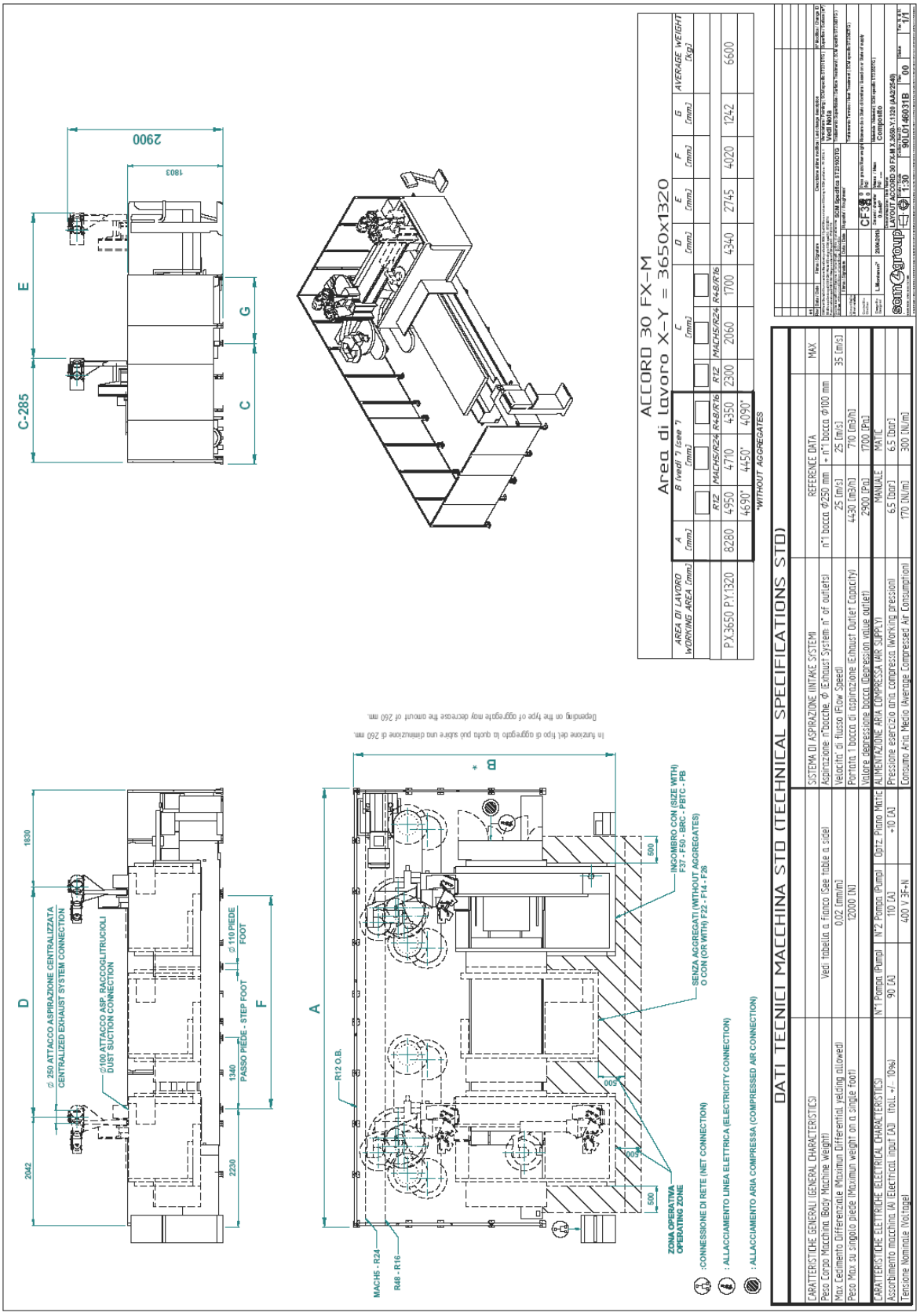
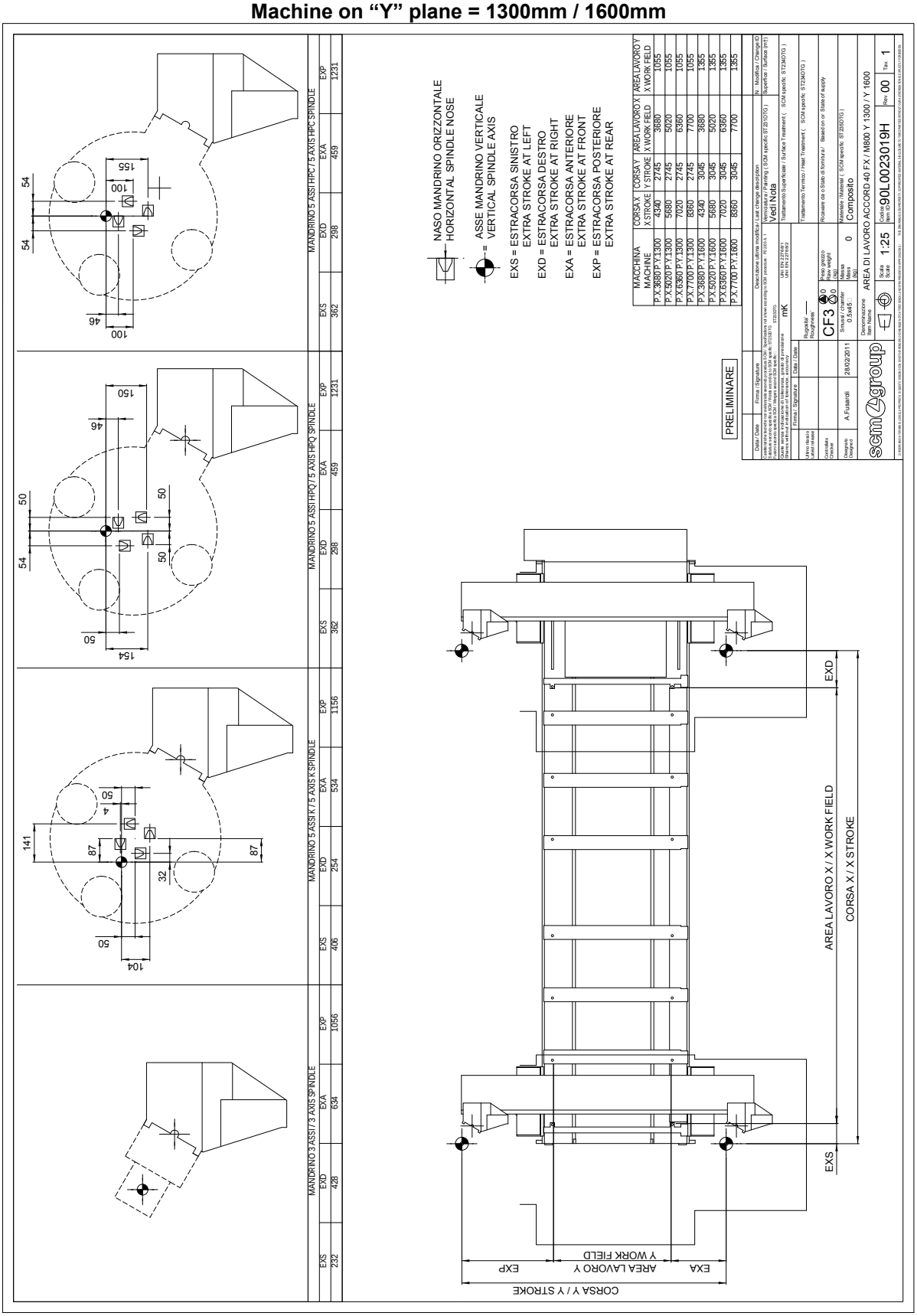
(a-30fxm_3650x1320_pro-space)



D.8 Work range dimensions

(acc-40-fx_2.0_d.8_y1300-1600)

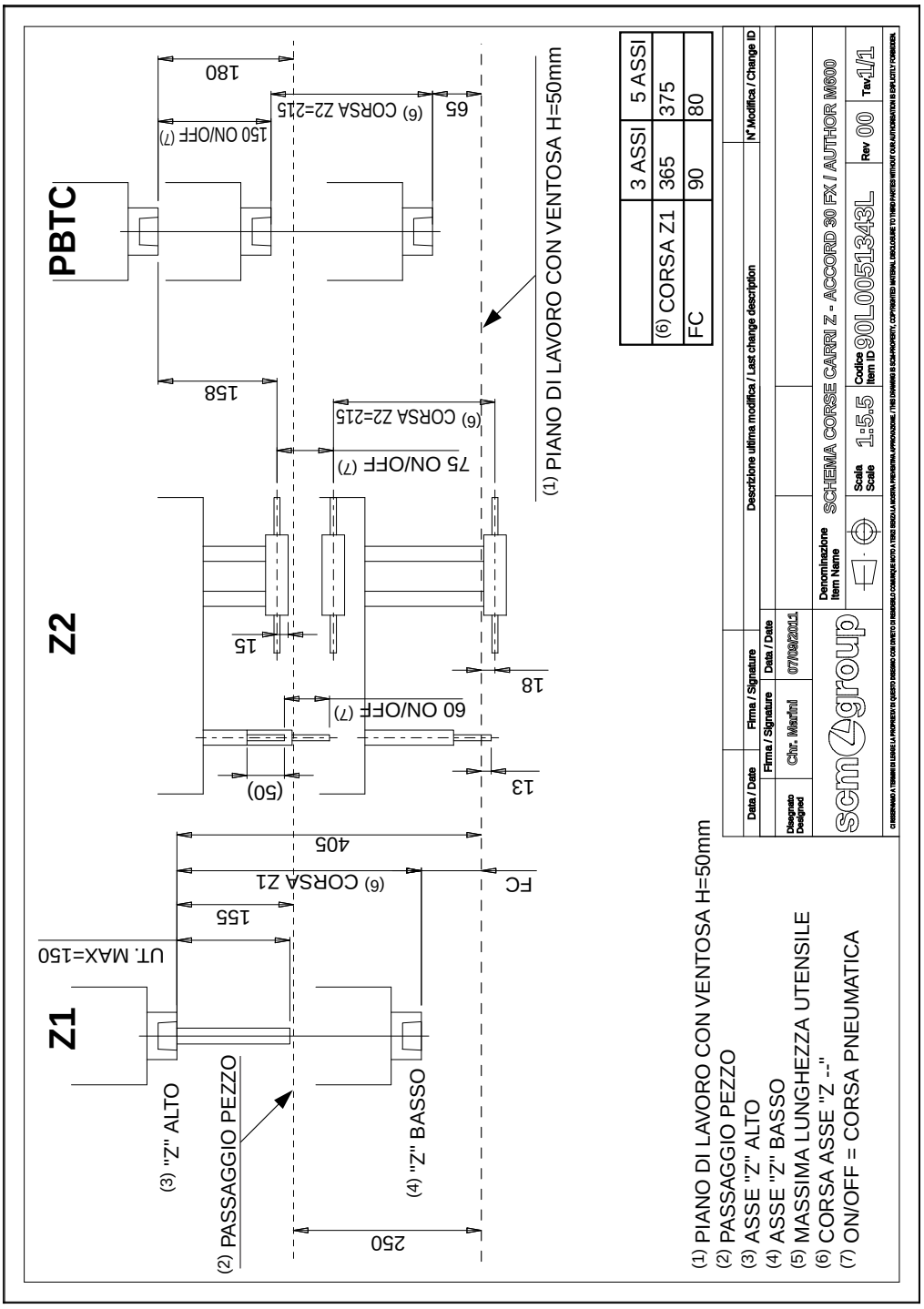
Machine on “Y” plane = 1300mm / 1600mm



MACCHINA / MACHINE	CORSA X / X STROKE	CORSA Y / Y STROKE	AREA LAVORO X / X WORK FIELD	AREA LAVORO Y / X WORK FIELD
P.X.3680.P.Y.1300	4340	2745	3680	1055
P.X.5020.P.Y.1300	5680	2745	5020	1055
P.X.6360.P.Y.1300	7020	2745	6360	1055
P.X.7700.P.Y.1300	8360	2745	7700	1055
P.X.3680.P.Y.1600	4340	3045	3680	1365
P.X.5020.P.Y.1600	5680	3045	5020	1365
P.X.6360.P.Y.1600	7020	3045	6360	1365
P.X.7700.P.Y.1600	8360	3045	7700	1365

D.9 "Z" Axis Stroke

(m600-x5-tv_1.0_d.9)



(1) WORK TOP WITH SUCTION DEVICE H=50mm
(2) PIECE PASSAGE
(3) "Z" AXIS HIGH
(4) "Z" AXIS LOW
(5) MAXIMUM TOOL LENGTH
(6) AXIS "Z --" STROKE
(7) ON/OFF = PNEUMATIC STROKE

(sp_210mm)

INDEX

(sp_210mm)

E.1 Handling

(=ux5-hde_1.0_e.1_inp)

The machine must only be handled by qualified personnel.

To handle the machine, use a crane or a bridge crane
ensuring that the capacity of the lifting means is greater than the weight of the machine.

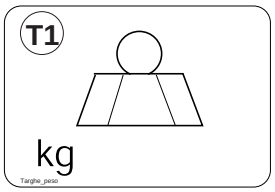
The weight of the machine is indicated on the metal identification plate on the frame (see chap. Machine Identification).

ATTENTION: When lifting, harnessing the machine with ropes or chains is absolutely prohibited (unless specifically indicated).

- When positioning the machine, avoid sudden, sharp movements.
- Check that the floor is type industrial, solid, stable, flat and made of cement: other types of floors are not recommended

Ensure that the load-bearing capacity of the floor is greater than the weight of the machine.

-
(u2412_1.0_ce_ftc_4.1a)
Before hoisting the machine remove all packaging material and components which were ATTACHED to the machine during transport. Check component weight before hoisting; component weight is shown on the plate (T1).



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(ux5-hde_1.0_e.1a)
For movement use:

- to lift the machine with pallet use a fork lift
- a crane or a bridge crane to lift only the machine (after take the pallet off the machine)

Avoid sudden hoisting movements. Great care must be taken to avoid brusque movements which might tip the machine dangerously.

No persons and things must be present in the area during the unloading and moving operations

Move the machine to its location.

The unpacking and installation operations must be carried out by personnel authorised by SCM Group S.p.A. . Once the machine has been unloaded and placed, wait for authorised personnel.

Once the machine is installed, keep all devices used for transportation (belts, brackets, etc...) for any future movements

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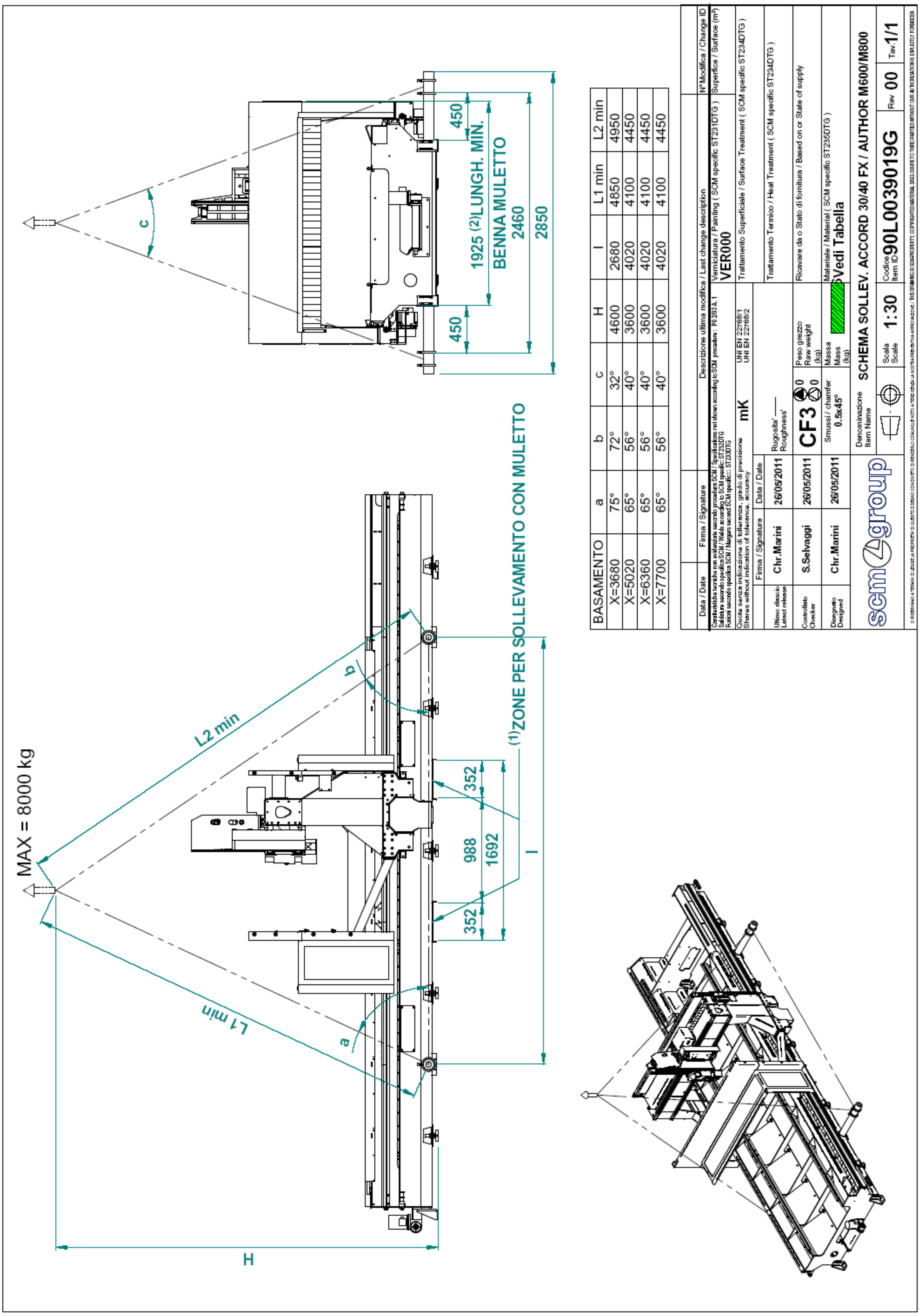
(gamma-2010_3.5_e.1b)



BASAMENTO	a	b	c	H	l	L1 min	L2 min
X=3680	75°	72°	32°	4600	2680	4850	4950
X=5020	65°	56°	40°	3600	4020	4100	4450
X=6360	65°	56°	40°	3600	4020	4100	4450
X=7700	65°	56°	40°	3600	4020	4100	4450

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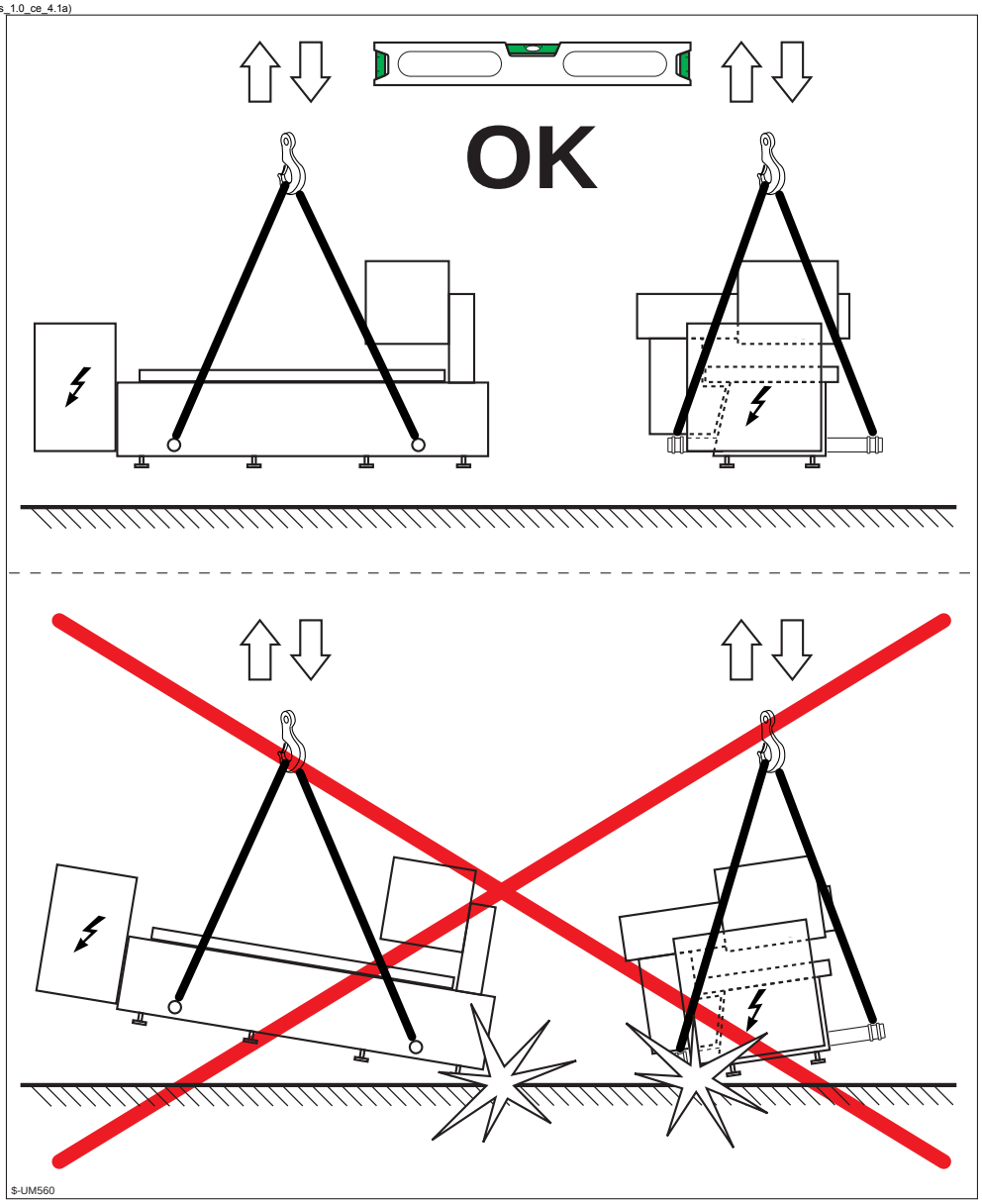
(u5722_nb_bps_1.0_ce_4.1a)



E.1.1 Packing / Storage

(ux5-hde_1.0_e.1.1)

Foreword:
On machines all moving parts are locked and all dismantled parts are fixed to the machine body, to the pallet (if used) or packed separately (e.g.: perimeter fence).

The type of machine packaging depends on the model, the means of transport used and the destination:
- Heat-sealed covering canvas
- Pallet
- Crate

For instruction on cleaning off protective coatings, see section "Cleaning the machine on receipt".

CAUTION: The packaging of the machine is directed only to its transport.
The possible warehousing has to be arranged in closed and dry places.
Control that, during the transportation, the machine is not damaged in the packaging coverings and that there have been no water infiltration. In this case the solution is to remove the packaging from the machine, dry carefully the wet parts and use a cloth lightly impregnated with neutral oil on the steel parts.

In case of prolonged inactivity disconnect the machine from the electrical and pneumatic system, clean it thoroughly and protect sliding guides and tool holder spindles with rust preventer. Do not store the machine in humid environments and protect it from atmospheric agents.

E.1.2 Handling the machine after installation

(a632_ceb1.0-4.1.2)

To move the machine after it has been installed, follow the procedure described in section "Removing the securing blocks and brackets" in reverse.

E.1.3 Cleaning the machine on receipt

(a632_ceb1.0-4.1.3)

Before packaging, the machine is given a protective treatment using rust-proofing products. When the machine is unpacked, these products must be removed with the aid of suitable degreasers which do not damage metal and plastic parts on the machine. In particular, all sliding parts and machining units must be carefully cleaned.

IMPORTANT: Never use solvents, especially flammable types (benzene, diesel, kerosene, etc.).
Take special care to prevent liquids entering the motors.

When you have completed cleaning, dry the parts with a clean cloth
a cloth dampened with neutral oil is suggested for the steel parts.

E.1.4 Positioning

(ux5-hde_1.0_e.1.4)

Place the machine in the best, well-aired and well-lit position (at least 500 Lux), which must be convenient for connection to the electrical, compressed air and chipping extraction systems.
Leave enough space around the machine to allow easy maintenance.

All of the doors of the electrical cabinet must be able to open fully

A clear working area around the machine is fundamental for safety: the floor (preferably in non-deformable material, a cement industrial floor is recommended) must be flat, well-kept and free of material, e.g. shavings, scraps, etc.

PRECAUTIONS:

The ground has to be di industrial type, stable and it has not to transmit vibrations of other machines.

The machine weight has to be evenly distributed on all feets .

INSTALLATIONS ON UPPER FLOORS ARE FORBIDDEN: UPPER FLOORS, BY THEIR NATURE, ARE FLEXIBLE AND TRANSMIT VIBRATIONS.

For the correct dimensions of the foundations, use the data set out in the General layout (chap. Overall Dimensions):

- overall weight of the machine body

- support feet layout

- maximum load on a single foot

- maximum acceptable differential settlement

See also the chapter "Environmental conditions"

E.2 Installing the Machine

(u2412_1.0_ce_ftc_4.3)

PRECAUTIONS

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer
- The machine must only be handled by qualified personnel

NOTE: Study the present use and maintenance manual before carrying out any operations on the machine

- Always check that the equipment to be used is in proper working order.
- Pay careful attention to adhesive labels (yellow=danger warning; blue=caution warning): they remind you how operations should be carried out, warn you of danger and prevent hazardous situations arising out of incorrect operations.

E.2.1 Environmental conditions

(ux5-hde_1.0_d.2)

The required environmental conditions are:
- humidity: max 90%
- temperature with machine running: Min. + 10°C ; Max + 35°C
- temperature with machine off: Min. + 5°C ; Max + 35°C
- altitude: max 1000 m a.s.l. (beyond this height consult the manufacturer)

Sufficient lighting must be provided, general or localised at the workstation, min. 500 LUX

A clear working area around the machine is fundamental for safety: the floor must be flat (a cement industrial floor), well-kept and free of material, e.g. shavings, scraps, etc.
The machine is designed for use indoors in industrial environments.

- The machine cannot be placed in service in environments classified as potentially explosive according to European Directive "99/9/CE".

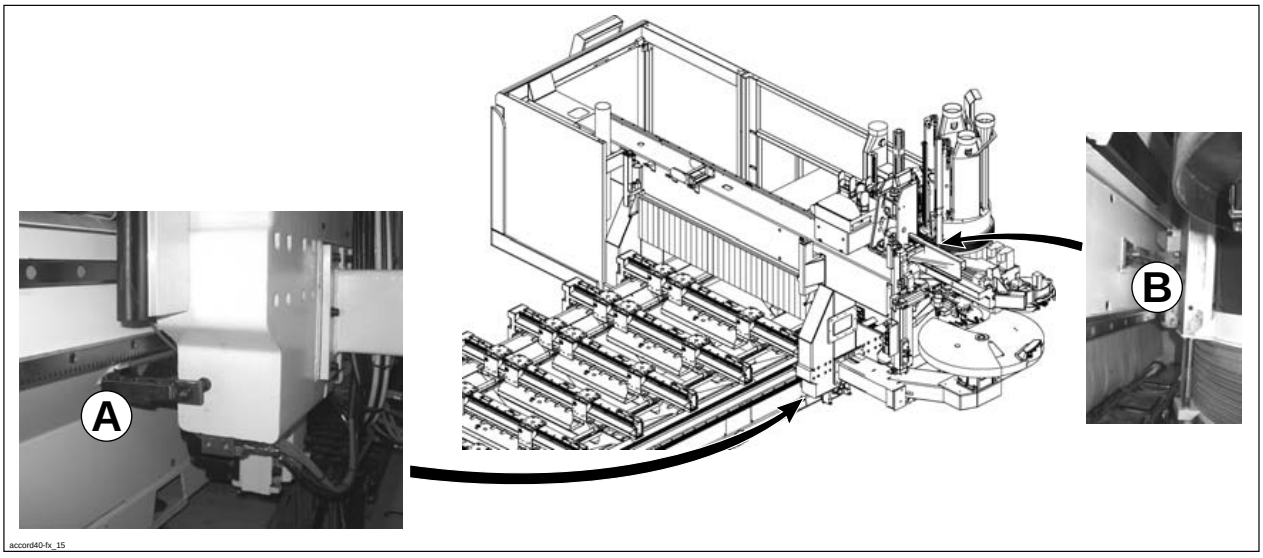
E.2.2 Removing the securing blocks and brackets

(ux5-hde_1.0_e.2.2)

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer

For greater security during transport the electrical cabinet and the tool carriages are fastened to the machine body using blocks and brackets.

After positioning the machine on the work location, these blocks and brackets should be removed as follows:
- Remove the securing brackets A - B



Check that all securing blocks, marked by the plate in figure , have been removed

TOGLIERE PRIMA DI METTERE IN FUNZIONE LA MACCHINA

TO TAKE OUT BEFORE PUT THE MACHINE INTO FUNCTION

Do not start up the machine before carryng out this operation.
Once the machine is installed, keep all devices used for transportation (belts, brackets, etc...) for any future movements

E.2.3 Assembling the dismantled parts

(a-m800_1.0-3.3_e.2.3)

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer

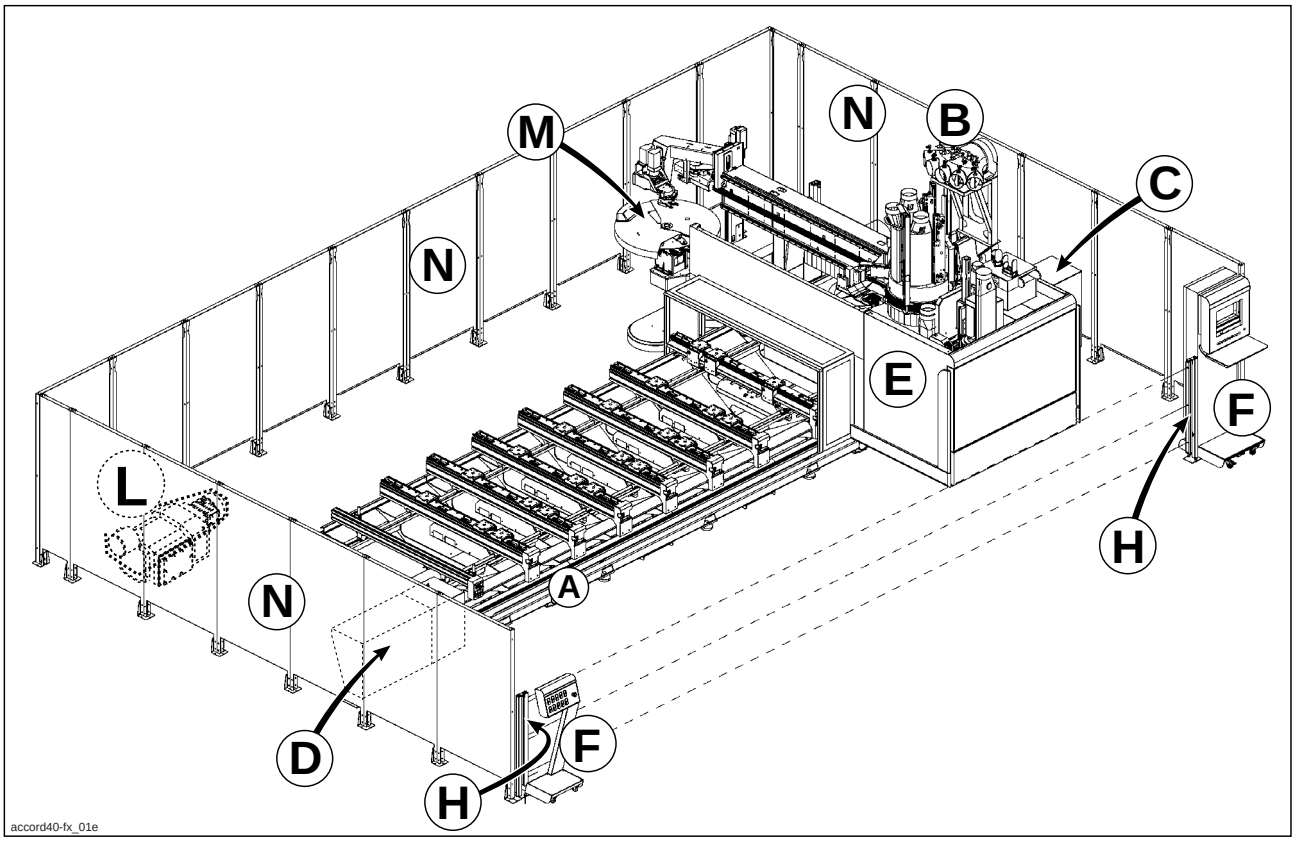
Considering the machine dimensions, the means of transport and the kind of packaging, some parts of the machine can be removed.

The installation of the dismounted parts comprises:

- Positioning of the consoles F THE CONSOLES MUST BE FIXED TO THE GROUND
- installation of the front carter A
- the collector's assemblage for the centralized dust extraction system B (if present)
- The mounting of the anti-climb guard C
- The mounting of the gate / anti-climb guard D
- the covering installation with E bumpers

PRO-SPEED - The positioning, fixing and connection of the photocells H THE PHOTOCELLS MUST BE FIXED TO THE GROUND
- the positioning and connection of L vacuum pump
- the installation of M rear tools-holder crib (if present)

- The mounting of the side protective devices N THE PROTECTIVE DEVICES MUST BE FIXED TO THE GROUND



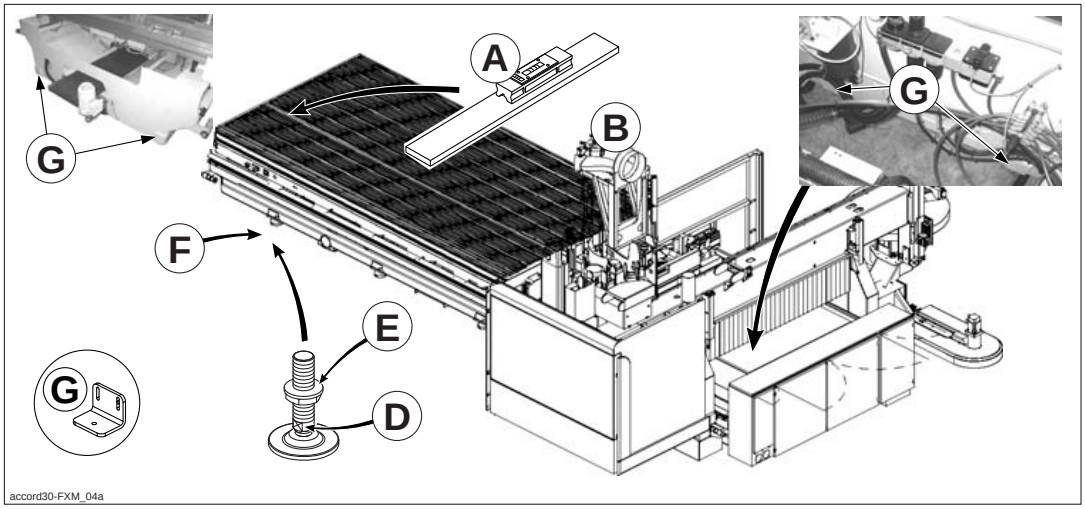
E.2.4 Levelling

(acc-30-fxm_1.0_e.2.4)

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer

For correct levelling, use:
- a precision level
- rectified bar
- a 16 mm open-ended spanner
- a 30 mm open-ended spanner

Place the the level A on the bar B and this on the working plane C.
To adjust the level, operate on the nuts D and, after adjusting tighten the nuts E.



NOTE: perfect levelling is obtained by trial and error, moving the levelling bar across and lengthways.
The maximum difference in level along the X-axis is 0.1mm/m
The maximum difference in level along the Y-axis is 0.1mm/m

To maintain constant precision during machining, the manufacturer recommends that you carry out a periodic (at least annual) control of machine levelling and, if necessary, perform levelling again.

E.2.4.1 Anchoring

(ux5-hde_2.0_e.2.4.1)

In order to obtain maximum rigidity and structural stability, the machine MUST be anchored to the ground.
This operation is necessary to maintain the levelling achieved during the installation over time.
On the sides of the basement there are the angular brackets G to anchor the machine to the ground (THIS IS A COMPULSORY OPERATION!): the constructor supplies the special fixing screws (cod. 2730810169A).

E.2.5 Electrical Connections

(acc-40-fx_rel.4.2_e.2.5)

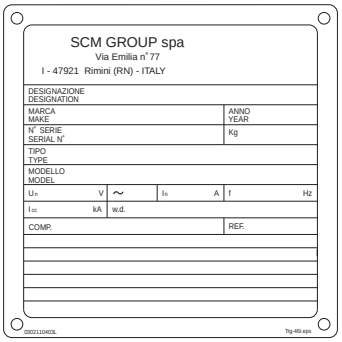
Attention: The electric connection and subsequent controls must be carried out by a specialised electrician (expert person "EP" and warned person "WP", according to standard EN 50110, IEC 11-27), referring to the wiring diagram supplied with the machine
- the machine can be directly connected to the electricity supply in the case of a TN-S supply with a voltage of 400V ±10% - 50/60Hz ±1%
- in all other cases, there must be a transformer/auto-transformer to bring the above conditions to the input terminals of the machine ON/OFF switch
- the adapting transformer/auto-transformer (needed for distribution networks not of the TN-S type and/or voltage levels differing from those indicated above) can be supplied by SCM Group S.p.A. (depending on the sale contract) or by the customer himself
- the best conditions are that the machine is supplied with the exact voltage as carried on the machine's identification plate.
- Check that your electrical line equipment is suitable for machine power supply requirements (refer to Table)
- use the rated current values (In) to calculate the cross-section of the electric cables

ATTENTION: consider that the cross-section of the power cables does NOT depend on the rated current alone, but also on the length of the installation and on the short-circuit current value.
Therefore consider the table only as indicative and first analysis. Whoever performs the electric connection for the final customer (see above for "expert person EP" and "warned person WP") must make the correct evaluations.
To simplify reading, the table only indicates the use of "fuses", but switches can be used as well as long as they have the same size.

The yellow-green earth cable must have the same section as the power cable wires and must comply with the current safety regulations of the country where the machine is installed.
N.B.: The mains power line must have a "neutral".

ELECTRICAL INPUT (AMPERE) A	WIRES SECTION mm^2	AM FUSE 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
110 --> 145	70	160
145 --> 170	95	200
170 --> 190	120	200
190 --> 230	150	250
230 --> 265	185	315

A



Voltage (Volt), current (I=amperes) are indicated on the machine's identification plate.
If the power supply is connected through a transformer, refer to the rating plate of the transformer.

If the customer runs the electrical power down from above, do not pass the power leads close to the monitor and PC.

Do not use the electrical cabinet supply walls as a support for fixing power leads.

CAUTION:

- the machine is not protected against risks of electrocution due to indirect contact (ref. 7.2 of the European Standard EN60204-1)

- The machine is not protected against overcurrent arising from a short circuit in the machine feeder (ref. 7.2 of European Standard EN60204-1)

The Customer is in charge of the protection against these risks, and must refer to specialised technicians (electrician who installs electric systems).

The machine power supply line must be protected by Residual Current Devices, suitably coordinated with the user's earthing system (ref. IEC 60364-4-41; HD 60364-4-41).

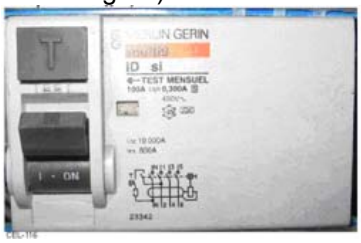
The maximum value of the differential intervention current is equal to 300mA for environments with a greater risk of fire (to ensure protection against fire caused by currents dispersed towards the ground).
For TN type systems, the system must be type TN-S with separate neutral and protective earth conductors (IEC 60364-4-482; HD 384.4.482)."

SCM Group machines provide the end-customer with a TN-S power supply. Under different situations, transformers (available as an option) or auto-transformers must be installed upstream the machine.
As standard of reference, see:

- IEC 60364-4-42: Low-voltage electrical installations – Protection for safety – Protection against thermal effects;
- IEC 60364-4-41: Low-voltage electrical installations – Protection for safety – Protection against electric shock;

Due to the experience gained by SCM Group and the checks performed on the various types of machines, we recommend using the following differential:

- Merlin Gerin (Schneider) model 23342 : Residual Current circuit breaker ID – 4 poles – 100A – class A Si 300 mA (selective, super immunised – see figure)



- or its state of the art equivalent, Schneider electric, Acti 9, Differential switch ID, catalogue ref. code A9R35491

Before proceeding with connection turn off the main power switch; check the machine's power cord is not live.

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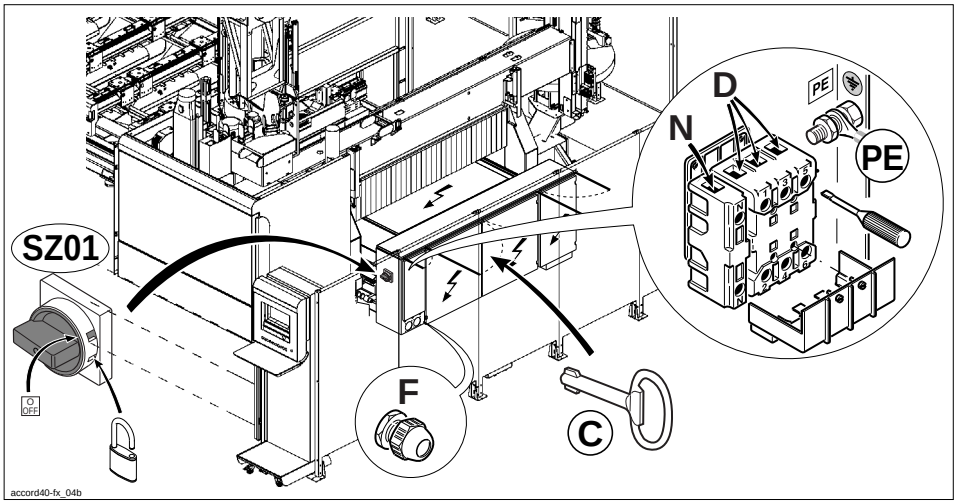
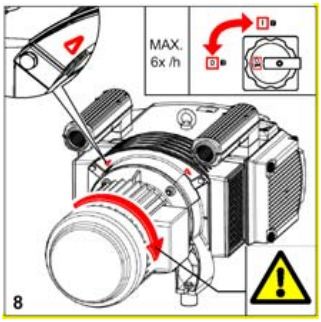
(ux5-hde_1.0_e.2.5a)

Connect the machine to your mains power supply as follows:
- Turn the main switch "SZ01" .
- Using the key supplied C, open the door of the electrical cabinet.
- Feed the power supply cable through the hole F.
- Connect the three wires of the power supply cable to the terminals D.
- Connect the neutral wire to terminal N
- Connect the yellow-green earth cable to the terminal PE.





Checking that the connection is correct:

When you have completed all connections:
- Close the electrical cabinet door.
- Turn the voltage supply to the line in which the machine has been inserted ON.
- Turn the main switch to the "I" position.
- switch ON the vacuum pump and check that it rotates in the right direction (indicated by the arrow : consult pump manual).
- If it is not rotating in the right direction stop the machine and switch OFF the current to the main line. Then invert position of 2 of the 3 conductors R-S-T on terminal board (M).
- Then carry out process described for first connection and check the pump rotation direction again.
- RESET" the Numeric Control (see attached manual).
- now you can press the machine main ON switch.

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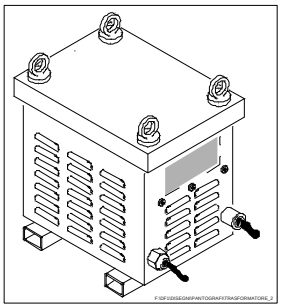
(u3012-tv_2.0_ce_bps_4.7a)

NOTE: Check if the following electrical connections have been made:
- vacuum pump
- photocells

-
(=autotrasformatore_1.0_inp)



Note: For power supply ratings other than 400 V, the machine must be fitted with an autotransformer .

The autotransformer converts these power ratings to the 400 Volts necessary for efficient machine operation.

On machines fitted with autotransformers, select the power cable section on the basis of the current absorbed by the autotransformer.

WARNING: On machines fitted with an autotransformer, the user is responsible for fitting fuses and other forms of protection upstream on the power line.

The autotransformers supplied by SCM GROUP S.p.A. have a "neutral" socket

E.2.6 Pneumatic Connections

(ux5-hde_1.1_e.2.6)

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer

Before the pneumatic connection it is recommended to verify the quality of the air produced by your compressor system (contact the manufacturer) and the good conditions of the distribution system that has not to leave impurities and has to avoid condensation accumulations.
Where its is not possible to assure the above conditions it is suggested to intervene also only on the machine feeding line and considering the problem to install or a separating condensation filter or a separating oil filter or both if it is necessary.
The choice of the filters depends on the capacity of the air and of the degree of filter you want to obtain, for this it is recommended to consult a specialized technician or SCM's after — sales department.

. Specifications for the compressed air system
(caratt-aria-compr_1.0)

IMPORTANT: Make sure that: - the compressed air supply equipment is free from condensation and deposits (emulsified oil, scaling).

- the compressed air supply pressure is at least 7 bar.

- that the hoses and piping of the compressed air secondary distribution network have a diameter of 3/4" gas (approx. 27 mm).
- the connecting pipe from the distribution system to the machine have to be with 14mm. internal diameter and it has not to be longer than 10m
Note: the infeeding pipes long from 10m to 30m have to have 16 mm internal diameter.
- In particular, the compressed air generating system must provide the following air quality characteristics*:
- MAX size of the particles = 5 microns
- Max number of solid particles per m^3 = 500
- Max oil content = 5mg/m^3
- Dew-point = + 3°C

****If you have any questions, please contact the compressed air generating system manufacturer.***

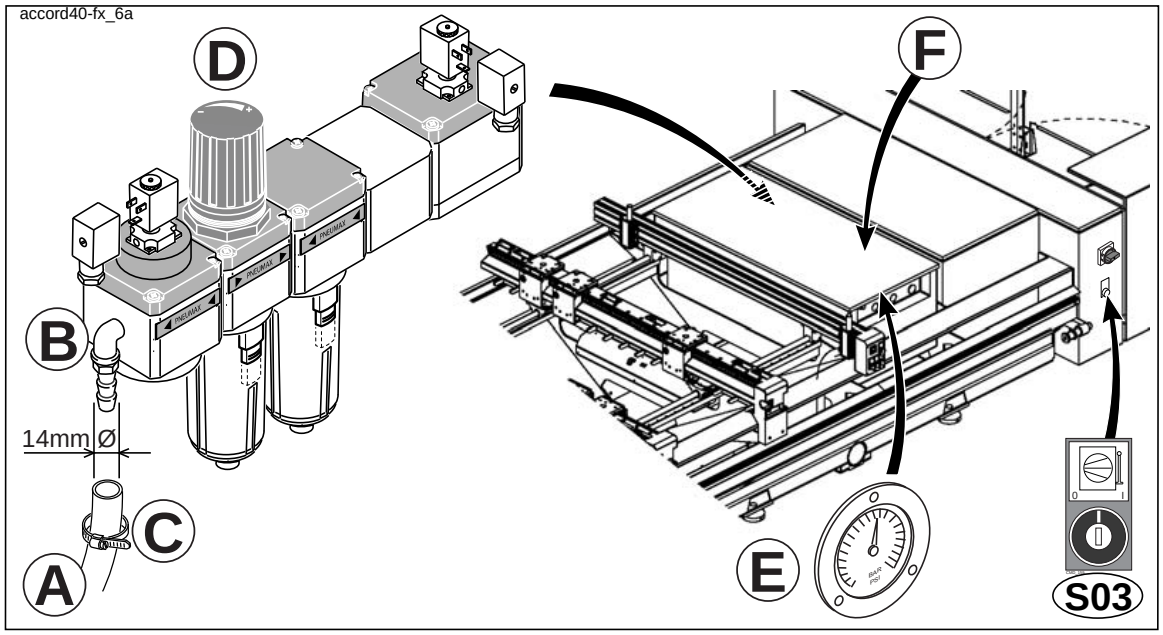
(ux5-hde_1.1_e.2.6a)

Pneumatic connections should be made as follows:
- Remove cover F
- Connect the air hose A to the 14 mm diam. connector B of the filter unit.
- Fix the hose in place using a Jubilee clip C.
- Open the main valve slowly to allow the machine mechanisms to move and settle in their positions. Check that the pressure on the gauge (B) is at least 6.5 bar.
- To adjust the compressed air pressure, lift and rotate the knob D to obtain the setting required. Read off the air pressure on the pressure gauge E. The recommended working pressure for this machine is 6,5 bar.
- Press down the knob D to lock it in position.

To charge/discharge the compressed air circuit, proceed as follows:

- Turn the “S03” switch to “I” to power the machine’s pneumatic circuit.
- Turn the “S03” switch to “0” to shut off supply and release air in the machine’s circuit.

The key must be removed and remain in the possession of the operator.



WARNINGS: Turning off the machine at the main switch releases automatically the compressed air in the machine’s circuit. When the machine is powered again, the pneumatic supply has to be restored manually at the “S03” switch.

E.2.7 Connections to the Chips Vacuum System

(ux5-hde_1.0_e.2.7)

- Installation operations must be carried out by specialised SCM technicians or personnel authorised by the manufacturer
The machine must be connected to the extraction system, which must be constructed in compliance with pr EN 12779 regulations which also require the use of primer sources detector.
Any plastic hoses used must be fireproof

Correct extraction gives efficient machine operation and prevents damage caused by overheating. It also reduces the risk of inhaling sawdust and guarantees safe machining conditions for the operator.
Once a week, check the efficiency of the sawdust/shaving extractor system.

CAUTION: HARDWOOD SAWDUSTS ARE CARCINOGENIC

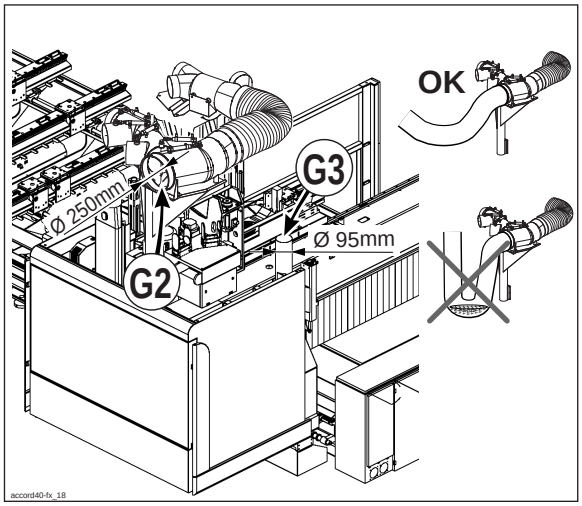
Other factors which reduce sawdust emissions are:
-regular maintenance of the tools, the machine and the extractor system
-correct cutting speed and feed speed
-correct adjustment of hoods, guards, diverters

Always machine with the general extraction functioning also when machining single workpieces.

E.2.7.1 Connection to the centralised sawdust/shavings extractor

(=ux5-hde_1.0_e.2.7.1_inp)

The centralised suction device requires a flexible tube of 250mm diameter to connect it to the main waste extraction system.



WARNING:

Ensure that the dust extraction system has the following features that have to be guaranteed in G connection points:

- dust extraction speed = 20m/s

- extraction air consumption (capacity) = 3550m^3/h

- vacuum = 1860Pa

Connect a hose 200mm in diameter from the vacuum system to the manifold G2 and fix it in place with a Jubilee clip.

IMPORTANT: Ensure that there are no kinks or sharp bends in the extractor hose. Sharp bends will cause a build up of wood shavings in the bend and restrict the extraction flow (See Figure)

E.2.7.2 Outlet of the shavings collection tub

(ux5-hde_1.0_e.2.7.2)

WARNING:

Ensure that the dust extraction system has the following features that have to be guaranteed in G connection points:

- dust extraction speed = 20m/s

- extraction air consumption (capacity) = 570m^3/h

- vacuum = 1100Pa

Connect a hose 100mm in diameter from the vacuum system to the manifold G3 and fix it in place with a Jubilee clip.

(sp_210mm)

INDEX

F.1 Controls general description

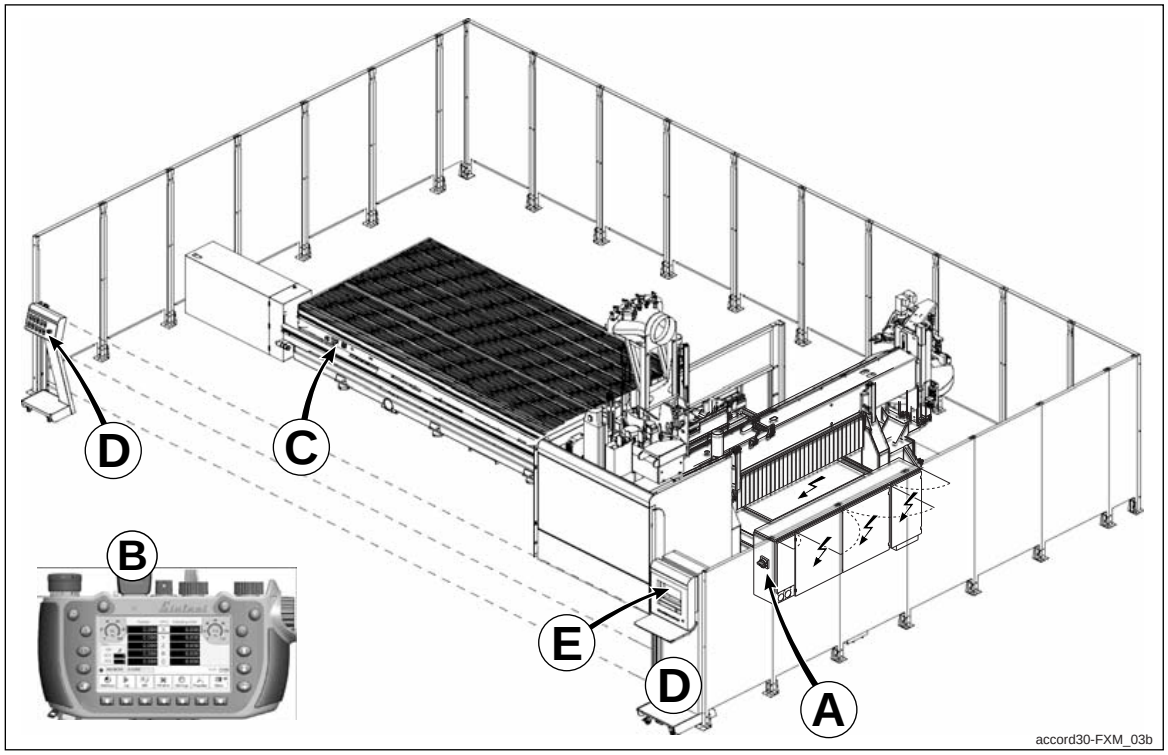
(acc-30-fxm_1.0_f.1)

The health and safety of the operator and other people near the machine depends on the judgement and experience of the operator. They must therefore have a thorough knowledge of where the controls are and how they work. They must also study and be thoroughly familiar with the contents of this User and Maintenance Manual before carrying out any action whatsoever.

The machine controls are on:

- The electrical cabinet A
- The mobile control panel B
- Worktables C
- Console D (also called the “remote control panel”
- Software control panel (paddle screen)

Depending on the type of electrical cabinet and the machine configuration the commands described here may not be present.



F.1.1 Mobile push-button control panel: precautions for use

(u2412_1.3_ce_ftc_5.1.1)

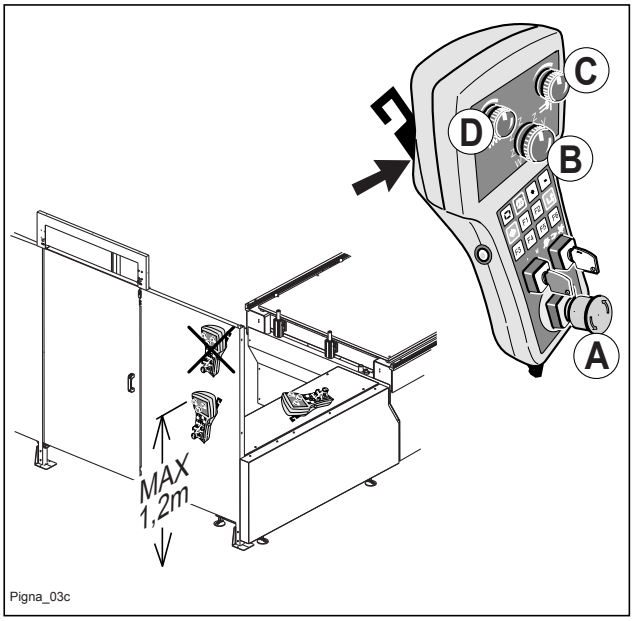
The back of the mobile push-button control panel has a magnetic support so that it can easily be attached on metal parts of the machine, freeing up the operator's hands to make work easier .

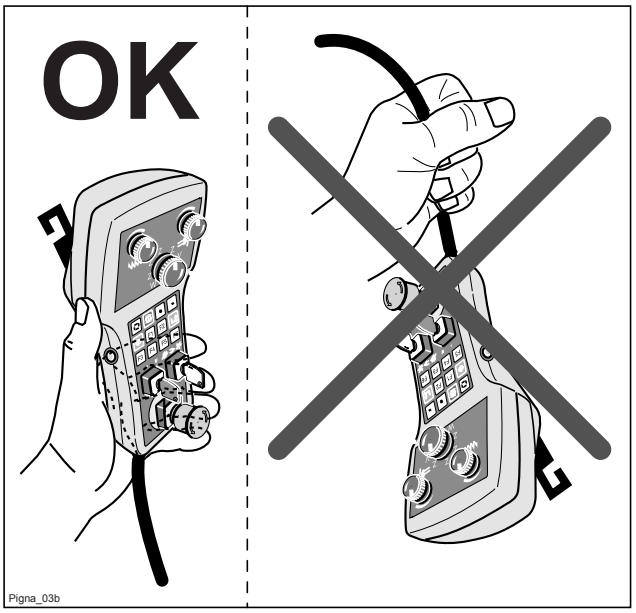
Do not attach the mobile push-button control panel at heights above approx. 1.2 m. The control panel could be damaged by an accidental fall from a height greater than that indicated .

If the push-button control panel accidentally falls (from any height), always check that there is no damage to the controls before using the machine.

In particular, check:

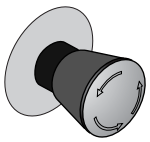
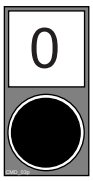
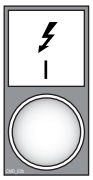
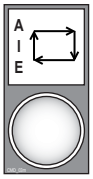
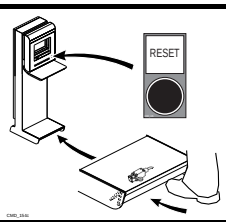
- that the mushroom-head EMERGENCY STOP push-button works (A). See also in Chapter 2 the section on "Checking safety devices");
- the axis selector (B);
- the spindle potentiometer (C);
- the axis potentiometer (D);

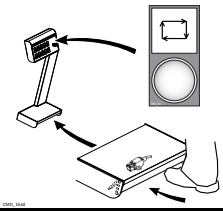
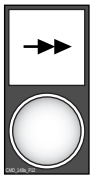
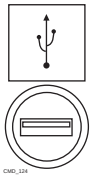
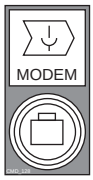




F.2 Description of the main control panel

(acc-30-fxm_1.0_f.2)

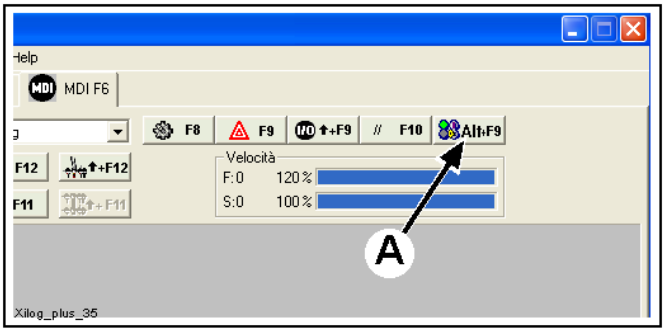
Ref.	Picture	Description / Function Use and / or indication
E01a		Emergency button / This can be pressed at any time and it disables all the functions of the machine instantly, stopping the work cycle, the axes and the spindles. When pressed, it cuts off the electrical and pneumatic supply. Turn the button in the direction of the arrow to reset it.
P01a		NORMAL STOP push-button / When always active it is used for immediately blocking all the machine functions by cancelling the machining cycle, stopping the axis and the spindles rotation When pressed, it cuts off the electrical and pneumatic supply.
P02a		White luminous START button / When it is on, it indicates that the machine is ready for processing. When it is off, it indicates that the machine is in emergency mode. After the emergencies have been restored, it is used to reactivate the machine (when pressed it must turn on) : the acoustic signal is activated as well upon start-up. Press to connect / Indicator light on = electric voltage present: ATTENTION: REPLACE THE LIGHT BULB IMMEDIATELY IF MALFUNCTIONING!
P03a		Green button / Starts the cycle and resets the alarm photocells when these are in alarm mode Press to start or reset. With light on = automatic mode enabled
P04a		RESET button / cancels the alarm messages, resets the CNC and the complete functions of the machine.
P04b		RESET buttons - "PRO-SPEED" / these reset the entire machine after the photocells are triggered. The photocells have to be activated at the same time in order to be reset. The LED (P12) should turn on after the buttons are pressed

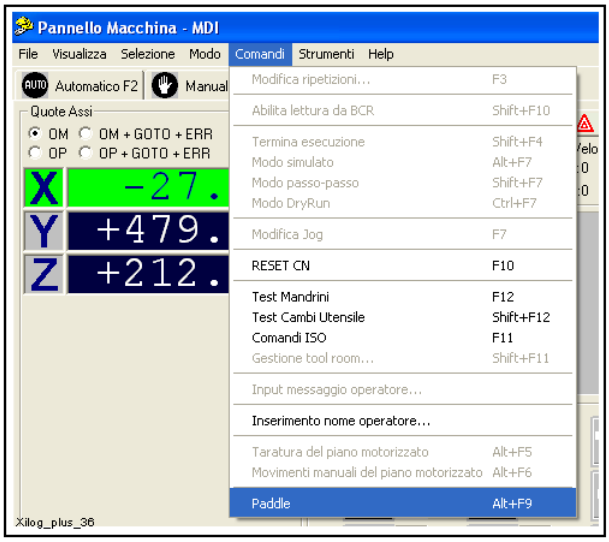
Ref.	Picture	Description / Function Use and / or indication
P04c		RESET buttons - "PRO-SPEED" / these reset the entire machine after the photocells are triggered. The photocells have to be activated at the same time in order to be reset. The LED (P12) should turn on after the buttons are pressed
P12a		White luminous button - "PRO-SPEED" / Indicates the mobile carriage speed When switched on, it indicates that the mobile carriage can move in "X" direction at maximum speed. When switched on, it indicates that the mobile carriage can move in "X" direction at low speed only. (also see "photoelectric safety barrier" chapter)
C01a		USB connection plug / connection to the PC
C02a		RJ45 socket / Connection to telephone line(MODEM)
C03a		RJ45 socket / Connection to data network

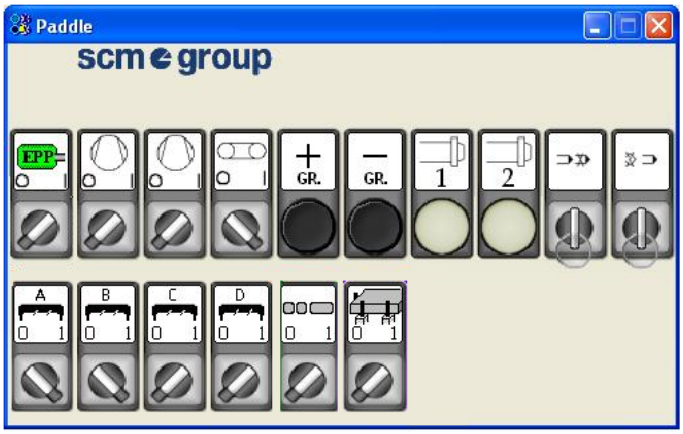
F.3 Software push button panel (Paddle screen)

(acc-30-fxm_1.0_f.3)

The software push button panel is activated only from "Panel Mac" in three different way:
- click on the icon A
- Commands menu --> Paddle
- press the keys Alt+F9

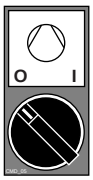
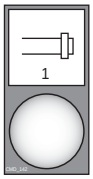
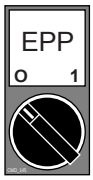


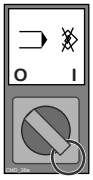
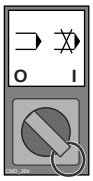
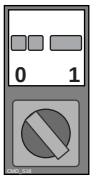
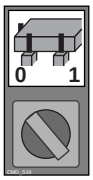




Commands description:
- the black selectors are stable
- the key selectors are stable and protected by password

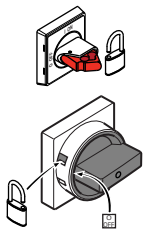
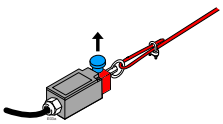
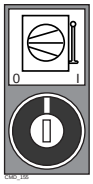
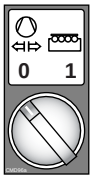
To operate the push buttons and selectors it is necessary to point and to click with the mouse
To operate the speed axes regulators it is necessary to drag the cursor with the mouse

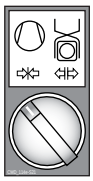
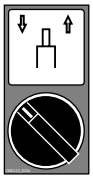
Ref.	Picture	Description / Function Use and / or indication
S01a		2-positions select / It is used for activating/deactivating the vacuum pump 0 = disconnected I = inserted
L02a		White LED / Indicates the status of the electrospindle It turns on when the electrospindle is moving. ATTENTION: If there is a fault with the inverter, the light turns off and there is the risk that the electrospindle is still moving.
S11a		Two-position selector / Activates - deactivates the Eco Power Pack function (Optional) 0 = deactivated / I = Activated
P17a		Black button to scroll through (select) the axes / channel / process unit and display the relative axes
P18a		Black button to scroll through (select) the axes / channel / process unit and display the relative axes

Ref.	Picture	Description / Function Use and / or indication
S13a		Selector / Always active On the position (No edit) the editing on the CNC is blocked, so that it is impossible to carry on the data saving.
S14a		Selector / Always active On the position (No mode) the machine functions before enabled are stored.
S18a		Two-position selector / Used to activate the machining on linked areas (Optional) The function, if recalled in the machining program, is also activated if the selector is in the "O" position
S19a		Two-position selector / Used for the automatic selection of the reference stops (Optional) The function, if recalled in the machining program, is also activated if the selector is in the "O" position

F.4 Controls on the machine

(acc-30-fxm_1.0_f.4)

Ref.	Picture	Description / Function Use and / or indication
SZ01a		Main switch / Turns the power supply ON and OFF. When OFF, the pneumatic supply is also turned off and the compressed air is released from the circuit It can be padlocked in its “0-OFF” position. OFF = disabled - ON = Enabled - NOTE: To reset the pneumatic supply, press the switch (S03a)
E03a		Emergency cord This can be pulled at any time and it disables all the functions of the machine instantly, stopping the work cycle, the axes and the spindles. Pull the cord to turn off the power supply. Pull the blue button to reset the microswitch.
S03a		Momentary contact key-operated switch / Turns the pneumatic supply of the machine on and off. The key must be removed and remain in the possession of the operator. 0 = off / I = on
S05a		Maintained contact key-operated switch / Locks and unlocks the machine door The key must be removed and remain in the possession of the operator. =>|<= lock / <=| |=> unlock
S15a		2-positions selector / It is used for activating-deactivating the installation of auxiliary vacuum (optional) 0 = disconnected / 1 = Inserted for the machining with jigs

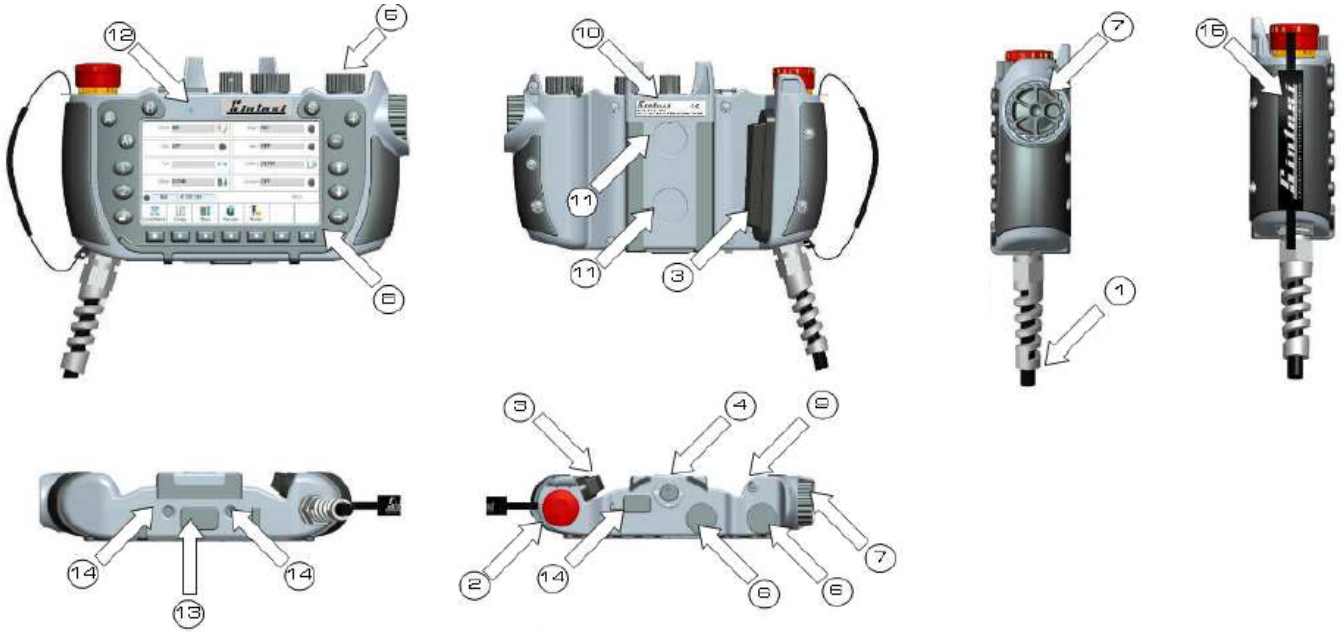
Ref.	Picture	Description / Function Use and / or indication
S21a		Backlit switch / to lock-unlock the piece: this turns on when the workpiece is locked in position =>|<= lock / <=| |=> unlock
S22a		Selector / It commands the lifting - lowering of the inside stops of the work plane -
V01a		digital pressure vacuum switch / Visualise the depression of the working table: if it is enough it allows the working operations.

(sp_105mm)

F.5 Remote push button control panel (Sintesi)

(sintesi_wrd_um1.1.1_f.6)

Sintesi Wired handheld terminal is hereunder in detail presented:



1 - CABLE
2 - EMERGENCY STOP PUSH-BUTTON
3 - ENABLING DEVICE : The button has a dual position: if pressed in the intermediate position enables the functions to be carried out safely. Fully pressed (anti-panic function) has the same effect as if it is released.
4 - STATE SELECTOR
5 - SCREEN
6 - POTENTIOMETER
7 - HANDWHELL (OPTIONAL)
8 - MEMBRANE KEYPAD
9 - TOUCH SCREEN PEN
10 - STICKER
11 - MOUNTING MAGNETS
12 - STATUS LED
13 - RUBBER CUP FOR USB mini-B CONNECTOR
14 - PROTECTING COVERS
15 - HAND GRIP

To switch the terminal on, press the buttons H - S simultaneously (2 - ⇩ in updated versions)

. -

(sintesi_wls_um1.3_f.6a)

The Wireless terminal differs from the Wired terminal only for the lack of connection cable, replaced by the transmission Token.

Sintesi Wireless handheld terminal is hereunder in detail presented:

1 - TOKEN INPUT CONNECTOR
12 - STATUS LED
16 - CIS RECEIVING STATION
17 - RECHARGING STATION

- It is suggested to install the CIS in order that the TOKEN input connector is always easily accessible by the user;

- It is suggested to install the CIS in order that the antenna or the remoted antenna have the best transmitting/receiving performances. Do not install the antenna inside metal cabinets. Install the antenna in order that the signal coverage guarantees comfortable operation in the whole machine working area.

1 - TOKEN : Token is a Unique ID key easily insertable on the top of the Wireless terminal and in the front part of the CIS thanks to a USB type A receptacle. Unique ID is factory-written into an internal EEPROM and guarantees wireless communication safety and uniqueness.

12 - Status LED. The LED indicates the connection between Wireless terminal and CIS.
- The two LEDs on the terminal and on the CIS are steady on: the system is in the RUN status
- LEDs off or flashing: connection problems, contact the technical support service

17 : Recharging station is a storing and battery recharging station for theWireless handheld terminal. The status LED indicates the charging status:
- LED = OFF: Recharging station is not working or battery fully recharged;
- LED = ON: Battery is being recharged;
- LED = BLINKING: Recharging Station failure.

- When not used, it is always suggested to locate the handheld terminal on the Recharging Station;

- When shut o and not recharged, the handheld terminal battery discharges after seven days (terminal with handwheel) or 40 days (terminal without handwheel). In this case please execute a complete charging cycle before using the handheld terminal.

F.5.1 Input device

(sintesi_wrd_um1.1.1_f.6.1)

6 - Override potentiometers:

The two over-ride potentiometers can be used for di different purposes, for instance setting the spindle speed or the machine movement speed along a certain axis.

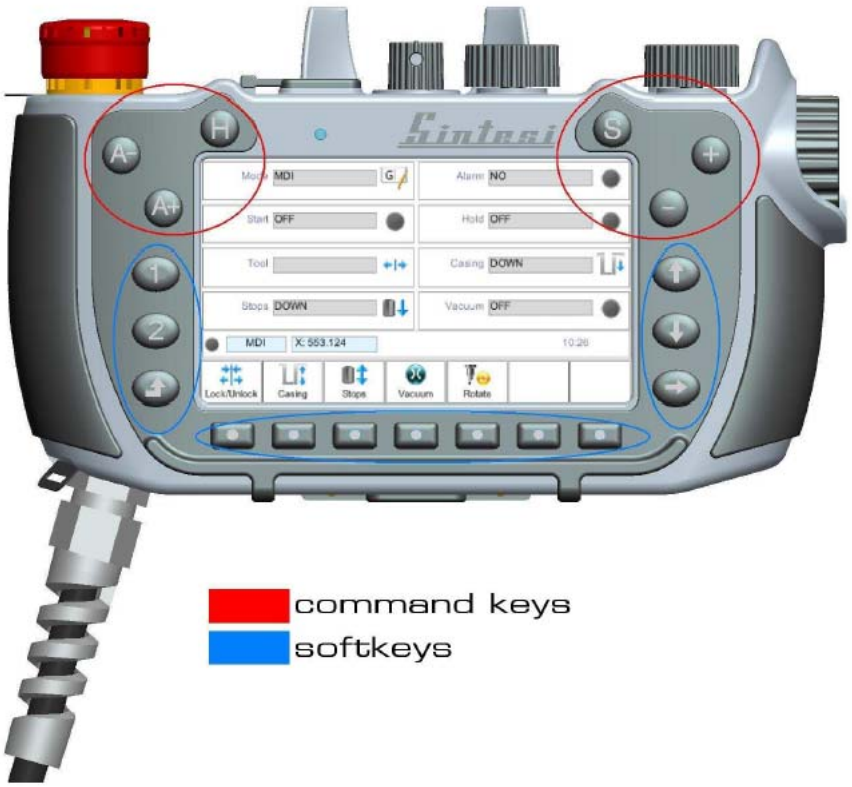
7 - Handwhell (Optional):

The handwheel is an optional accessory. It can be used for the machine movement fine tuning in the "handwheel incremental JOG" working mode.

The handwheel counts 40 detents per each 360. turn. Handwheel is internally managed and its counter goes from +32767 to -32767. Handwheel turns are counted as soon as the mobile panel is shut on. Clockwise turns decrement while counter-clockwise turns increment the counter

8 - Membrane keypad:

The mobile panel has a rubber covered membrane keypad containing 19 keys. 6 keys are command keys, useful for a direct machine control. The remaining 13 keys are function keys, useful for navigating and operating through the panels of the software application. The letter or the symbol printed on the keys reminds the function.



Key	Function
H	Hold (Machine stop)
S	Start (Machine start)
A+	Scroll axis down
A -	Scroll axis up
+	JOG+
-	JOG -
[freccia_dx]	Next
⇦	Level Up
⇧	Up (Softkey)
⇩	Down (Softkey)
1	Customizable Button 1 (Softkey)
2	Customizable Button 2 (Softkey)
O	Function softkey (function explained on the software application panel)

9 - Touch screen pen:

The touch screen pen is easy accessible in the back, on the right side of the terminal.

F.5.2 Software user's guide - HMI client features

(sintesi_wrd_um1.1.1_f.6.2)

NB: On some machine models, certain functions are not implemented

General information

Sintesi terminal allows user to:
œ select the axis to move in jog;
œ select the moving direction in jog;
œ start and stop a working process;
œ change potentiometers values;
œ change handwheel value.

Thanks to the display you can also:
œ view log messages;
œ change current language;
œ change device backlight;
œ view wireless diagnostics.

The application provides also the following functionalities:
œ selected axis and current axes values visualization. For each axis it is shown also following error or distance to go;
œ potentiometers and handwheel values visualization;
œ current function mode change (jog, reference, MDI);
œ status information (start/hold, alarm, casing, stops, vacuum pump, ...)
œ manual tool changing handling (lock/unlock tool, casing up/down, stops up/down, rotate store, vacuum pump on/o);
œ suction cupsand bars graphic and tabular visualization.

F.5.2.1 Navigation buttons

(sintesi_wrd_um1.1.1_f.6.2.1)

It is possible to consider the software architecture like a tree. The navigation functions are linked to the buttons in the south side of the device. To reach all the software functionalities it is necessary to use also the predefined keys “LEVEL UP” and “NEXT” (see paragraph 2.3.1.5.3).
“NEXT” allows user to cyclically scroll all the functions available on the same level. If the number these functions is greater than seven a small right arrow icon appears below the closest “NEXT” button function icon). “LEVEL UP” is useful to go back to the upper level of the tree

F.5.2.2 Properties

(sintesi_wrd_um1.1.1_f.6.2.2)

From the root of the navigation panel the user can select Properties button to handle some typical characteristics of the device.

The figure 3.1 shows the children nodes of Properties:
œ Language: to change current language choosing among the available ones (see paragraph 3.1.3.1);
œ Log: to view warning and error messages occurred during execution (see paragraph 3.1.3.2);
œ Backlight : to change the backlight of the device. Selecting this function, the user can increase or decrease the current backlight choosing between “Light +” and “Light-" button;
œ About: to view terminal and NCC version information;

F.5.2.3 Language settings

(sintesi_wrd_um1.1.1_f.6.2.3)

The framework allows the user to select the desired language choosing among the available ones. Starting from the main panel, the user selects Properties --> Language to view all the available languages. Supposing that English is the current set language, choosing it button the user can change it immediately restarting the application (Restart button) or only after the next system reboot (Set button).

F.5.2.4 Log panel

(sintesi_wrd_um1.1.1_f.6.2.4)

The Log Panel is a predefined environment of the framework useful to view warning and error messages occurred during the communication between the terminal and the CNC.

In this panel the user can see communication warnings like “No response from CNC” or errors caused by packets corruption. So he can verify every moment if data flow between HMI and CNC is ok or if there are data loss problems.
The user can interact with Log Panel scrolling it left or right using Scroll left and Scroll right button. In the same way he can scroll up and down using the predefined Up and Down buttons (up arrow and down arrow in the right side of the device). Update button allows the user to update the rows of the list shown in the panel.
The log panel cyclically shows maximum 50 rows ordered by time.

F.5.2.5 Backlight

(sintesi_wrd_um1.3_f.6.2.5)

The user can change the current backlight of the device using “Light +” and “Light -” buttons. The backlight is also managed by the CNC.

On the device it is also set a timeout to switch the backlight to the lowest value in case of inactivity. So, if the user does not press any buttons or does not chang epotentiometers or handwheel value for a time equal to the timeout, the backlight will be swhitch off. The user have to press at least a button or move potentiomenters or handwheel to switch on the backlight. Note that the motion control key commands are sent to the CNC even if the backlight is off. In the same way potentiometers or handwheel changes take effects on the CNC. The pressure of the remaining buttons when the backlight is off, instead only allows the user to reactivate the backlight. The default value for the inactivity timeout is 30 seconds but the user can change it using the “Timeout +" and “Timeout -" buttons in the navigation bar or selecting the desired value from the combo box shown in the current panel. The selectable values range from 1 second as minimum value to 1 hour. It is also possible to avoid that the backlight turns off for inactivity selecting the option “Never" from the combo box.

F.5.3 Software user's guide - Motion panel

(sintesi_wrd_um1.1.1_f.6.3)

F.5.3.1 Axis quotes and following errors panel

(sintesi_wrd_um1.1.1_f.6.3.1)

The first panel loaded by the framework and shown to the user is the following one:

This panel allows the user to be updated on the main motion information.
In the upper side of the display on the left and on the right the application shows left and the right potentiometer value in graphic mode. The meaning of the two potentiometers are respectively rapid axis (0-100) and working axis (0-120).
In the center part of the display, for each axis of the selected channel, you can find axis value and either following error or distance to go. These last values can be switched using the local function FW Error and Dist to go. The current selected axis is highlighted by a blue border. To change the selected axis you can use A- and A+ key scrolling up and down the axes of the channel. It is also possible to select the desired axes directly clicking on it using touch-screen. To select the next/previouse configured channel you can press the respectively combination of buttons: LEVEL UP + ARROW UP and LEVEL UP +
ARROW DOWN.
In the lower left side of the panel it is shown the current value of the handwheel (optional feature). The handwheel can be used for example to move the machine in incremental jog mode. In this way, each handwheel detent represent a single incremental movement of the current selected axis.
From this panel it is also possible to change the current mode using the functions Reference, Jog and MDI. If you want to start the axes calibration, you can select reference mode and then press S button. In the same way you can start part programs using MDI functionality. To move axes in jog mode you must choose Jog and then use + and - buttons.

F.5.3.2 Motion control key

(sintesi_wrd_um1.1.1_f.6.3.2)

To control machine axes and move them you must use the upper keys H, S, +, -, A+, A-.

œ S: Start button. It allows to send a start command to the CNC for example to start the machine reference;
œ H: Hold button. It allows to send a hold command to the CNC for example to pause the machine current executed program;
œ +: JOG+ button. If the current mode is the jog one, it allows to move the selected axis increasing its value;
œ -: JOG- button. If the current mode is the jog one, it allows to move the selected axis decreasing its value;
œ A+: Axis+ button. It allows to scroll down the current selected axis;
œ A -: Axis- button. It allows to scroll up the current selected axis;

F.5.3.3 Status bar

(sintesi_wrd_um1.1.1_f.6.3.3)

An important panel is the framework status bar shown below the central panel and above the navigation bar in the bottom side. It is shown in every terminal environment.
In the center of the status bar there is the status panel containing a field to show the current selected axis and another field with its current value. It also displays an alarm message when a CNC/PLC alarm/warning occurs.
On the left side of the status bar there is a led, whose color is normally grey. When a remote request is sent to the CNC, this led becomes at first blue, meaning that a request has just been sent and CNC is handling it. When CNC sends the response to terminal, the led becomes green or red just for a few seconds, meaning respectively that the request has been successfully handled or there has been an error.
On the right side of the status bar you can find a panel with two useful information: time and current level of the battery charge(1).
Time info is retrieved from the CNC so it is ever synchronized with it.
(1)The battery charge indication is provided to inform the user on the current battery status and gives him an alarm when the battery level is low.

(1)Only for Wireless

F.5.4 Status panel

(sintesi_wrd_cpm1.1_f.6.4)

F.5.4.1 Layout description

(sintesi_wrd_cpm1.1_f.6.4.1)

Selecting Status function from the main panel, the framework loads the Status Panel in the center of the display and, consequently, change the associations of the function buttons. In this environment the user can view the current status of some features of the machine/CNC and, using the function buttons, he can change their status interacting in this way with it.

The features monitored from the Status Panel are as follows:
œ Mode: current motion mode set in the CNC (reference, jog, MDI, ...);
œ Alarm: presence or absence of an alarm. YES means that there is at least a CNC/PLC alarm;
œ Start: Start state. ON means that a Start command has been previously sent from the pendant;
œ Hold: Hold state. ON means that a Hold command has been previously sent from the pendant. If so, also Start should be in ON state;
œ Tool: lock/unlock tool state. If its value is blinking, it means that it is possible to change tool;
œ Casing: casing state (UP or DOWN);
œ Stops: stops state (UP or DOWN);
œ Vacuum: vacuum pump state (ON or OFF)

F.5.4.2 Function key description

(sintesi_wrd_cpm1.1_f.6.4.2)

As shown in the figure A.1, in the south part of the display you can find the following functions:
œ Lock/Unlock: send a request to the server to start lock/unlock procedure;
œ Casing: send a request to the server to switch the casing state from UP to DOWN or vice versa.
œ Stops: send a request to the server to switch the stops state from UP to DOWN or vice versa.
œ Vacuum: send a request to the server to turn on or o the vacuum pump;
œ F1: send a request to the server to lower the spindles of the boring head: enabled in “MDI” or “Manual” mode. When enabled it is possible to use the + and - buttons;
œ F4: send a request to the server to enable selection of the tool-holder magazines with the doors open. Used in combination with the state selector to select the magazine.
œ F3: send a request to the NC server to enable F3 functionality.

Using these commands as previously described, the user will be able to interact with the CNC.

F.5.5 Bars and suction cups panel

(sintesi_wrd_cpm1.1_f.6.5)

Selecting bars and cups button from the main panel, the framework loads the Bars and Suction cups panel . This panel shows a graphical representation of the work table and all enabled bars and suction cups on the machine the operator is controlling. This bars and suction cups functionality is used to well positioning the work piece before being machined, providing a semi-automatic procedure to do that. By this functionality the terminal supports the operator in this preliminary operation.

F.5.5.1 Overall view description

(sintesi_wrd_cpm1.1_f.6.5.1)

Overall view is the default view of this panel. Each bar in this view is represented by a filled vertical rectangle and each cup by a rounded corner horizontal rectangle. Both bars and cups may be filled with three different colors: gray, green or red according to their status: disable, enable (but not positioned) and enabled and positioned. A thread periodically requests to CNC server for the current status of bars and cups refreshing this view consequently. This panel shows at least 6 bars and at most 12. Bars are divided in two pages so at most may be shown 6 bars per page, or at least 4 bars per page (for only 6 bars they will be represented in a single page). By clicking the corresponding button in the navigation buttons below the overall view panel it is possible to enter the details view relative to the selected bar.

F.5.5.2 Bar details view description

(sintesi_wrd_cpm1.1_f.6.5.2)

From the navigation bar below the overall view panel, it is possible to select the details view . This view shows a table describing the details of the current bar. The table has many rows as the number of the cups in the selected bar. For each cup the following information are shown, in the corresponding column:
œ Cup number: a progressive number (in descending order);
œ Distance: show the remaining distance to correctly place the cup in the target position. An up or down arrow at right end of the field shows the versus where to move the cup in order to correctly place it;
œ Target position: the y position the cup must be positioned to;
œ Angular position: the cup orientation in degree;
œ Cup code: a code labelling the cup.

Below the rows describing cups information there is a row describing the target position and the relative distance of the selected bar. An arrow left or right oriented shows the versus where to move the bar in order to achieve its target position.

F.5.5.3 Function key description

(sintesi_wrd_um1.1.1_f.6.5.3)

The navigation bar on the bottom of the panel shows the following buttons:

œ Left: show the previous bar details;
œ Angle: confirm angle to CNC server for the current cup;
œ Code: confirm code to CNC server for the current cup;
œ Exit: get level up to overall view panel;
œ Right: show the next bar details.

F.5.5.4 Custom buttons description

(sintesi_wrd_um1.1.1_f.6.5.4)

The custom buttons behaviour is described below:

œ Up arrow: allows user to shift up the graphical view;
œ Down arrow: allows user to shift down the graphical view;
œ Custom button 1: shows/hide the description panel on the right side of the main panel;
œ Custom button 2: changes from cm to inch the ruler unit of measure or hide the ruler itself.

(sp_210mm)

INDEX

G.1 Use and Programming

(a632_ceb1.0-6.1_inp)

THE USE AND THE PROGRAMMING MUST BE CARRIED OUT BY THE QUALIFIED STAFF ONLY

WARNING: MAKING VARIATIONS TO THE MACHINE CONFIGURATION PARAMETERS IS STRICTLY PROHIBITED

THE MANUFACTURER DECLINES ALL RESPONSIBILITY FOR DAMAGE CAUSED TO PERSONS OR OBJECTS AS A RESULT OF TAMPERING WITH THE MACHINE

G.2 Starting and Stopping

(a632_ceb1.0-6.2_inp)

G.2.1 Starting

(gamma-2010-fxm_1.0_g.2.1)

PRECAUTION: If the machine is being started for the first time, check that all securing brackets and blocks have been removed (see section "Removing the securing blocks and brackets").

To switch on the machine, proceed as follows:

In the presence of UPS, first switch the UPS on and then the machine.

- Turn the main On/Off switch "SZ01" to position I ON
- The computer starts automatically. If it doesnt happen it is necessary to open the console with the special key supplied and press the ⏻ pushbutton on the computer).

Reached this point the procedure of Windows,"Panel Mac" and operator interface starting, if "Panel Mac" has not been set up automatically it is necessary to launch it using the special icon on the desktop PanelMac.

To activate Xilog Plus Editor, use the menu on the Machine Panel: File --> Open --> Editor

In case that the pc is switched off for anomalities, push the button ⏻ for more than 5 seconds (driven standby).

- Turn the “S03” switch to turn on the pneumatic supply
- Check that the compressed air supply is on. The pressure gauge E should give a reading of at least 6,5 BAR.
- When the screen page shown "Machine Panel" appears, you can start the machine by pressing the white pushbutton "P02" which lights up.
- **The lighting of the button and a short acoustic signal warn that the machine is in operating mode**

NOTE: if the white pushbutton "P02" does not light up, check if any emergency or safety devices are activated.

IMPORTANT: before resetting the emergency and/or safety devices, check that the causes of their activation have been removed.

IMPORTANT: the white pushbutton "P02" lights up to indicate that the machine is operating.

- The setting execute (see chapter 4.1 of the planning handbook Panel Mac-Xilog Plus)
- When the message "sizing completed" appears on the display unit, the machine is ready to start machining.
- Turn on the chip extraction system (this is independent from the machine and optional).

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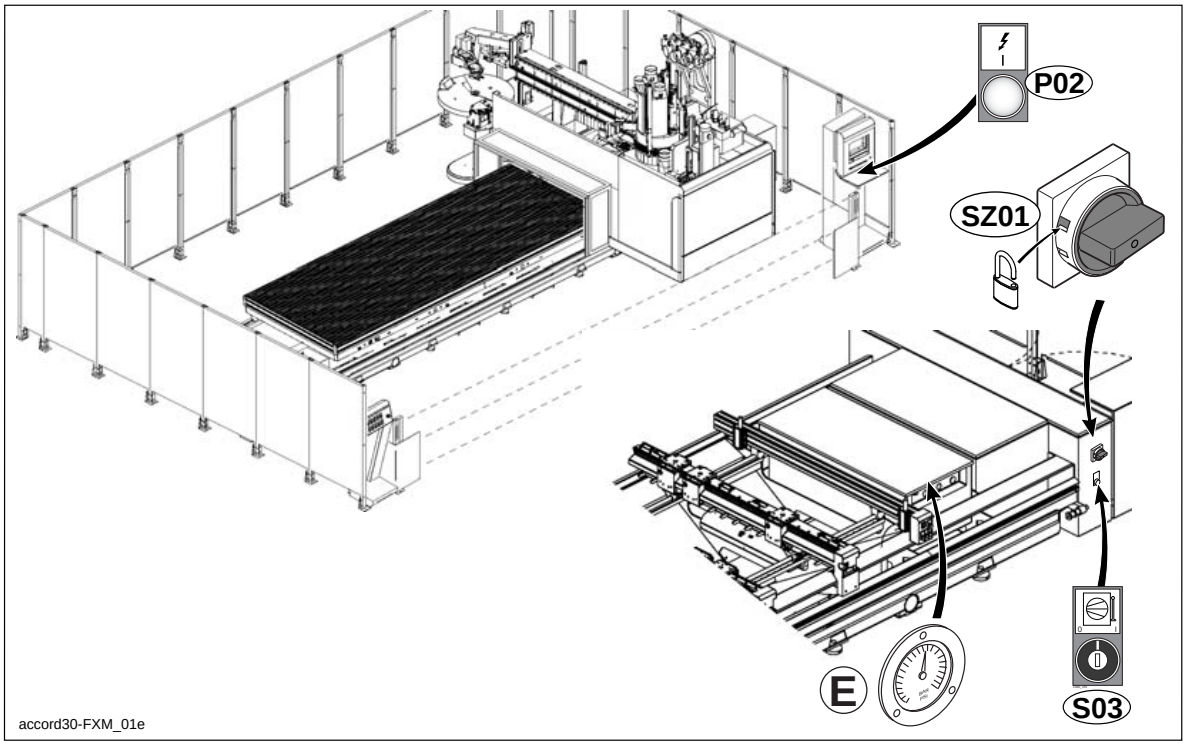
(gamma-2010-fxm_1.0_g.2.1a)


P02
SZ01
E
S03
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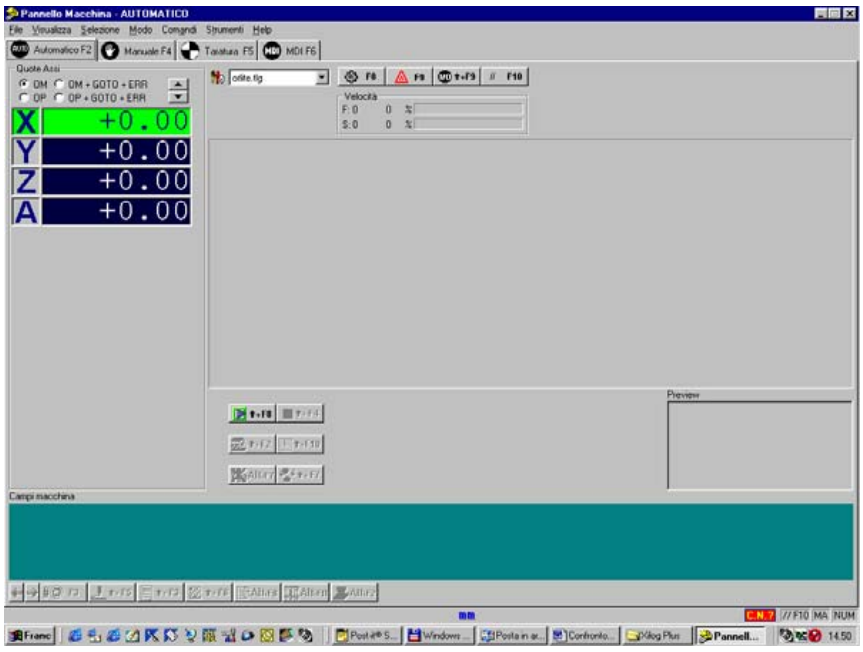

Pannello Macchina - AUTOMATICO
File Visualizza Selezione Modo Comandi Strumenti Help
Automatico F2
Manuale F4
Tastiera F5
MDI F6
Quote Assi
X +0.00
Y +0.00
Z +0.00
A +0.00
Velocità
Preview
Campi macchina

G.2.2 Normal stop

(ux5-hde_1.1_g.2.2)

To switch on the machine, proceed as follows:
- we suggest to displace the axes in parking area, this in order to accelerate at the switch on of the machine the calibration operation.
- Exit from operational mode on C.N. and press "ESC" key to activate the "Basic Menu"
- Press the Shift+F11 key and, with F6 key, confirm exit from operator interface
- Close Windows session (press Ctrl+ESC --> Close session --> Stop system)
- Switch-off any continuity unit (optional)
- Switch-off the vacuum pumps and the shavings conveyor
- Turn and padlock main switch "SZ01" at 0 OFF
- Clean the work zone

The person in charge, (normally the qualified operator) must take care of the key to ensure that the machine is never started up without their supervision

G.2.3 Emergency stop

(as-433)

The emergency stop must be activated each time there a dangerous situation occurs during any of the machine operating phases.

By activating the emergency device the following situation will occur:
- There is a drop in power to the controls.
- The motors stop and the axles brake.

G.2.4 Starting after an emergency stop

(unix-kbt_3.0_6.2.4)

To start the machine after an emergency stop proceed as follows:
- Remove the cause for the emergency.
- see chapter "Machine emergency state reset procedure"

G.2.5 UPS unit

(acc-40-p_1.0_ce_6.2.3_inp)

In the event of voluntary machine shutdown, it is suggested that you also switch off the UPS unit manually by acting on the relevant ON-OFF switch.

If you do not do this and the machine stop is excessively long (longer than UPS autonomy) there is a risk of the unit batteries going completely flat.

When the machine is switched back on, make sure the UPS unit is switched on first and the machine after.

Switching the unit back on via automatic mains commutation is possible under all conditions, even if the batteries have run completely flat. In this case, however, UPS protection cannot be guaranteed until the batteries have fully recharged.

If this restart sequence should fail to be executed correctly errors may prevent a routine restart and proper machine operation.

In this event switch the machine off and back on again without switching off the UPS unit.

G.2.6 Operating stop (PRO-SPEED)

(a-m800_3.3_g.2.6)

If the photocells are violated when the machine operates in "high speed" mode (white push-button N illuminated) there is an operating shutdown: The machine stops the axes and shuts down the operation groups motors.

To reset the machine and continue machining:

1) Leave the photocell field
2) Reset the photocells with push-button "P03 + P04b"

G.3 Personal Computer

(ux5-hde_1.0_g.2.3)

The pc , even when it is off with the 220 Volt power supply cable connected, is in actual fact powered and in a "standby" state.

It is switched on or off as follows:

- switch on: press the on key on the front panel of the pc.
- switch off: performed by the operating system.
- forced switch off: it is called forced when the o.s. is not able to switch off the pc. To "force" the switch off keep the on/off key pressed , for more than 5 seconds.

It must be noted that in certain operating conditions , e.g. after an electrical blackout , the basic "standby" state may not reset itself correctly.

In this case , the regular "standby" state can be reset by keeping the on/off key pressed for more than 5 seconds.

G.3.1 Using operator interface on the PC

(=u2412_1.0_ce_ftc_6.3_inp)

The introduction of the PC to borers-routers enables the operator to control the machine from a special operator interface, designed and configured to facilitate and speed up machine use and programming.

The operator interface enables direct control of the machine logic (PLC) from the PC. The interface functions have been designed to make full use of the machines potential without endangering safety in any way.

The use of a PC has enabled the introduction of a totally 'open' system for machine control. Unfortunately this development has opened the way for third-party program developers who have little knowledge of the principles of machine control and machinery safety.

Given this situation, SCM Group S.p.A. would like you to note the following:

1) Dealers, retailers or branches in general are not authorised to install or in any way promote the installation of an operator interface not approved by SCM Group.

2) SCM Group declines all responsibility for machines equipped with operator interfaces other than those authorised and installed by SCM.

G.3.2 Tele-assistance software

(teleassistenza_1.0)

The tele-assistance software permits full use of the machine supervision PC and the elimination of the causes of any faults present at the time of connection.
The connection requires Internet access (at the customer's expense).
The connection program allows the service technician to carry out:

- operator interface display
- signals diagnosis
- verify and modify on-line the configuration status, the parameters and the machine programs.
- back-up operations of data and file transfer
- machine logic and operator interface upgrade operations

All the operations above must only be possible after the Customer has foreseen to activate, on the request of the technician who is operating in the Tele-assistance, the emergency status of the machine and to the following conditions:

- indicate that the machine is in Tele-assistance status with a sign

- ensure that an expert operator is always present on the machine as he must be in continued telephone contact with the technician that is operating in Tele-assistance

- any machine movements that are necessary for the reset from the emergency status, requested by the technician operating in Tele-assistance to the operator on the machine, must be carried out in compliance with all the safety conditions indicated in this manual: verify that all the safety devices are operational, check there are no persons inside the machine, check there are no objects forgotten in the work zone, etc.

G.4 Note on function mode

(ux5hd31_ce_tvm-bps_6.3.1)

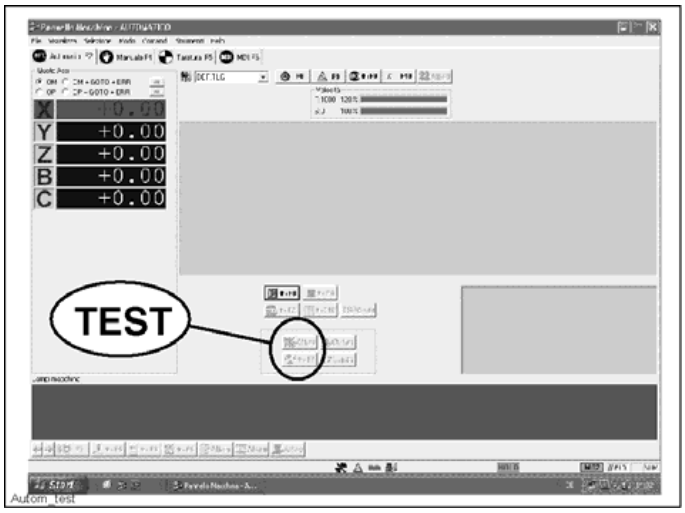
The machine has 4 functioning modalities that are activated by relative folders.

- Automatic
- Manual
- Calibration
- MDI

AUTOMATIC modality:
"TEST" FUNCTIONS

SIMULATED MODALITY: to verify the right procedure of the piece program verifying the displacement of the axes
"STEP STEP" MODE:
- one program line is processed at a time

NOTE: For machine with 5 axes electro-spindle the SIMULATED MODE is deactivated



MANUAL mode:
- manual mode operated from CNC
- machining heads stopped
- all EMERGENCY devices active

To move the axis:
Select axis on Xilog Plus machine panel and keep the keys pressed (or selector) Jog+ and Jog-.

MDI mode:
See Xilog Plus manual

CALIBRATING mode:
See Xilog Plus manual

G.4.1 Controls in “Manual” mode

(accfx_3.1_ce_g.4.1)

All SAFETY and EMERGENCY devices on the machine are active.

In MANUAL mode take care not to allow the machining unit to collide with other parts of the machine or with workpieces on the work table.

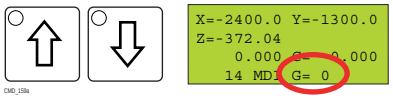
Axis movement

1) Select the "manual" mode on the machine panel

(accfx_3.1_ce_g.4.1a)

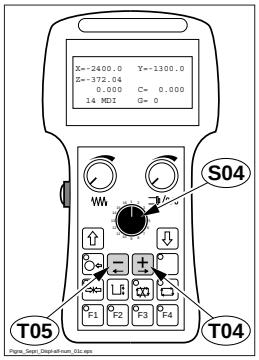
SEPRI remote pushbutton panel

2) Select the unit (Refer also to the section “Table of work units / axes”)



3) Select the required axis with the “S04” switch on the mobile control panel (the selected axis starts blinking)

4) Use key "T04 - T05" Jog +/- to move the selected axis.



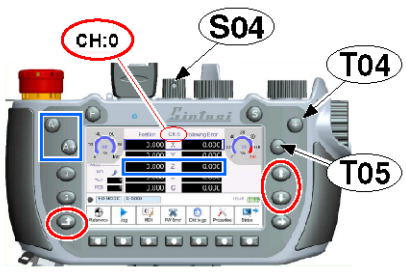
(accfx_3.3_ce_g.4.1b)

SINTESI remote pushbutton panel

2) Select the channel using buttons ⇦ + ⇧ / ⇩ (Also refer to chap. "operator / axes unit table")

3) Select the axis to be moved using buttons A- / A+ on the mobile pushbutton panel

4) Use key "T04 - T05" Jog +/- to move the selected axis.



G.4.2 Table of work units / axes

(accfx_3.1_ce_g.4.2)

UNIT / CHANNEL 0 (G0 / CH:0) Machine :
Axes: X - Y - Z(1) - U - A (Rapid 16 / 24 - TRC48 magazine rotation) - B(1) - C(1)
(1)This axis is virtual

UNIT / CHANNEL 1 (G1 / CH:1) Main electrospindle :
Axes: Z (E.M. Prisma) - A (Rapid 12 On Board magazine rotation) - B (E.M. Prisma) - C (E.M. Prisma)

UNIT / CHANNEL 2 (G2 / CH:2) Boring machine / Secondary electrospindle :
Axes: Z (Boring machine) - W (in-out CU 6 magazine) - A (CU 6 magazine rotation)

UNIT / CHANNEL 3 (G3 / CH:3) Fast tool changer device with shuttle: for chain tool-holder magazine :
Axes: A (chain magazine rotation) - U (Tool holder shuttle) - W (up-down manipulator) - C (manipulator rotation)

UNITS / CHANNELS 11-22 (G11-G22 / CH:11-CH:22) Blocking device holder bars

To enable the magazine using the F4 function (tool magazine activation) rotate selector S04 to the following positions:

Using SEPRI remote pushbutton panel:
- position 1 = magazine R12 on board
- position 2 = magazine R6 - PBTC
- position 3 = magazine R16 / R24 / TR48

Using SINTESI remote pushbutton panel:
- position 2 = magazine R12 on board
- position 3 = magazine R6 - PBTC
- position 4 = magazine R16 / R24 / TR48

(sp_210mm)

G.5 Machining procedures

(gamma-2010-fxm_1.0_g.5)

Machining procedures are the operations to be performed in sequence in order to run one or more complete machining cycles correctly.

We recommend the following sequence:
- Set up the machine

WARNING:

- During the machine adjustment stopping the machine (press the black button "0" on the control panel).

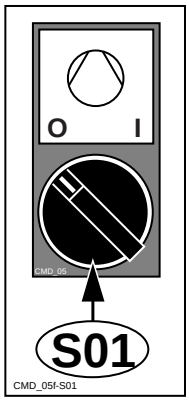
- All the operations described in this section must be performed by the machine operator.

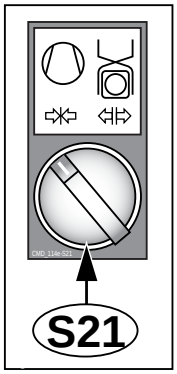
- BEFORE STARTING THE WORK, IT IS IMPORTANT TO VERIFY THAT THE TOOLS RECALLED IN THE WORK PROGRAM HAVE BEEN EQUIPPED IN A MANNER COMPATIBLE WITH THE WORK TO BE CARRIED OUT.

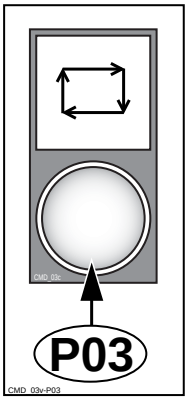
- ALSO CHECK THAT THE TOOLS MOUNTED ON THE STOREROOM ARE COMPATIBLE WITH THE EQUIPPING RECALLED IN THE WORK PROGRAM.

- Switch on the machine or reset it.
- load on the NC the program or the lists to be carried out.
- Activate the air pump by the "S01" selector .
- Position the panel on the working table mentioned in the program .

- with the "S21" selector lock the panel (the light turns on)
- Press start pushbutton "P03"
- When the machining is complete unlock the piece with selector "S21" and remove it
- Perform the check measurements.





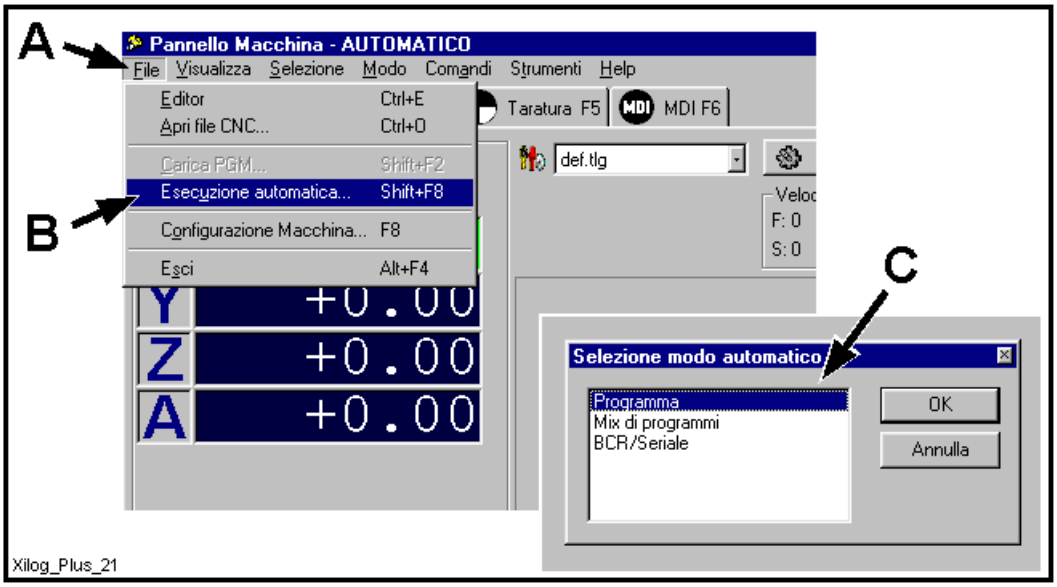


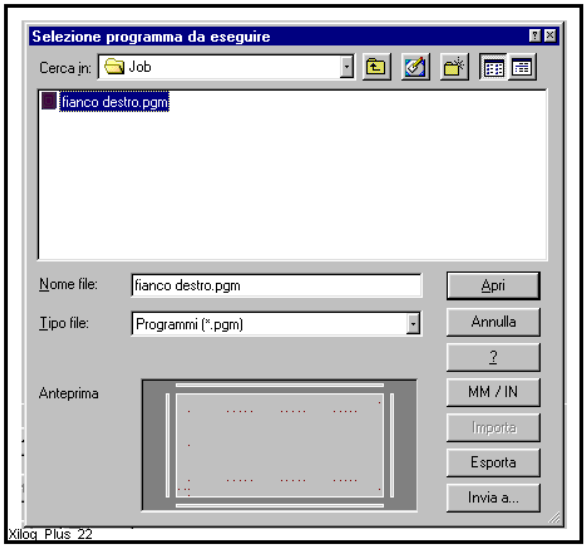
G.5.1 Loading of machining programs

(ux5-hde_1.0_g.4.1)

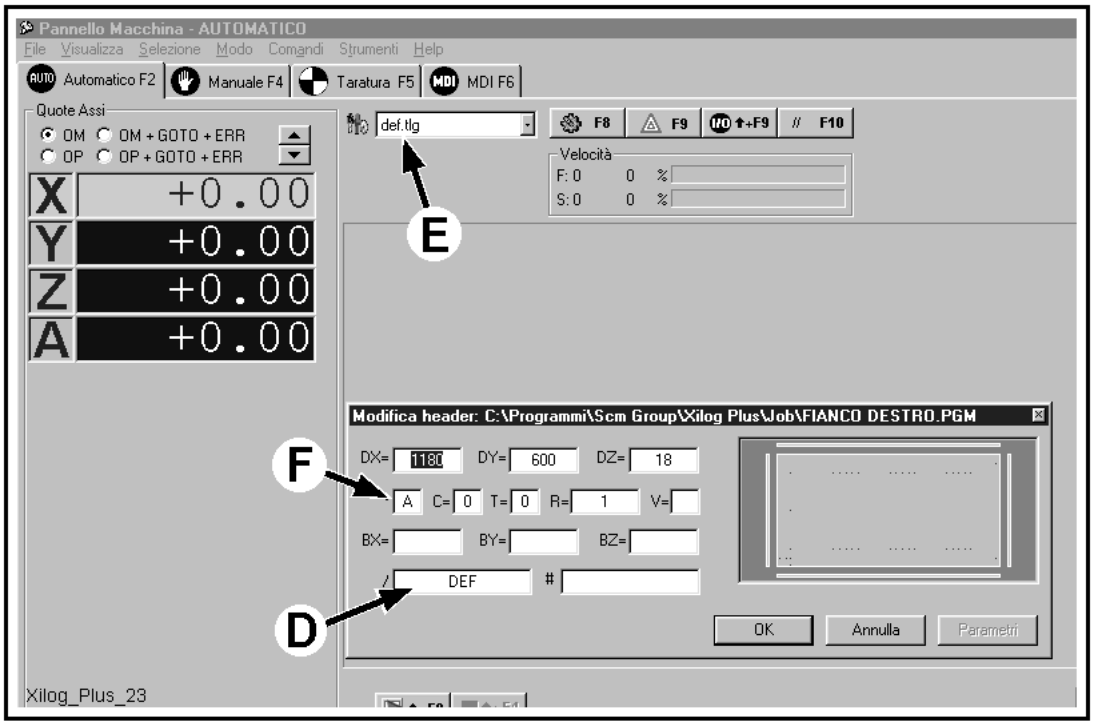
SCM recommends the following sequence of steps, in order to load the programs in a correct way:

1) if not active, open the interface SW "Panel Mac": double click on the icon
2) from menu "file" A select the "automatic execution" menu B and then select program or mix program C
3) from the file "Job" select the machining program (*.pgm) or the list (*.mix) you want to carry out and then confirm by the "open" push button.





Check if the equipment D mentioned in the program is coherent with the E active one: otherwise make the equipment active, the one which is mentioned in the program, by checking the congruity among the working tools mentioned in the equipment and the ones installed in the machine.



4) Check the area/s F, where the program or the list is carried out and go on with the panel loading.

G.5.2 Positioning a Panel

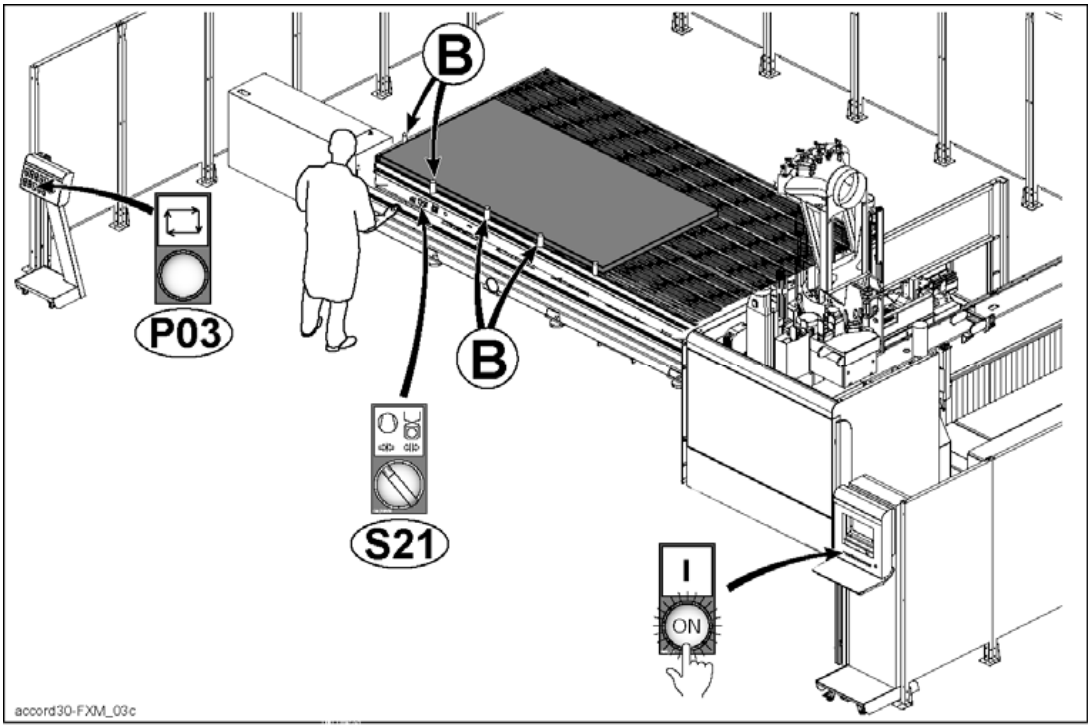
(gamma-2010-fxm_1.0_g.5.2)

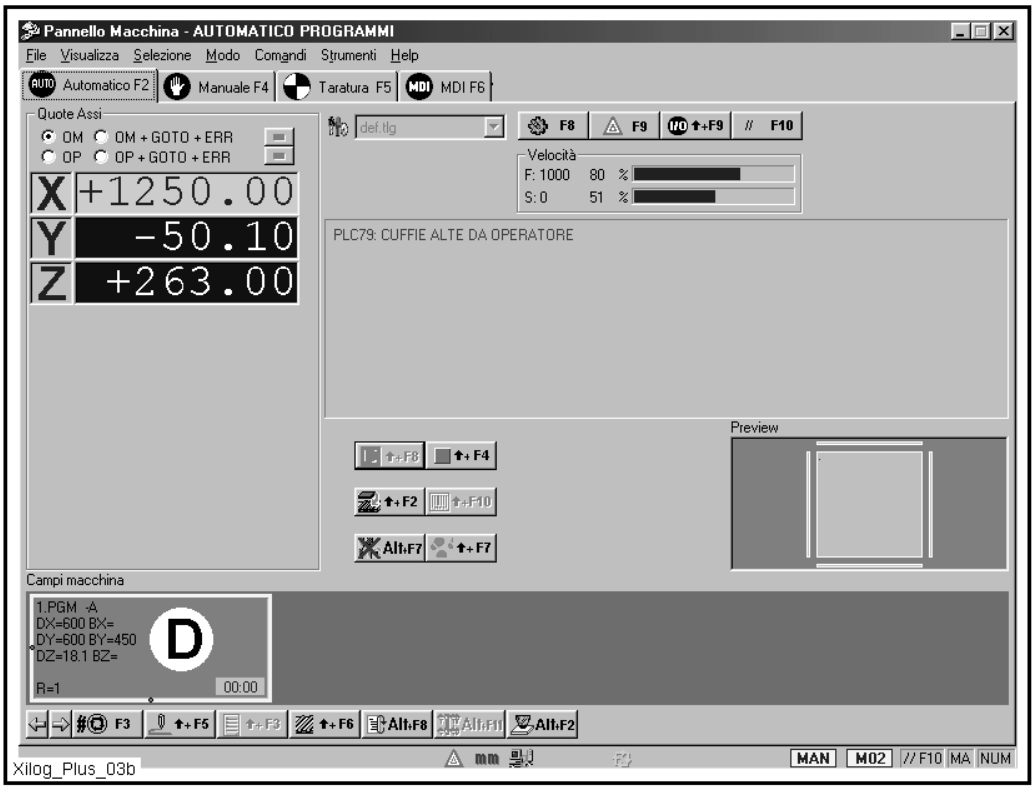
To position a panel correctly on the work surfaces, proceed as follows:
(See chapter "Work top --> Piece loading and unloading")

Check that the vacuum pump is ON

- In automatic mode, select the required work program on the CNC (refer to the user and programming manual provided)
- the "S21" selector sequentially activates the functions for the piece block/release cycle:
  1 - stop lifting
  2 - piece blocking
  Upon Cycle Start-up, the stops are automatically lowered
  3 - piece release with automatic lifting device ascent (if enabled)
- slide the panel on the work tables, positioning it against the reference stops B
- hold the panel so that it is resting firmly against the stops, activating the selector "S21" to activate the vacuum and to lock the panel.
- at this point the stops draw back and the panel is ready for machining. The program box "D" on the NC turns dark blue if the field is immediately available for machining. It turns light blue if it is not immediately available for machining and a selection is generated (this occurs when the machine is machining on another field).

WARNING: BEFORE YOU START MACHINING, MAKE SURE THE PANEL IS SECURE ON THE WORK SURFACE

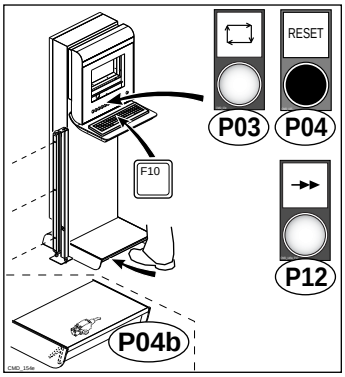




A machining cycle may now be performed:
- Exit simulate mode by pressing the horizontal function key "simulate" (F7) on the "Panel Mac" (Xilog Plus)
- Press cycle start pushbutton "P03"
- at the end of the machining process, release the panel with the selector "S21" and unload it
- Perform the check measurements.

. -
(a-m800_3.3_g.4.2a)

Pendulum machining (PRO-SPEED):
For pendulum machining the manufacturer suggests activating "low speed" mode to avoid the machine stopping: Verify that push-button "P12" is not illuminated; if it is illuminated, turn it off.



WARNINGS: DURING PENDULUM MACHINING THE CARRIAGE IS IN MOTION. THEREFORE BE CAREFUL NOT TO KNOCK INTO THE BUMPERS TO AVOID GENERATING AN EMERGENCY AND LOSING THE WORK IN PROGRESS.

Position the panel as previously described. Cue the machining with the start cycle push-buttons .
Leave the photocell field and reset them with the "P03+P04b" push-button
Reactivate "high speed" mode with push-button "P12"

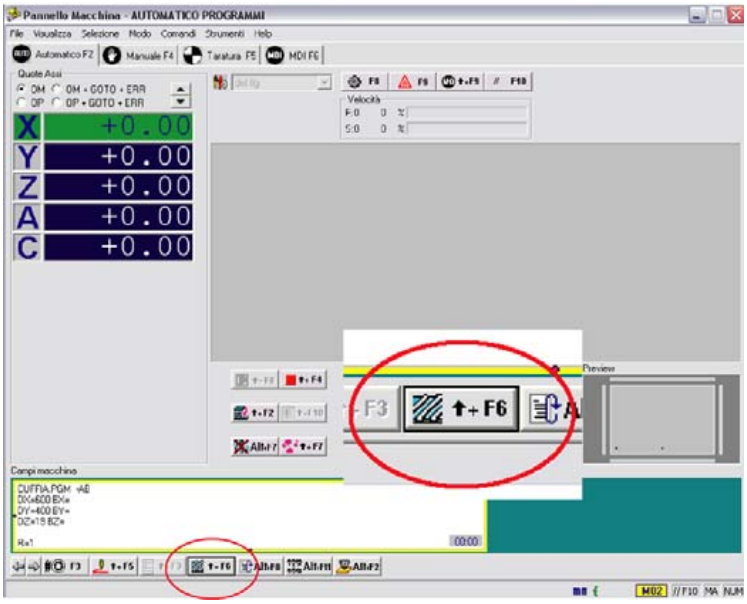
G.5.3 Process for positioning suction cups with automatic laser (optional)

(cross-laser)

In accordance with EN 60825-1:2003-02 the laser used has protection class 2M.
During operation, lasers of this class do not necessitate special protection. Simply follow the instructions below.
1) Instruct Operators never to look directly at the source of the laser beam.
2) Do not use additional optical equipment.
3) Do not alter or adjust existing shields.
4) Do not change the type of laser without the machine manufacturer's approval.
5) Repairs must be done by the manufacturer only.
6) Switch off the laser when not in use.

1 - Start running program in automatic;

2 - on the screen press key SHIFT F6 which activates the window "display work table program". The panel which represents the program synopsis of fields is orange: the machine is waiting for "START CYCLE" control, to start positioning the suction cups;



3 - press key "START CYCLE" (while positioning the panel which represents the program in synopsis of fields and which is green);

4 - a laser light is projected onto the work table at the point in which the first suction cup is positioned (this procedure is displayed in "work table programming display")window;

5 - manually position the first suction cups, entering inside the machine;

6 - once you have positioned the first suction cup exit the machine and press "START CYCLE" key again: the machine will pass to indicate the position of the next suction cup;

7 - position the final suction device moving behind the panel to be machined. After having positioned the suction device, refer and block the piece. Press the START CYCLE button on the remote pushbutton panel. The panel with the program in the field synoptic turns orange. Return to the automatic environment and start execution of the program to machine the piece.

G.6 Setting up the Machine

(ux5-hde_1.0_g.5)

The term "machine setup" is used to indicate the sequence of operations required to make the machine ready to start machining panels.

WARNING:

- During the machine adjustment stopping the machine (press the black button "0" on the control panel).

- All the operations described in this section must be performed by the machine operator.

THE MANUFACTURER recommends the following sequence of operations:

- Switch off the machine or switch it to emergency stop condition
- Clean the working area.
- Fit the tools
- If the machine is switched off, switch it on and switch it to stop condition
- Fit and adjust the panel gripping or clamping devices
- Switch the N.C. to setting mode and enter the measurements of the tools fitted (see Xilog programming manual)

WARNING: The machine is equipped with a device that detects the presence of a tool on the electro spindle, BUT IT DOES NOT RECOGNIZE THE TYPE OF TOOL ACTUALLY MOUNTED.

CHECK THAT THE TOOLS MOUNTED ARE CONSISTENT WITH THOSE RECALLED IN THE WORK PROGRAMS.

G.6.1 Fitting the Tools

(ux5-hde_1.1_g.5.1_inp)

WARNING:

- During the machine adjustment stopping the machine (press the black button "0" on the control panel).

- All the operations described in this section must be performed by the machine operator.

Depending on the configuration, the machine, can be equipped with the machining units described below, which must be fitted with tools: for fitting instructions, consult the specific chapters for each operating unit in this manual, whilst for CNC parameter configuration consult the use and programming manual, also supplied with the machine.

- Vertical boring units
- Vertical routing units with HSK63 fitting
- Routing units with cutter disk (saw blade)

Check that the tool direction of rotation/machining is compatible with the locking system (ring nuts or screws); a tool which rotates to the right requires a ring nut or screw with right-hand thread.

General Precautions:

[rombo] always work with well-balanced tools (Q < 1 mm/s): every imbalance causes vibrations that can damage the electrospindle shaft bearings and compromise the quality of the tool;

[rombo] the toolholders must be balanced to a degree of at least G = 6.3 at maximum usage speed for type "A" cutters (disc cutters) and G = 16 at maximum usage speed for type "B" cutters (ball end tools) (reference standards prEN 847-3 and ISO 1940-1);

[rombo] the tools fitted onto the electrospindle must comply with standards EN 847-1 and prEN847-2. In addition the name of the manufacture and the maximum rpm speed must be marked clearly on them. It is strictly forbidden to use tools that do not comply to these standards or to exceed the speed limits marked on the tool;

[rombo] always use cutting and forward speeds, tool diameter and lengths suited to the machining operation you are performing.
Choosing a rotation speed.
The machine operator must select the electrospindle speed so that it is LESS (reference standard prEN 847-3 amendment A.1):
[rombo] than the maximum rotation speed permitted for the tool;
[rombo] than the maximum rotation speed permitted for the toolholder.
[rombo] than the maximum rotation speed permitted for the electrospindle, selected on the basis of the tool type and size.

The last value must be taken from the following tables. The correct value can be found at the point in which the corresponding tool dimension row and column intersect. The key in each table indicates the speed limit values for each of the diameter and height ranges for the tools used.

G.7 Machine emergency state reset procedure

(a632_ceb1.0-g.6)

G.7.1 Reset procedure after a cycle stop (Hold)

(ux5-hde_1.0_g.6.1)

When you decide to perform checks during a machining cycle you can activate the "Hold" state with the "stop cycle" key on the mobile push-button panel.

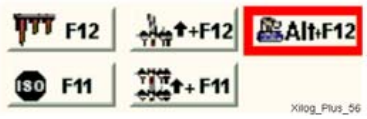
To reset the initial conditions and continue the machining cycle from where it was interrupted, proceed as follows:
- press the "start cycle" key on the mobile push-button panel

G.7.2 Instructions for resetting after an interrupted changeover cycle

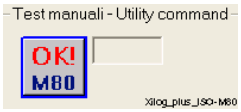
(gamma-2010_3.4_g.7.2)

In the machines the zone close to the tool magazine(s) is inhibited during normal operation.
The machining head can only enter that zone during the tool change step.
If, during the tool change step, the machine stops or is subject to an emergency stop, the axes remain locked in the prohibited zone.
Special procedures must be followed to move the machining head out of said zone and therefore be able to continue machining.

In MDI mode, activate the "Manual tests" page by pressing Alt+F12

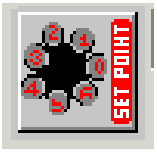


Use ISO code M80 to raise the machining heads and clear the tool magazine.



This code causes:
1) prevention of machining head collisions with tool change magazines
2) upstroke of the relative machining heads

NOTE: One of the following messages can appear for some types of stores:
PLC54: PERFORM TOOL STORE REFERENCE
PLC70: STORE NOT IN POSITION

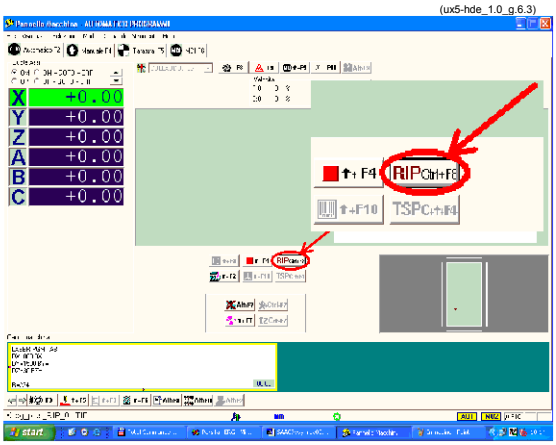


In this case, the store SetUp must be repeated

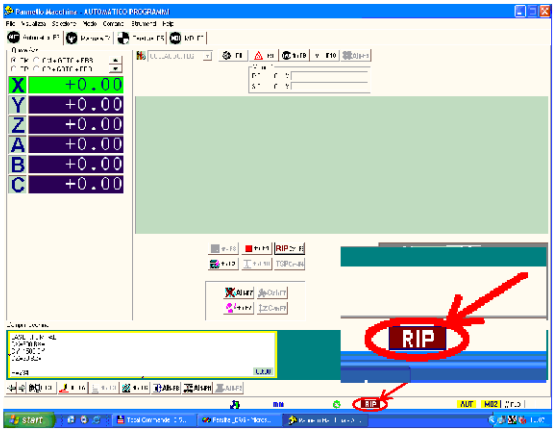
The energy blackout does not reset the machine: to reset to the operating conditions of the machine it is necessary to execute the above described procedure.

G.7.3 Instructions for resetting after an interrupted work cycle

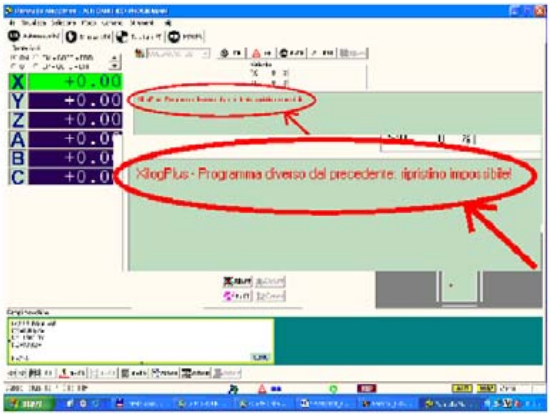
The operator selects and runs a program; at a certain point, for some reason, the program is stopped by the same operator or due to external causes; if the piece is not damaged and the program can start where it was left off, the operator presses the RIP (Resume Interrupted Program) button.



When the RIP button is pressed, the status bar indicates reset mode is enabled.



In RIP mode, the operator can access the MDI, MAN and CALIBRATION environments in the event that the head has to be moved to remove the tool from the workpiece, or for any other reason.
After carrying out any manual operations, the operator accesses the AUTOMATIC environment where, without need to reload the program, he can run with reset by pressing the START button.



The point at which the program restarts depends on when it was interrupted:

1. Program interrupted at the end of a process: the program starts again at the beginning of the next process;
2. Program interrupted in the middle of a process: the program starts again at the beginning of the interrupted process;
3. Program interrupted at the end of movement of the plane: the program starts again at the beginning of the next process;
4. Program interrupted in the middle of movement of the plane: the program restarts at the point it was stopped.

G.8 Programming

(a632_ceb1.0-6.7)

This section provides information to facilitate data entry during programming.
To program the NC refer to the specific manual enclosed.

G.8.1 Defining the work faces and the machining zones

(ux5-hde_1.0_g.8.1)

Figure shows the panel work faces with the X and Y co-ordinates; the Z co-ordinate is used for the machining depth.

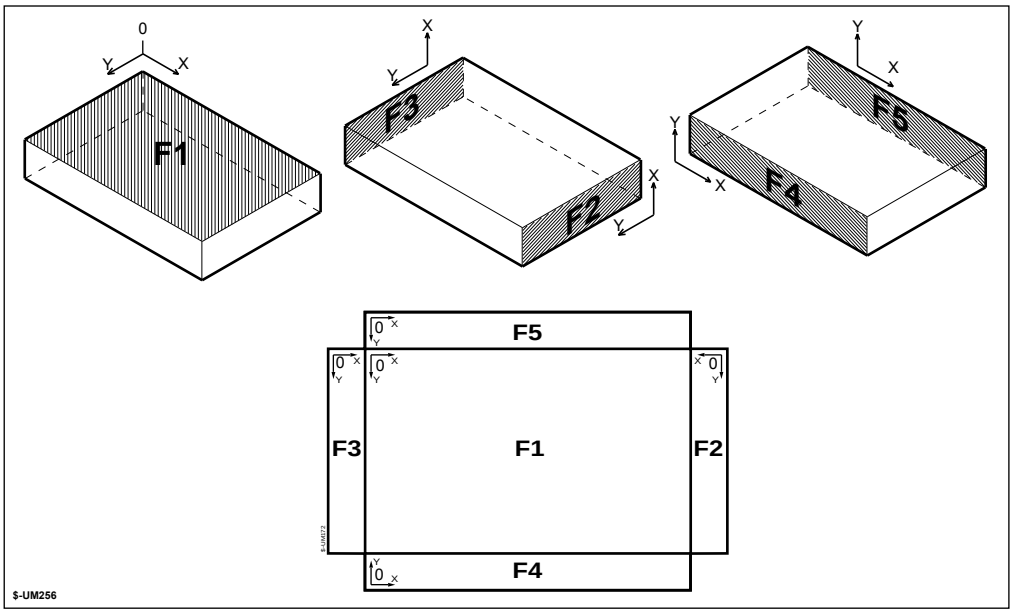
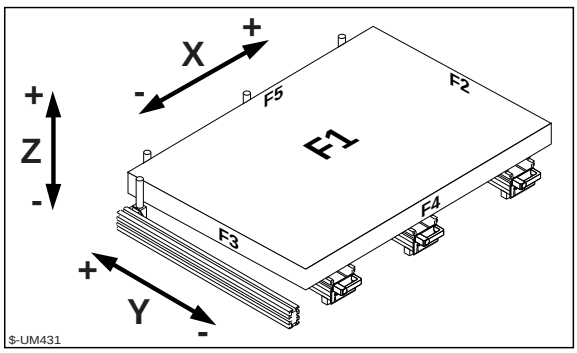


Figure indicates the carriage movement axes with the symbols showing increase (+) and reduce (-) movements.

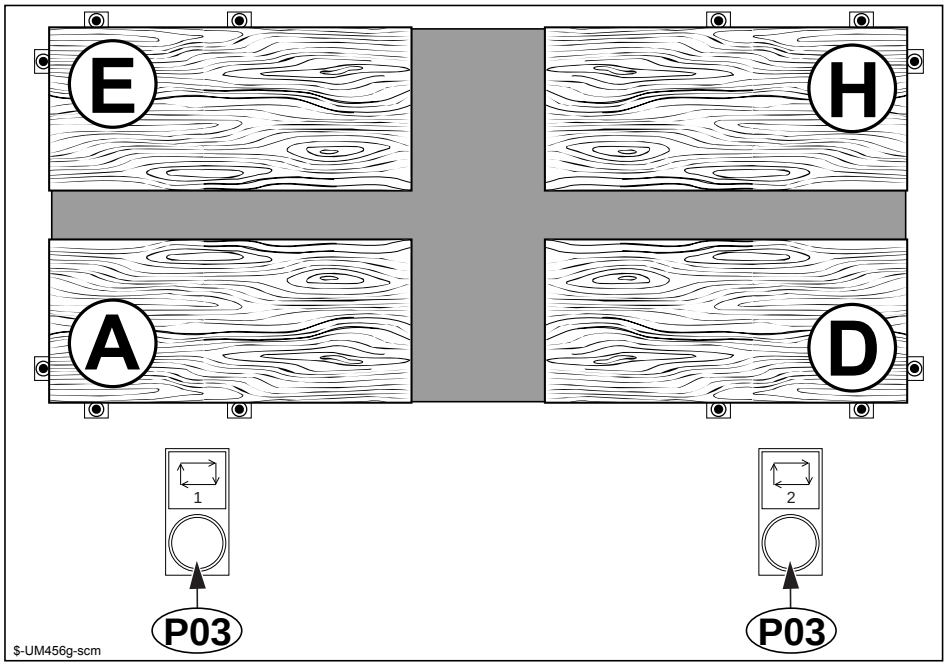


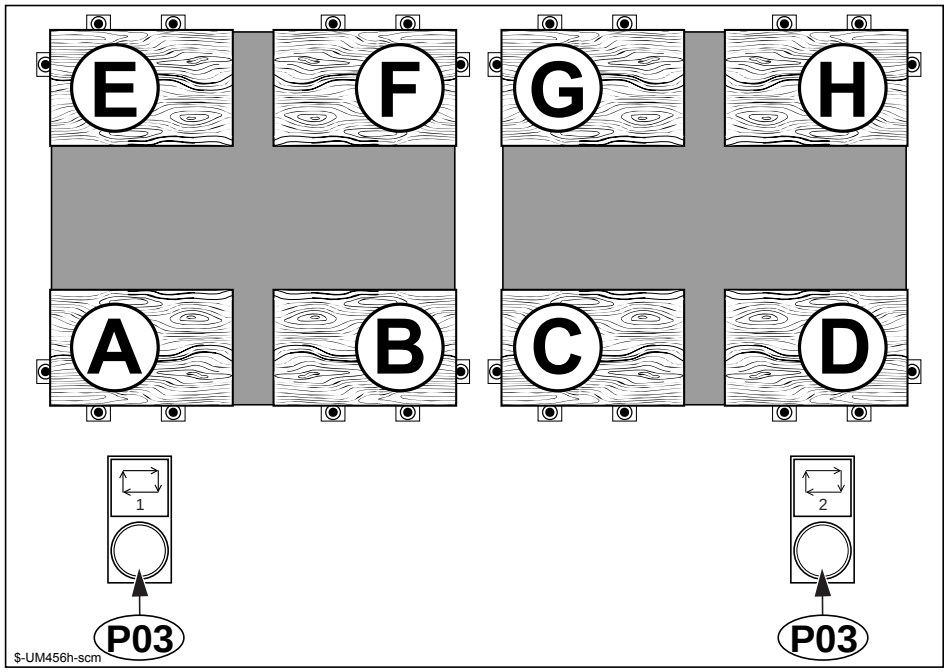
-

(acc-40-fx_2.0_g.8.1a)

The standard version of the machine has two work ranges: A - D / E - H
There is a “P03” start button for each work range, depending on the configuration of the machine.

On request, it is possible to have the central reference stops with the associated work ranges: B - C / F - G





G.8.2 JERK functions

(u2412_1.0_ce_ftc_6.8.1)

To optimise machine use in the various operating stages, a special software function (called JERK) has been enabled, which can vary the machine response (and so its movements) to suit the workpiece machined.
The expert user can optimise the machine response, changing its movements according to the required speed - precision ratio.
The Operator can set the Jerk function adjustment "level", favouring one over the other, or select a neutral situation which takes into account both requirements.
Reference is made to the expert user because use of this function requires an in-depth knowledge of the various machining requirements, as well as the various programming tools (manual program editing is necessary, plus the ability to read the ISO list, in presence of Xilog Plus, and familiarity with list editing tools).

Those who do not want to, or do not feel able to make these changes can leave the SCM default values, which guarantee a respectable compromise between finishing and roughing requirements, without adding to the adjustment in each case.

JERK = a software function able to apply gradual machine acceleration, adjusting its development. This function allows considerably reduced stop and acceleration times, with significant gains in terms of workpiece overall machining times and reduced stress on the machine. The results which can be achieved are linked to the type of workpiece being machined and are more noticeable with a high number of stages involving rapid (G0) movement and acceleration or deceleration. For example, the maximum gain is in boring cycles, the minimum gain in cycles only including routing with consecutive slow movements (G1)]

JERK LEVELS MACRO ACTIVATION (BY OPERATOR)
Only experience and previous machining tests can point to the correct value to be used for each program.
The program line in question may be repeated several times in the same program, each time the operator feels that it is appropriate.
At present, management of such optimisation is not possible using the post-processors distributed by SCM, therefore entry of the programming line and selection of the position in the program must be done by the Operator with manual editing.
If in doubt, leave the default value !

In the presence of the Xilog Plus operator interface, the correct instruction, in compliance with the Routolink syntax, becomes:

SET JERK=xxx (this is the instruction that makes the "JERK" activation request)

This instruction MUST be entered before the workpiece approach "XG0" for the start of machining.

RECOMMENDED VALUES:

"XXX" = 60->BORING
"XXX" = 90->ROUGHING
"XXX" >=160->FINISHING

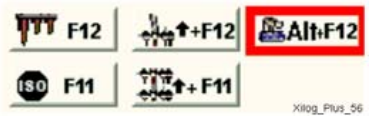
With the interface operator "Maestro" the JERK parameters are activated by the menu "Machine data" using the same advised values

G.8.3 PARK macro

(gamma-2010_3.4_g.8.3)

To set the machine to Park, and therefore disable the photocells:

In MDI mode, activate the "Manual tests" page by pressing Alt+F12



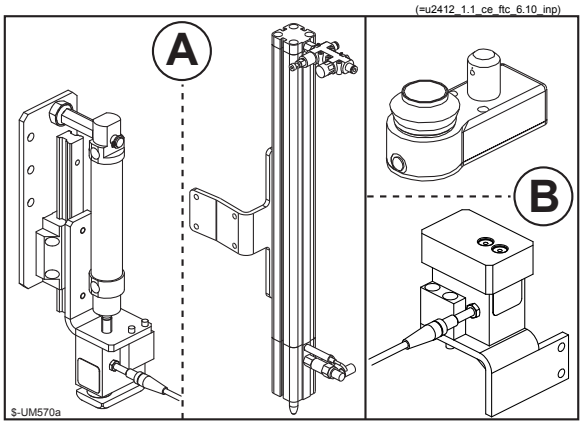
Use the ISO M100 code or click on the PARK-M100 icon to park the axes.

The "PARK" macro can be recall inside a program in order to extract the working wastes and at the end of the program to turn the machine on and to unload the piece.

Remain outside the protected zone until all of the axes have stopped in the Park position.

G.8.4 Measurement Function

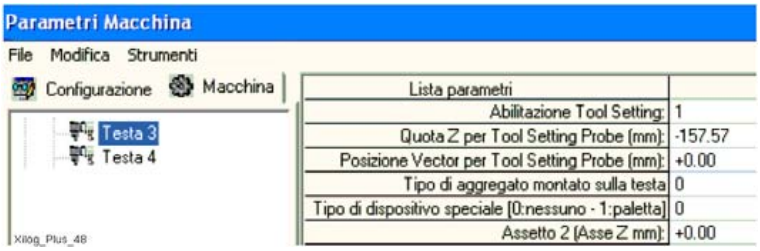
On demand it is possible to install a thickness measurement device of the panel “A” and one for the length measurement of the tool “B”

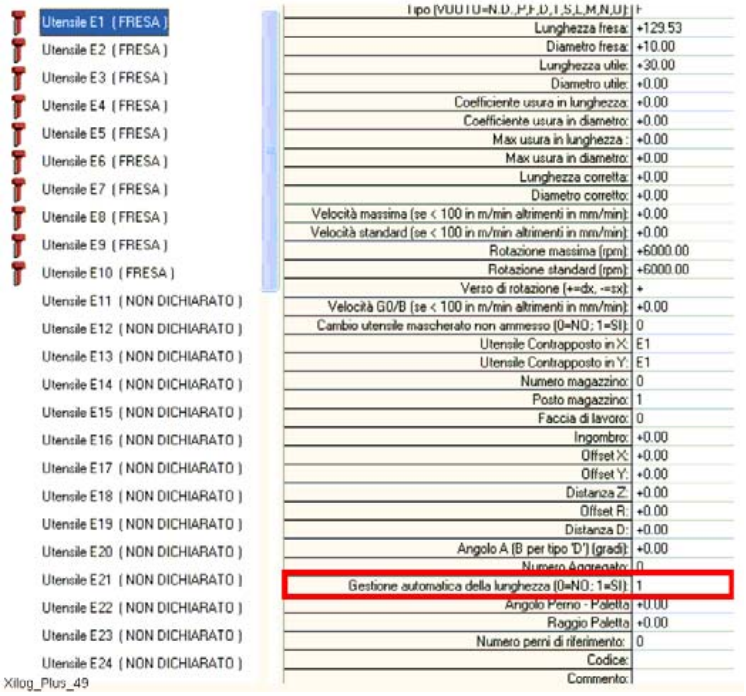


G.8.4.1 Length tool measurement

(u2412_1.1_ce_ftc_6.10.1)

The measurement of the length of the tool consists on the automatic reading of the data and its permanently memorising into the general table of the data associated to the tools.
The measurement function of the length tool is activates/deactivated by the parameters in the figure.





It is necessary to activate both the electro-spindle (that has to measure the tools) and the tool or tools that have to be measured .

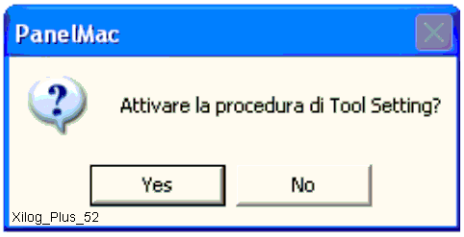
To execute the tool measurement, proceed as follows:
into the page of Automatic (F2) click on the button TSP, or press simultaneously the CTRL+SHIFT+F4 buttons

Only the tools previously activated can be measured.
After the selection of the tools to measure, confirm with OK.

Execute the program as a standard working. During the execution a message on the display inform us of the tool measured:
example : E1 Setting ≥

XilogPlus marks the necessity to execute the measure of the tools installed on the crib at the activation of the cribs editor and at the execution the modifications.

This condition modifies the procedure of the Automatic Modality:
at the "AUTOMATIC" modality input the windows "Selection Automatic modality" does not appear, but it appears the necessity (presumed) of the automatic measurements:



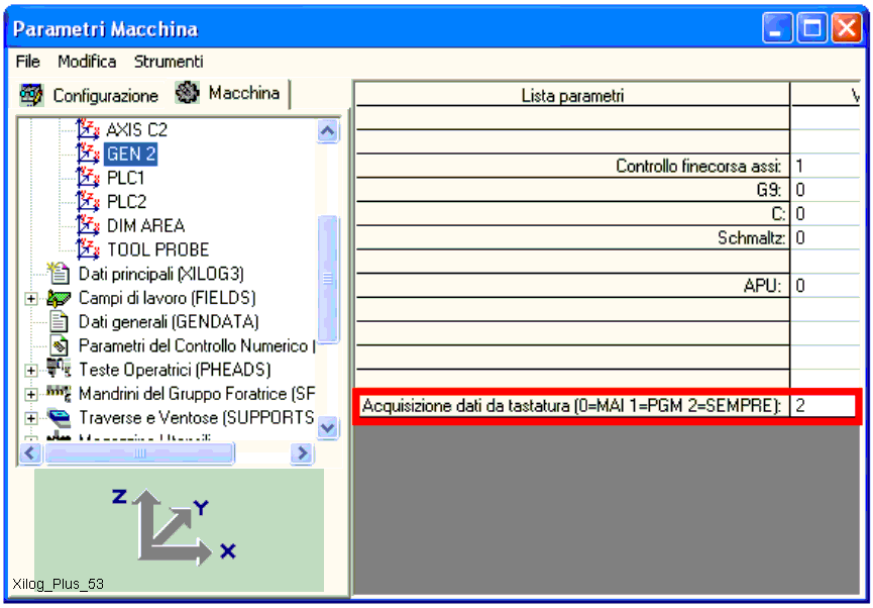
If the reply is NO appear the window "Selection Automatic modality" and everything goes following the standard sequence of the operations; the necessity of the automatic measurements is cancelled and will not appear anymore until a new request of cribs modification .

if the reply is YES everything goes as already described into the automatic measurement of the length of the tool.

G.8.4.2 Panel thickness measurement

(u2412_1.1_ce_ftc_6.10.2)

The automatic measurement of the thickness of the panel allows to use, in the execution of the program of workmanship, the measured value without modifying the original HEADER.
It is possible to measure the “waste panel”
The measurement function of the panel and waste panel is activated/deactivated by the parameter in the figure.

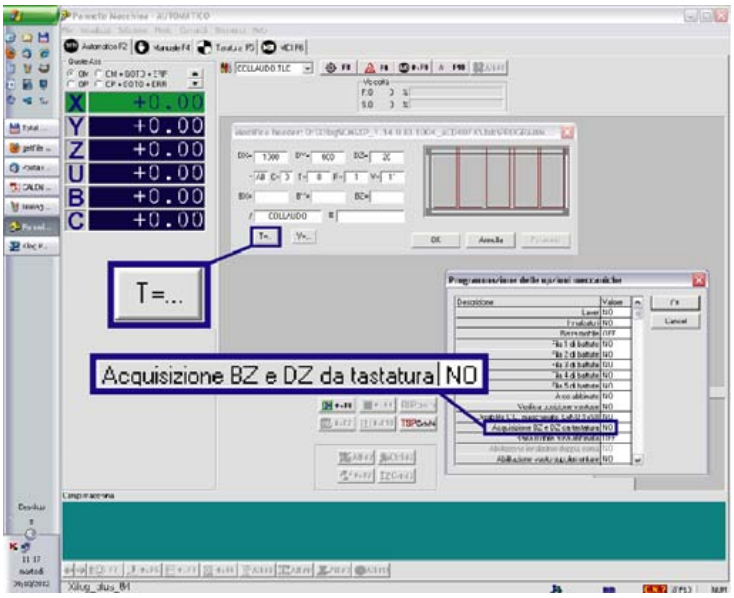


The insertion of the following values in the field "Data acquisition from feeling" it has these effects:

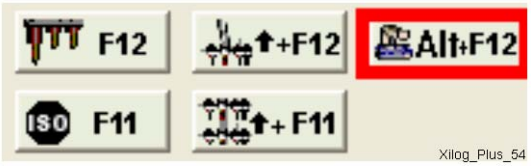
0 = it is possible to perform the procedure of measurement, but the in relief data are not used in the execution of the program.

1 = the possibility is given, after having performed the procedure of measurement, to be able to choose what parameter to use among that bed in automatic and that inserted in the HEADER. In formality "Automatic" to open the menu of the field "T =... " and in the line "Acquisition BZ and feeling DZ" to activate the desired formulation.

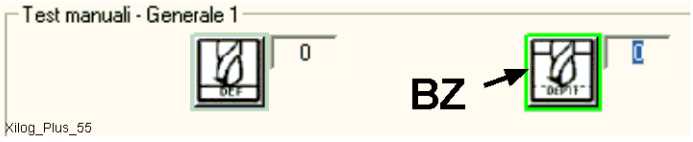
2 = the value is planned automatically read always and it is not more possible to modify the values "DZ - BZ."



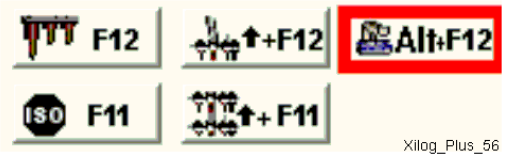
To execute the measurement of the waste-panel, proceed as follows:
- into the page of MANUAL, positioning the X/Y axes into the position to measure;
- into the page MDI click on the icon positioned on the left top, or press simultaneously the buttons ALT+F12



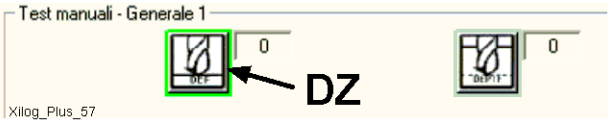
Press the button on the right or execute ISO: G110 B0
With this procedure you write on "BZ" field



To execute the panel measurements, proceed as follows:
- into the page of MANUAL, positioning the X/Y axes into the position to measure;
- into the page MDI click on the icon positioned on the left top, or press simultaneously the buttons ALT+F12



Press the button on the left or execute the ISO: G110 D0
With this procedure you write on “DZ” field

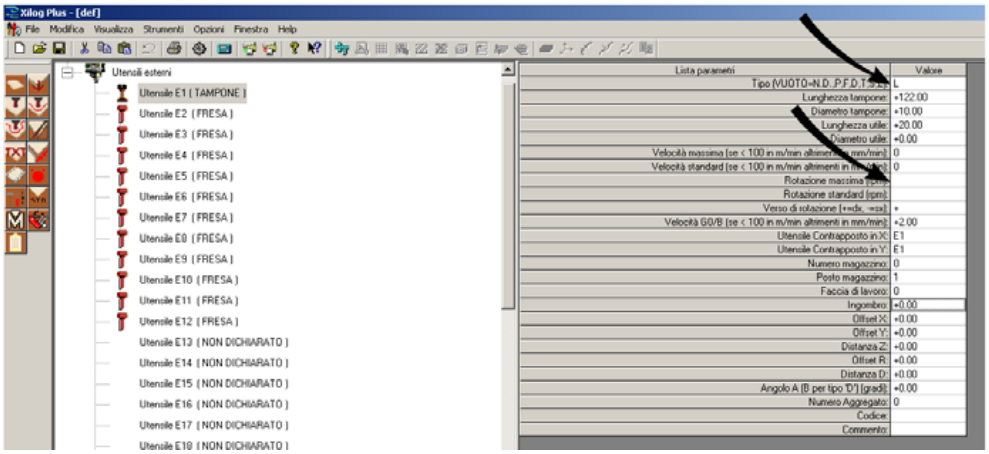


G.9 Sanding tools

(=tamponi_inp)

With "sanding tool" we mean: tools for surface finisching, utilizing on wood working machinery, generally composed of abrasive material reported on plastic support fixed on a metal base.

ATTENTION: This particular type of tool has to be configured in the software of the (Xilog Plus), as "L" type tool.
See table "parameter list" (L = Sanding tool, see manual of Xilog Plus)



It's forbidden to utilize sanding tools without having configured them as "L type tool" on the set up table of Xilog Plus SCM Group S.p.A. refuses all responsibilities for damages caused to persons or things due to the non-observance of the indications detailed on this manual.

ATTENTION: The rollers or sanding brushless are tools particulars, for this reason it is recommended:- DO NOT UTILIZE TOOLS IN WHICH THERE ISN'T MARKED ON THE MAXIMUM SPEED OF ROTATION - DO NOT TRAPASSING THE ROTATION SPEED MARKED ON THE TOOL - DO NOT UTILIZE THIS TYPE OF TOOL FOR WORKING DIFFERENT OF THE ONES FOR WHICH THEY HAVE BEEN PRODUCED

Maximum rotation for this tool is 1500 r.p.m.
La the machine has been configured in order do not accept rotation values more the 1500 r.p.m.

For the use and maintenance of the sanding units consult the indications supplied by the constructor.

G.10 EPP optional pack (Eco Power Pack)

(acc-40-p_1.3_ce_6.14)

The EPP option , (ECO POWER PACK) , contains a set of functions to generally save energy , by operating on various aspects .

The enabled functions are:
1 - Adaptive control of the advancement speed according to the material , tool and capacity required to the electrospindle
2 - Dust extraction Control (only the suction vents involved in the processing are open)
3 - Scalable vacuum system (according to the real blocking requirements) - NOT PRESENT WITH 90m^3/h VACUUM PUMP
4 - Automatic Standby operation of the motors not involved in the processing

1 - Adjustable feed speed control according to the material , the tool and the power required from the electro-spindle:

The operation is in background and is controlled by Xilog : there are two M codes to enable and disable the operation because on the tools the control is not effective.

2 - Dust extraction Control (opening only the extraction outlets actually involved in the machining; with only the main outlet in fixed position)

As well as the independent management of each single extraction outlet, the following hardware information is also supplied (for the exclusive use of the final client, for an improved management and automation of the centralised plant extraction system, that may be controlled with external inverter):

- inside the electrical cabinet, there is an 8-output relay board (clean contact) for 8 PLC outputs, that provide information on how many extraction outlets are open at the same time (max. 7+1 for release) .
- The release output must be used by the client to open an additional extraction outlet that, if all the other outlets are closed due to the machine cycle, avoids the implosion of the extraction system. The additional extraction outlet can also be used to connect a manual extraction tube. In any case with the release outlet there is the information that, even if all the outlets are momentarily closed, the machine is still in automatic and the extraction system (eventually inverter controlled) does not have to be powered off and it must be ready for the next machining cycle .

3 - Scalable vacuum system

The aim is to achieve maximum performance from the pump motor and to adjust its use to the actual vacuum requirements for the type of machining and material.
As the automatic and optimised use of the vacuum system could, in particular situations, provide a performance that is not compatible and sufficiently prepared for extreme locking requirements, there is a two position stable selector on the electrical panel which the operator can use to enable the vacuum pumps mode:

0 = pumps used always at maximum power without optimisation of the operation and without energy saving
1 = pumps used in automatic mode, with search for the best use for the type of workpiece being machined and its transpiration

The manual switch on , extra workpiece program, will also be possible from PLC with special M controls (manual in MDI) .

4 - Automatic operation standby of motors not involved in the machining

This function is activated by checking the extended stop of the axes: after a set time in which the CNC does not detect any movement of the axes, the machine goes in "stand by". (the "axes stopped" reading time can be set as desired, even by the final client) .

(sp_210mm)

INDEX

M7 "Nesting" type work table

(pl-fx-m_1.0_m7)

The "Nesting" table is a single table that thanks to the nesting working A1 allow on the same table the locking of one or more panels simultaneously, and execute different workings on single or more panels. In this way it is possible to produce all the single pieces of a product positioning on the table all the panels to work or positioning a single big panel from which to realize all different parts.
It is possible to work panels of any dimension and shape (Nesting Table and working area dimension permitting) and execute almost all the vertical operations without inserting additional devices (besides the "waste panel").

For a greater safety the working table has been equipped with detecting pressure devices (by a pressure vacuum switch E) for the locking of the panel.
The pressure vacuum switches give to CNC the right locking of the panel: in the absence of sufficient depression the CNC prevents the start of the cycle or stop it during the operation.

The table is of aluminium, perfectly adjusted and levelled during testing.
The threaded holes (120 mm thread) are normally closed with screws (V).

The working table is equipped with:
- machined table A complete with vacuum cables
- pedal push-button panel B
- vacuum system complete with pump C 250m^3/h

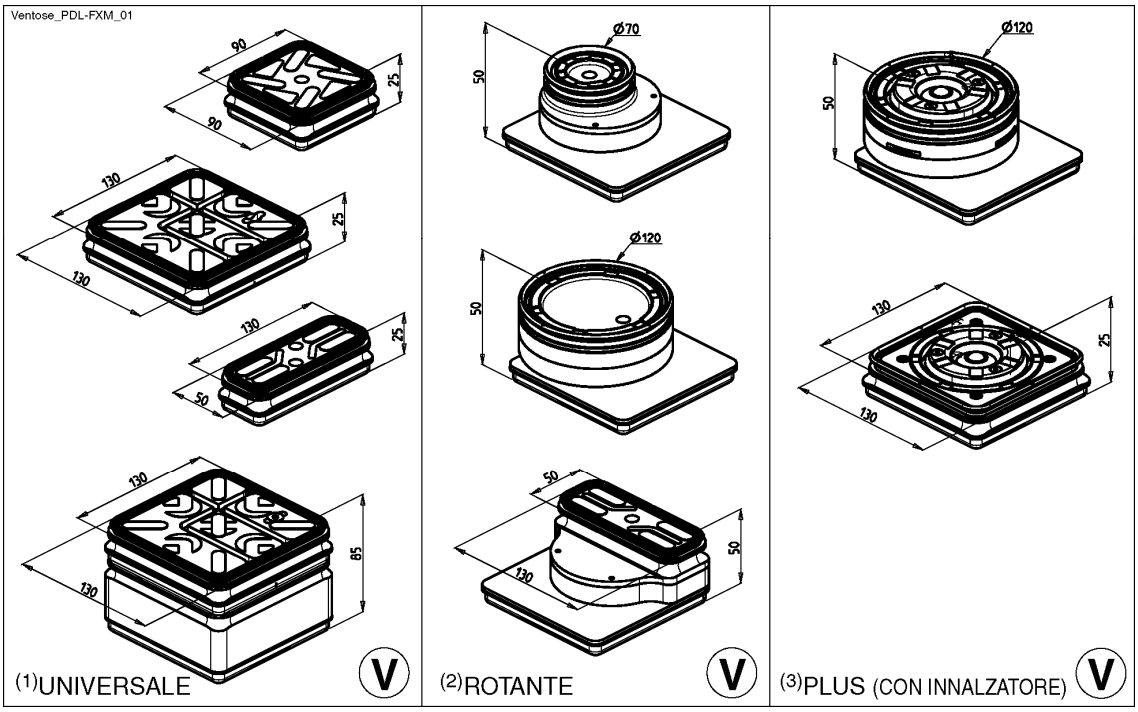
M7.1 Technical Characteristics

(pl-fx-m_1.0_m7.1)

Work table:

Material	=	Aluminium
Work areas standard	=	n° 2 for pendulum machining
Vacuum hole spacing	=	every 120mm (both in X and Y)
Groove spacing	=	every 40mm
Piece clamping	=	using vacuum
Y - Depth of the work area	=	1320mm / 1600mm / 1840mm (depending on machine configuration)
X - Width of the work area	=	3050mm / 3650mm / 4970mm / 6170mm (depending on machine configuration)
V - Blocking devices	=	see figure

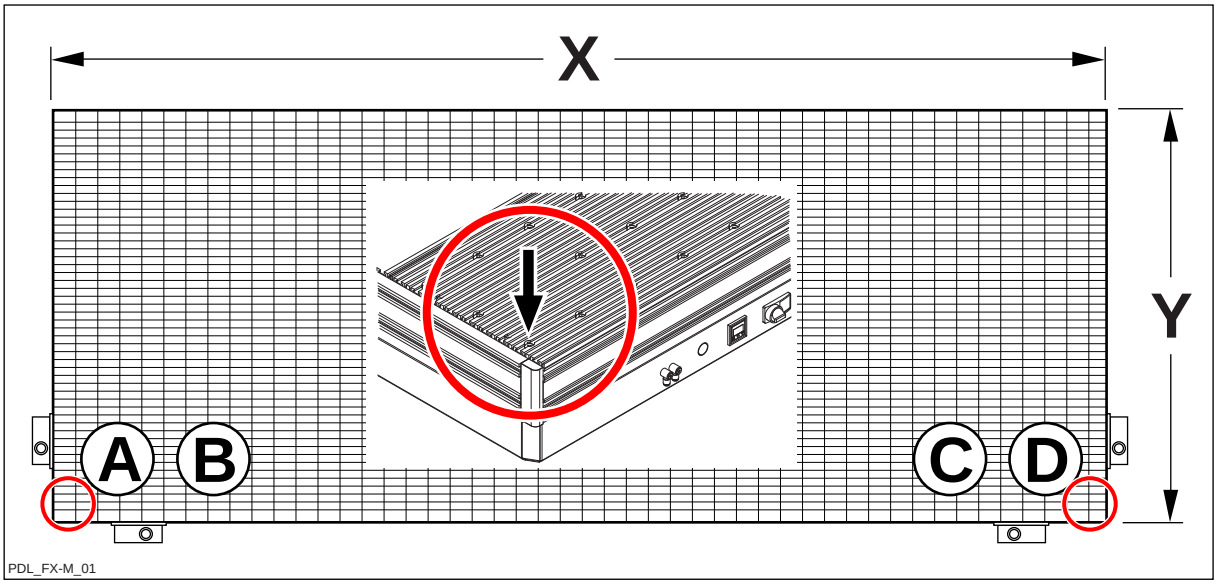
Blocking devices:



(1)Universal
(2)Revolving
(3)Plus (with lifting device)

Machining fields:

Standard = AB - CD

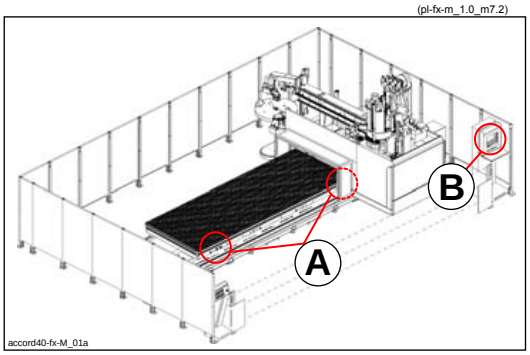


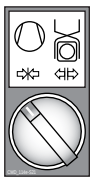
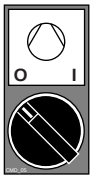
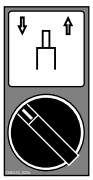
NOTE: The reference zero of the work areas, is reported on the first screw in the angle of the work plane

M7.2 Description of the pushbutton control panel

The configuration of the control panels may differ according to the machine configuration.

The controls are located on:
- Frontal of the work plane A
- Software push-button panel B (Paddle screen)



Ref.	Picture	Description / Function Use and / or indication
S21a		Backlit switch / to lock-unlock the piece: this turns on when the workpiece is locked in position =>|<= lock / <=| |=> unlock
V01a		digital pressure vacuum switch / Visualise the depression of the working table: if it is enough it allows the working operations.
S01a		2-positions select / It is used for activating/deactivating the vacuum pump 0 = disconnected I = inserted
S22a		Selector / It commands the lifting - lowering of the inside stops of the work plane -

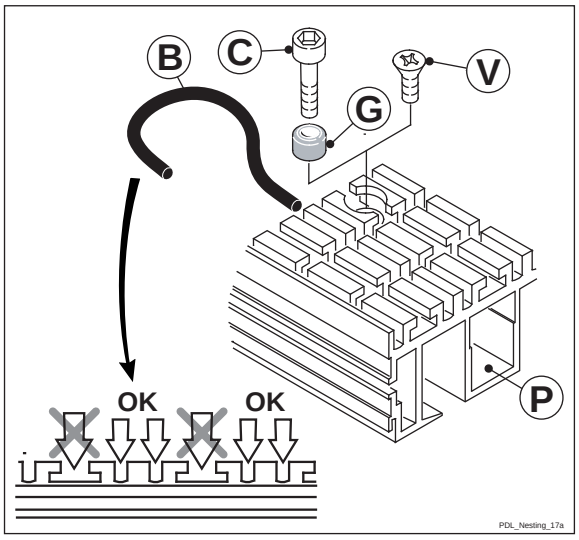
M7.3 Work table utilize

(pl-fx-m_1.0_m7.3)

NOTE: the panel to be machined can be clamped to the nesting table in three ways:
- directly to the aluminium table
- by using an interfacing panel (protective panel) between the aluminium table and the panel being machined
- by using special optional accessories (modulset or suction cups)

To lock the panel directly on the aluminium table it is necessary to delimit the area of the panel to work with a seal B .

WARNING: this method is only suitable for machining on face 1 and not for THROUGH machining.



If the piece is fastened directly to the table the screws (A) in the holes that are to be covered should be unscrewed a number of turns and the gasket (B) should be inserted in the grooves to form a closed perimeter.
N.B. The grooves must only be used to house the gasket.
N.B. The gasket is of fundamental importance if the workpiece is to be secured using a vacuum.
It must not stick too far out from the table: the force needed to press it into the groove is subtracted from the pressure required to secure the piece.

When working with the vacuum system if a piece holder template is used a groove for the gasket must be cut right round the edge of it.

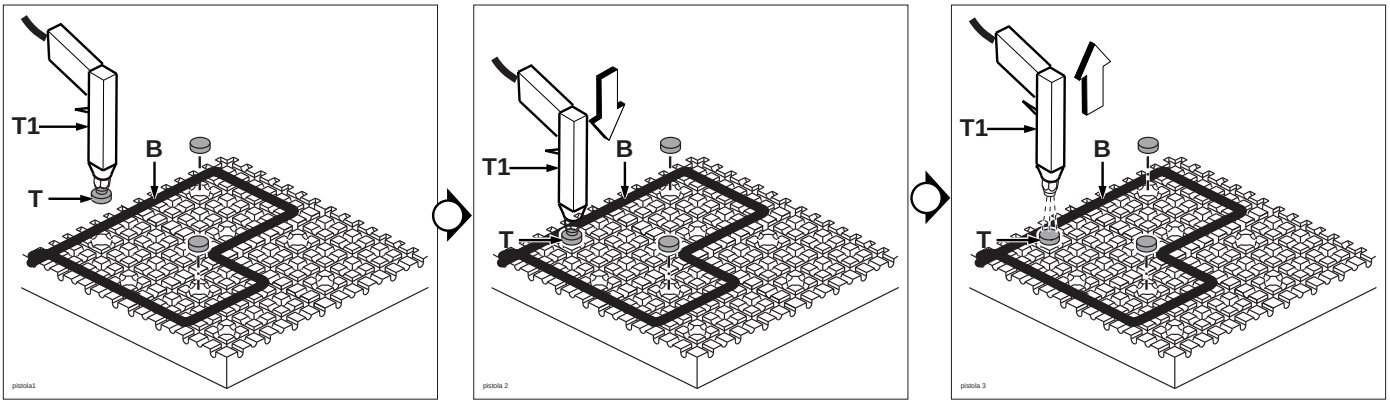
It is also advisable to fasten it to the table using screws (C) that are screwed into the screw holes (V)
N.B. The screws must not screwed in more than 20 mm, as otherwise they may make contact with the table underneath (P).
To avoid drops in the vacuum system, every securing screw (C) must be fitted with a rubber seal (G).

M7.3.1 Closing magnetic tap (optional)

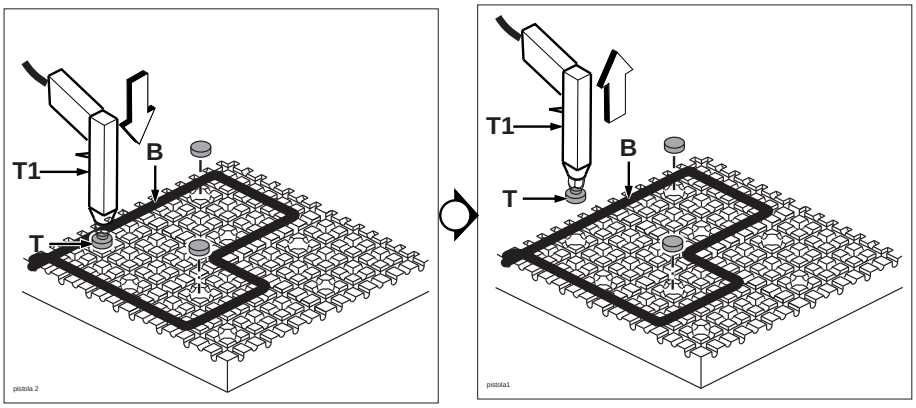
(acc-40-p_1.0_ce_7.1.1)

On request, the work top may have, instead of screws V, a hole sealing system for the vacuum with magnetic plugs T.
The insertion and extraction of magnetic plugs is performed by a T1 special air gun whose nozzle is fitted with a magnet.
The same gun can be used to clean the work top before inserting or extracting the plugs.

INSERTION



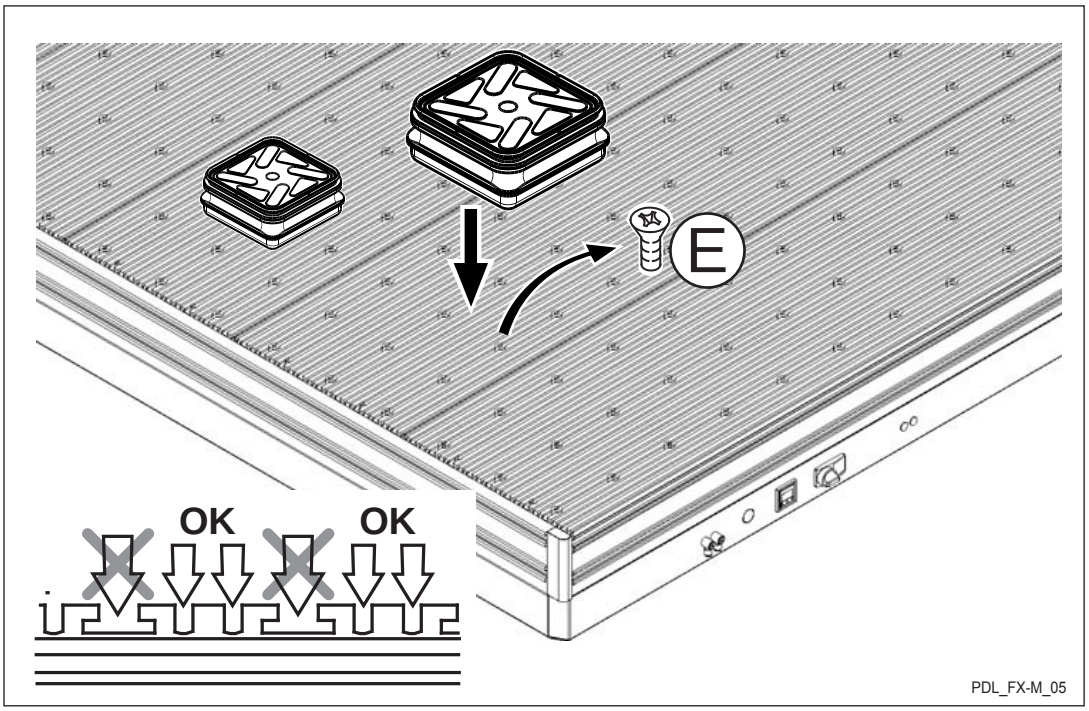
EXTRACTION



M7.3.2 Clamping with suction cups (Optional)

(pl-fx-m_1.0_m7.3.2)

To install the suction cups on the table:
- extract the screw E or the plug T with the magnetic tool B
- positioning the cup over the open hole
- verify that there are not others plugs extracted outside of the vacuum cups



V5.1 "MODULSET" devices (Special)

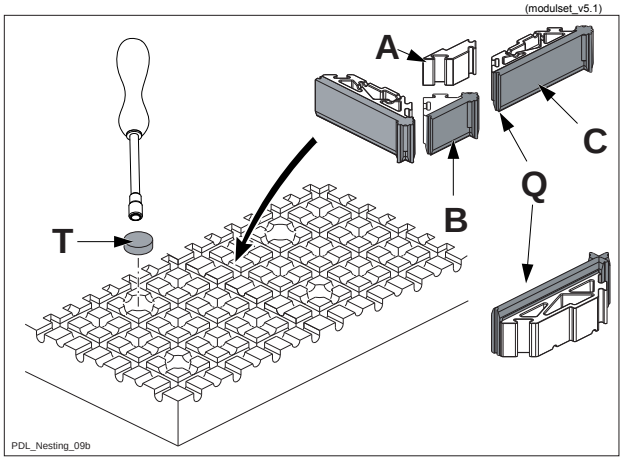
(modulset_v5.1)

CLAMPING WITH "MODULSET" DEVICE

Using these accessories it is possible to form any type of shape.
They are modular, modelled in plastic, rubber and aluminium alloy.

There are three types:
- A - joint element
- B - corner joint element
- C - wedge

The are inserted with the Q edge turned towards the bottom, inside the work table grooves to form the desired shape.
Once placed, with the magnetic tool extract the plugs T in the delimited area must be unscrewed.



M7.3.3 Clamping with waste board

(pl-fx-m_1.0_m7.3.3)

To use the Nesting table interfacing a "protective panel" between aluminium table and the panel to be machined, follow the indications below:

- place an MDF or chipboard panel E on the Nesting table F, taking care not to scrape it on the seal G to avoid ruining it:

when you have positioned the panel E, it is important to check that the seal is correctly positioned in its seat.

This panel which interfaces between the Nesting table and the panel to be machined is commonly known as the "protective panel" because it protects the Nesting table during machining passes on the panel being machined.
The type of protective panel must be selected by the user bearing in mind that the type of material and thickness alter the transpiration properties with consequent changes in the efficiency of locking for the panels machined.

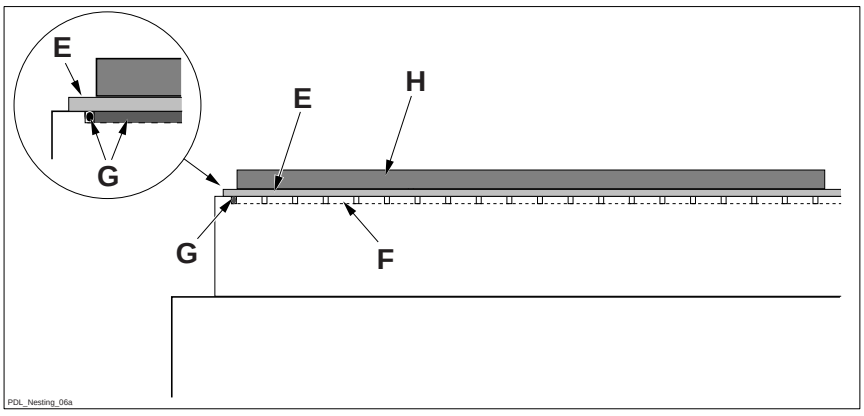
- position the panel to be machined H and turn selector C to right to clamp the panel.

WARNING: The panel to be machined has to cover al least 95% of the surface of the area delimited by G gasket on the aluminum table; In case in which, the panel is not big enough to cover this area, to work it, it's enough to place other panels on the waste board panel in the same area.
To reach a better depression phase of the panel, it's recommended to seal the edge of the panel by glues or edges application.

IT IS FORBIDDEN TO ADJUST THE PRESSURE SWITCH.

WARNING: the machining depth must not exceed 4mm below the table E so that the fastening screws remain untouched.

WARNING: On the machine the Offset in "Z" is always defined from the aluminum table: when a waste board panel is utilized it's necessary to modify the Header of the program or the offset of the panel increasing the value with the thickness measure of the waste board panel.
If the panel is mounted by the manufacturer, the offset in "Z" it is defined from the plan of the martyr panel.



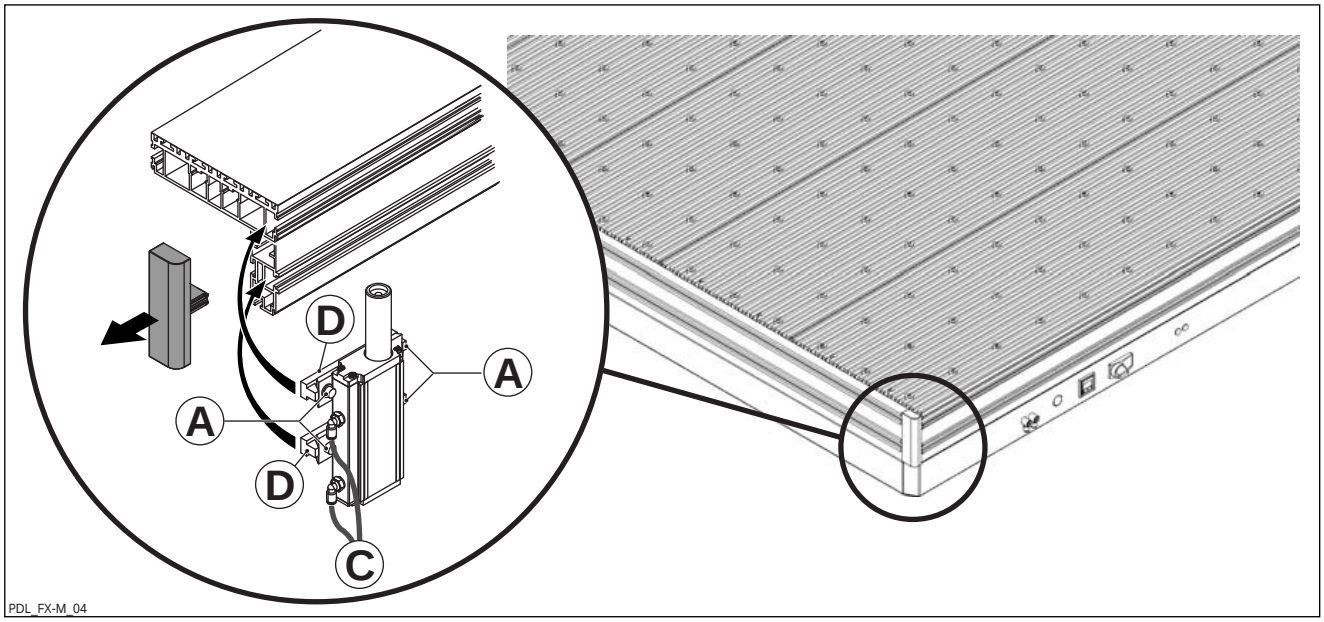
M7.3.4 Perimeter reference stop

(pl-fx-m_1.0_m7.3.4)

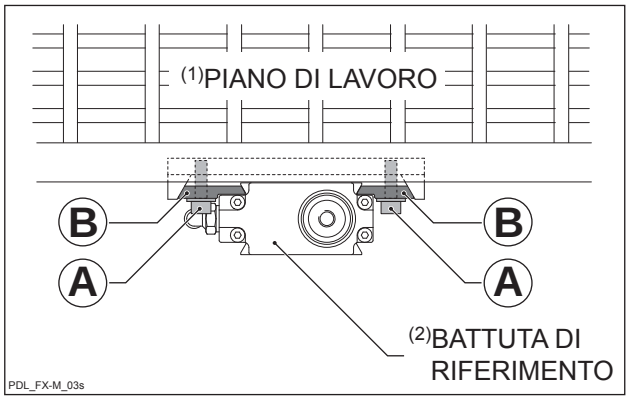
The perimeter reference stop is automatically disabled when the piece program is started by pressing CYCLE START.

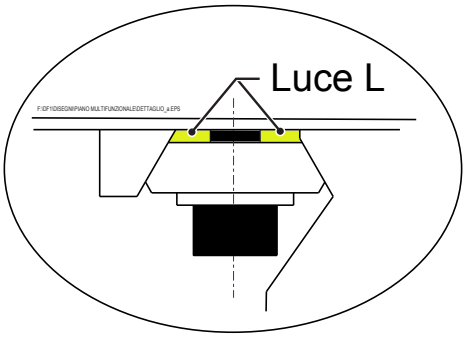
IMPORTANT: do not manhandle or change pneumatic cables (C fig.sotto), an incorrect function constitutes a danger of collision between the tool currently operating and a stop rod.

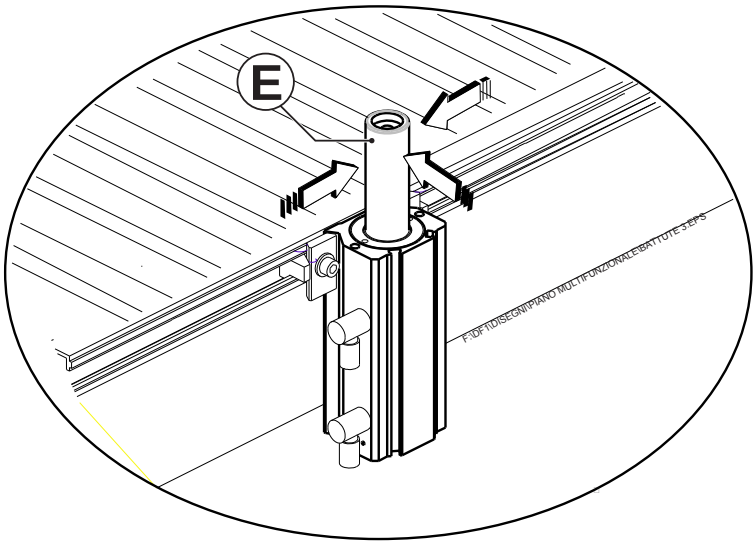
To position the stop on the side of the table you must:
1) Loosen the screws (A)
2) insert the stop into the throats at the side of the table using the rules (D) .
3) gradually tighten the screws (A) to lock the stop in position.



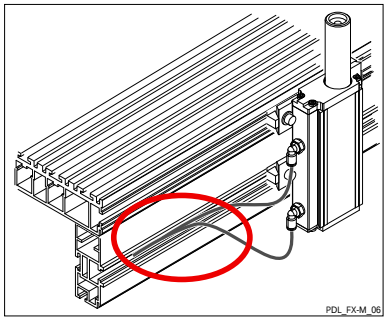
IMPORTANT: Tighten the screws A gradually. The modules B must be perfectly wedged between the sloping surfaces. Once the screws have been completely tightened, check that the distance "OPENING L" is equal for both screws.(Check that, when trying to oscillate the rod E , the stop does not move).



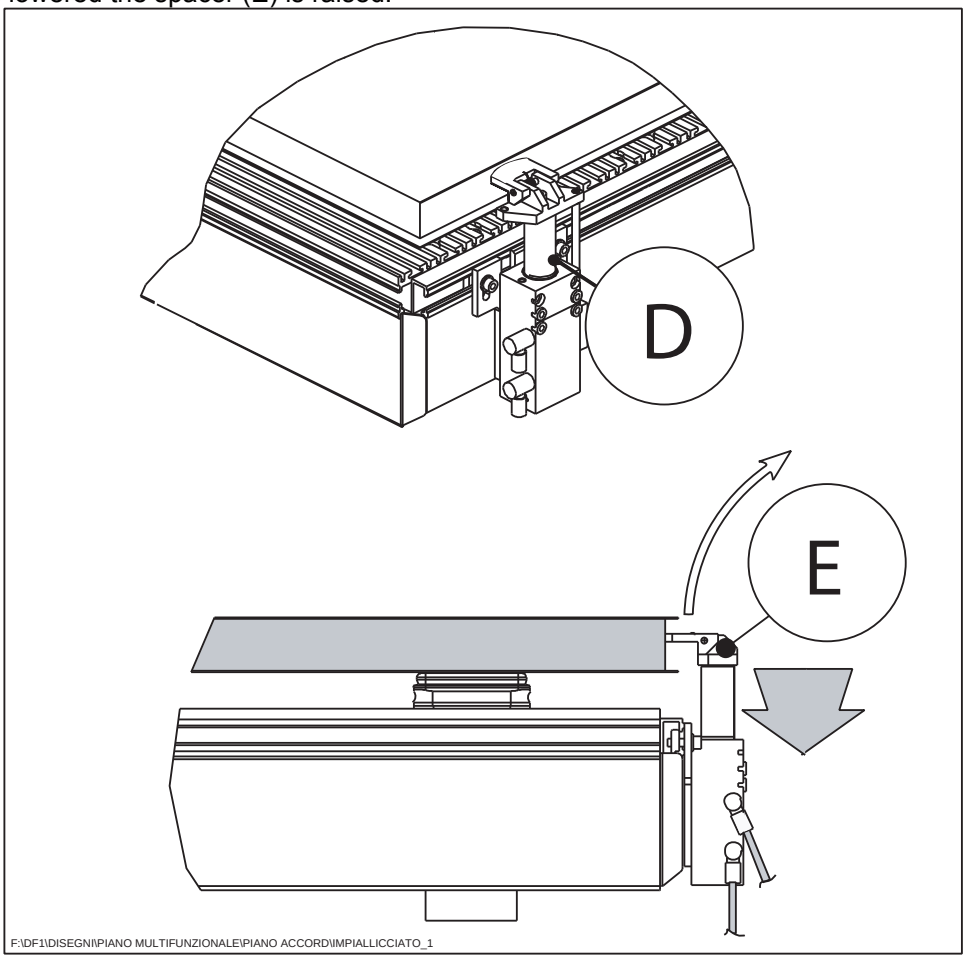




CAUTION: arrange the pneumatic connection hoses for the stops in the hollow at the side of the table. In this way, the hoses are not cut by moving parts during machining.



The veneered board stop (D), enables a piece like the one shown in figure to be positioned using a spacer.
When the stop is lowered the spacer (E) is raised.



M7.3.5 Pneumatic connections

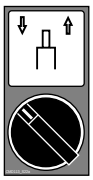
(pl-fx-m_1.0_m7.3.5)

The pneumatic selector described may not be present depending on the machine set-up.

The pneumatic connection (following figure) allows the interception of the perimeter stops.
In this way the stops can be excluded if they render loading the workpiece difficult.

IMPORTANT!!: when a new connection is being made always make sure that the stops are functioning correctly:
In the piece loading stages the rods must be in the "up" position; as soon as the piece is blocked (using the C selector) the rods move back down.

WARNING: any additional equipment not supplied by SCM Group S.p.A., must comply with the Regulations in force in terms of machine safety.
SCM Group S.p.A. declines any responsibility for damages due to the non-observance of this indication

Ref.	Picture	Description / Function Use and / or indication
S22a		Selector / It commands the lifting - lowering of the inside stops of the work plane -

M7.4 Workpiece loading and unloading

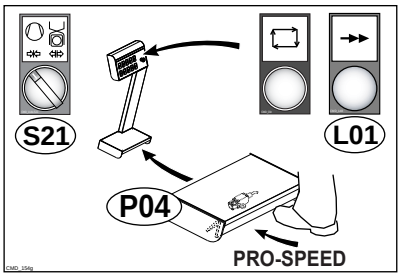
(pl-fx-m_1.0_m7.4)

For correct loading and unloading of the workpieces to be machined, proceed as follows:

- Switch the machine to Park.
- Load the panel to be machined on the worktable.
- lift the reference stops using the Lock/Release selector "S21"
- Reference the panel using the perimeter stops (when they are mounted).
- Lock the workpiece in position with the vacuum using the Lock/Release selector "S21" (the illuminated selector indicates that the piece is blocked);

- EXIT THE SAFETY PHOTOCELL FIELD (PRO-SPEED)

- press the "P04" button (PRO-SPEED) and the "start cycle" button simultaneously: the light "L01" switches on and at this point piece machining has been "booked" and it will be carried out by the machine.



ATTENTION: once the piece has been blocked safely, the indicator light "S21" turns on. No other operation can be performed except releasing the piece by selector "S21" and losing the given booking.

ATTENTION: depending on the piece locking area on the surface, it will be necessary to press the "cycle start" button of area 1 or area 2.

Always check that the perimeter stops are functioning correctly. If a stop gets stuck and does not descend completely it could collide with the tool.

To release the workpiece:

- Switch the machine to Park;
- Turn the Lock/Release selector "S21"

WARNING: keep your hands out of the range of the perimeter stop action. This is to avoid getting your finger or hand squashed between the stop and any obstacles.

Important: both CYCLE START 1 pushbutton and CYCLE START 2 pushbutton if pressed when the piece is not held in place, cause the machine to go into park and message "vacuum required" appears.

(sp_210mm)

INDEX

P2.1 8,5/13 Kw (12/17 Hp) Electric spindle HSK 63 connector

(em-hsk_8,5kw_1.0_9.30)

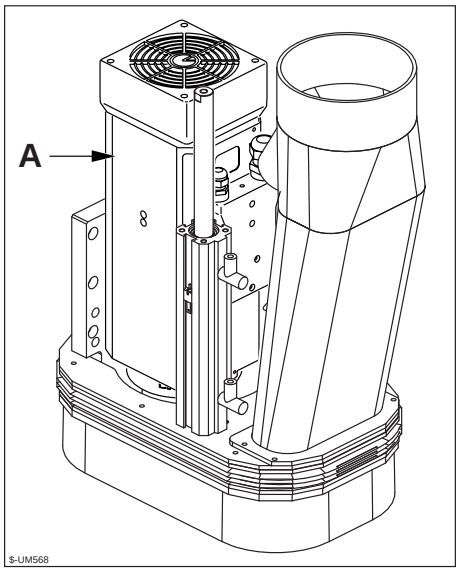
The operating unit is an electrospindle for tools with HSK63 attachment
the main components are:
- an electrospindle at alternate current A for the high frequency functioning
- an inverter B for the continuos variation of the rotation speed

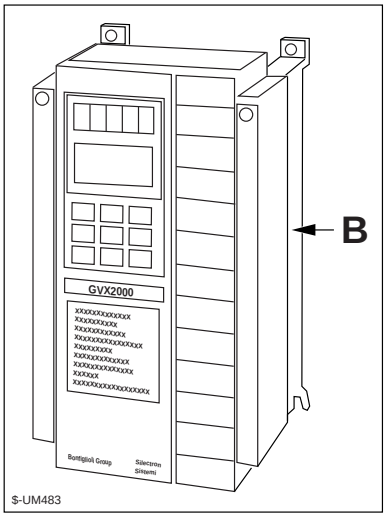
The electro-spindle has a clamping system designed for DIN 69893 type tool tapers. A spring-loaded tie-rod inside the spindle ensures a perfect clamping fit between the tapers and guarantees full transmission of all motor power to the tool.
Microswitches are triggered to inform the CNC unit if the tool is clamped or released and if the electro-spindle is stopped or rotating. If the CNC does not receive this information or if it receives incorrect values for these parameters, it will stop the machining cycle.

An air jet inside the spindle shaft keeps the tool taper and the collet clean during the clamping.

The CNC unit is programmed so that the machine can only be started when the tool holder taper is correctly engaged. If the taper is not correctly engaged the machine will not start and a fault message for the operator will be displayed.

Electro spindles made by SCM Group S.p.A are fitted with high precision bearings lubricated with grease for rotating at high speeds requiring no maintenance (lubrication "grease for life").





. -
(em-hsk_8,5kw_1.0_9.30a)

EAR DEFENDERS: use when the material being machined or the machining conditions raise the noise level above 80db.

GLOVES: use when handling tools.

GOGGLES: use during machining to protect eyes from shavings flung out.

WARNING - RESIDUAL RISKS:

- Ejection of all or part of the workpiece (splinters)

- Ejection of all or part of the tool

- Danger caused by programming errors that could cause the tools to crash against the fixed parts.

- Danger caused by programming errors that could mean that wrong tools are called.

- Danger caused by errors in programming machine equipment (e.g. associating the wrong parameters to a certain tool code)

- Danger due to incorrect tool fitting

- Erroneous tool is loaded when this is requested directly by the machine.

- Erroneous tool is loaded into the tool-holder store (if there is one on the machine).

- Danger of tool locking screw or ring nut slackening.

Generic programming errors, including:

- always ensure that the speed and direction of the tool rotation are correct!

- pay attention to the machining depth and the tool advance speed

WARNING: ENSURE THAT ELECTRO-SPINDLE IS FITTED WITH A TOOL TAPER AT ALL TIMES. LEAVING THE SPINDLE WITHOUT A TOOL TAPER:

- will allow the entry of shavings and sawdust into the spindle

- will cause damage when the spindle is rotated

If the electro spindle is not used for various days, or it is always used with the same tool (and therefore there is no regular change cycle for the tool) a tool change cycle must be performed every 3-4 days in order to prevent the tool-holding cone to remain blocked inside the electro spindle.

IT IS VERY IMPORTANT THAT REGULAR CLEANING AND LUBRICATING OPERATIONS BE PERFORMED ON THE CONE AND THE ELECTRO SPINDLE AS INDICATED IN THE MAINTENANCE CHAPTER.

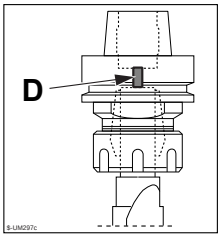
SPECIAL PRECAUTIONS:

- ***The electrospindle must not be started up without tightening the tool and tool taper.***
- ***The electrospindle cannot be used for materials other than those indicated in section 1.***
- ***The electrospindle cannot be used with a dented or damaged tool taper or with a bent tool or missing parts.***
- ***The connecting surfaces between the spindle shaft and the tool taper must not be dirty. All foreign matter must be cleaned off them (shavings, dust, grease, oxide, etc.).***
- ***Directing jets of compressed air inside the spindle shaft is strictly forbidden.***
- ***To be able to move the Machining Head manually, follow the instructions in the section on "Manual mode commands"***

-

(grano_su_hsk)

CAUTION: Check that grub screw D is always fitted in the tool-holder spindle: if it is not fitted dust can get into the electro-spindle and cause malfunctions and damage.



P2.2 Technical Characteristics

(em_prisma_acc40_1.0_ce_8b.1)

CONDITIONS IN THE WORKING ENVIRONMENT:
the temperature of the environment affects the precision and repeatability of the equipment. The nominal machining precision is relative to an environment temperature of 20°C (+/- 5°C).

The electrospindle has a thermal probe which checks the motor temperature. When the safety limit temperature is reached the machine stops in the Emergency state. The warning message appears on the screen.

Wait until the temperature falls before restarting the machine.

- -
(em_hsk-8,5/13kw_1.1_8a.1)

8,5 Kw (12 Hp) Electric spindle

Toolholder attachment type	HSK 63
Polarity	n°4
Spindle rotation speed	1500÷24000rpm
Motor power	8,5kW (12Hp) between 12.000 rpm and 18.000 rpm
Rotation speed control	from CNC via an inverter
Rotation	right/left
Cooling system	with fan
Maximum tool sizes	see chap. D - "Max dimensions of tools"

13 Kw (17 Hp) Electric spindle

Toolholder attachment type	HSK 63
Polarity	n°4
Spindle rotation speed	1500÷24000rpm
Motor power	13kW (17Hp) between 12.000 rpm and 18.000 rpm
Rotation speed control	from CNC via an inverter
Rotation	right/left
Cooling system	with fan
Maximum tool sizes	see chap. D - "Max dimensions of tools"

- -
(=em-hsk_8,5kw_1.2_9.30.1a_inp)

LENGTH/DIAMETER/MAX.ROTATION SPEED REFERENCE TABLES

CAUTION: the specifications to be taken into consideration for the unit used to machine the workpiece (electrospindle+tool) must be the minimum ones: see the table below for electrospindle data and for the tool see the data stamped on the tool itself.
CAUTION: ONLY USE THE TOOLS INDICATED IN SECTION - "A - USABLE TOOLS"
Spindle rotation speeds, machining depths and forward speeds must be selected with great care by the operator on the basis of tool specifications and type of material and maximum tool speeds must never be exceeded.

THE MACHINE ON WHICH THE ELECTRO-SPINDLE IS MOUNTED, THE ALTERNATIVE CONFIGURATIONS OF THE MACHINING HEADS AND THE TOOL HOLDER MAGAZINES, AFFECT THE ACTUAL MAXIMUM DIMENSIONS OF THE TOOL WHICH CAN BE USED: SEE SECTION D "MAXIMUM TOOL DIMENSIONS"

In the following chapters are reproduced the charts referred to the two toolholders types:

- TOOLHOLDER SPINDLE WITH Ø30mm SHAFT FOR BORED TOOLS
- TOOLHOLDER SPINDLE WITH "ER32/40" COLLET FOR TOOLS WITH CYLINDRICAL HOLD

P2.2.1 Choosing a rotation speed

(em_11-12-18kw_1.0_8e.1.1)

The machine operator must select the electrospindle speed so that it is LESS (reference standard prEN 847-3 amendment A.1):

· than the maximum rotation speed permitted for the tool;
· than the maximum rotation speed permitted for the toolholder;
· than the maximum rotation speed permitted for the electrospindle, selected on the basis of the tool type and size.

The last value must be taken from the following tables. The correct value can be found at the point in which the corresponding tool dimension row and column intersect. The key in each table indicates the speed limit values for each of the diameter and height ranges for the tools used.

Case 1:

- tool used: TYPE A TOOL saw disc

The tables containing the maximum operational speeds as the tool (TYPE A saw disc) dimensions change are set out below, as well as the tool material selection according to certain rotation speeds set at the shaft and the dimensions selected for the tool.

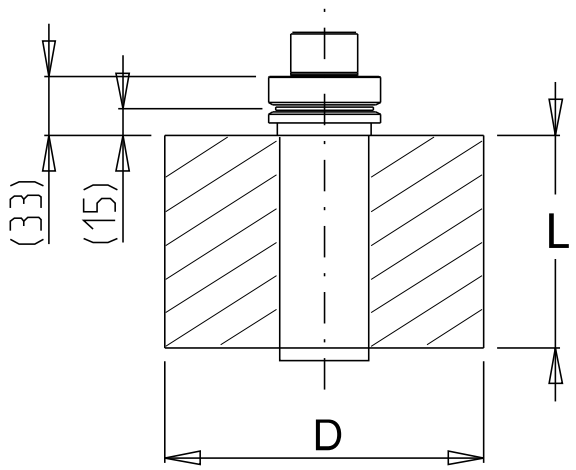
IMPORTANT: the tables are found in appendix 1 at the end of the manual and refer to the electrospindle performance and have been calculated in reference with perfectly balanced and conforming tools.

ATTENTION: The max dimensions of the tools that can be mounted on the electrospindle vary according to:

- type of machine
- work units / tool holder magazines mounted

Refer to "Max tool dimensions" in the "Technical data" section

TOOL TYPE "A":



Tool: steel cylindrical cutter,
Maximum operative speed

Elettromandrino / Electrospindle code 2936230036D / 37F (Tool FE)														
	90	100	110	120	130	140	150	160	170	180	190	200	210	D[mm]
40	22281	21032	19837	18709	17649	16659	15736	14875	14074	13327	12629	11978	11369	
50	20742	19361	18085	16914	15841	14859	13960	13135	12376	11677	11031	10434	9879	
60	19263	17807	16499	15326	14272	13323	12465	11687	10979	10331	9738	9192	8688	
70	17855	16367	15062	13914	12897	11994	11185	10459	9802	9206	8662	8165	7708	
80	16523	15037	13758	12651	11683	10831	10075	9401	8795	8248	7752	7299	6884	
90	13446	12412	11489	10663	9922	9257	8657	8114	7620	7170	6758	6379	6030	
100	12587	11542	10626	9819	9105	8470	7902	7392	6931	6512	6131	5782	5461	
110	11760	10719	9822	9042	8360	7758	7224	6746	6317	5930	5578	5257	4963	
120	10970	9946	9077	8330	7682	7114	6614	6169	5771	5412	5088	4793	4523	
130	10222	9225	8388	7677	7065	6532	6065	5652	5283	4952	4653	4382	4134	
140	8517	7805	7183	6637	6155	5727	5345	5003	4694	4414	4160	3927	3714	
150	8020	7313	6704	6175	5713	5306	4945	4623	4333	4072	3835	3619	3422	
160	7544	6848	6256	5747	5306	4920	4579	4277	4006	3763	3542	3342	3159	
170	7091	6410	5838	5351	4932	4567	4246	3963	3710	3483	3278	3092	2922	
180	6661	6000	5451	4986	4588	4244	3943	3677	3441	3229	3038	2866	2709	
190	6156	5545	5037	4608	4241	3923	3645	3400	3183	2988	2812	2653	2509	
200	5505	4990	4555	4183	3862	3582	3335	3117	2922	2747	2589	2445	2315	
210	5206	4703	4282	3925	3618	3352	3119	2913	2729	2565	2417	2283	2160	
220	4923	4433	4027	3685	3393	3140	2920	2726	2553	2399	2260	2134	2020	
L[mm]														

	220	230	240	250	260	270	280	290	300	310	320	330	340	350	D[mm]
40	10798	10263	9760	9288	8844	8425	8031	7659	7309	6978	6666	6371	6093	5829	
50	9363	8882	8433	8013	7620	7251	6905	6580	6274	5986	5715	5460	5219	4992	
60	8222	7789	7387	7012	6662	6335	6029	5742	5473	5220	4982	4758	4547	4349	
70	7286	6897	6535	6200	5887	5596	5323	5068	4830	4606	4395	4198	4012	3837	
80	6503	6151	5826	5525	5245	4984	4741	4513	4300	4101	3914	3738	3573	3418	
90	5708	5409	5132	4874	4634	4409	4199	4002	3818	3644	3482	3328	3184	3048	
100	5166	4894	4641	4406	4188	3985	3795	3617	3450	3294	3147	3009	2879	2757	
110	4693	4444	4213	4000	3802	3617	3445	3284	3133	2991	2859	2734	2617	2506	
120	4276	4049	3839	3644	3464	3296	3139	2993	2856	2728	2608	2495	2389	2289	
130	3908	3700	3508	3331	3167	3014	2871	2738	2614	2498	2388	2286	2189	2098	
140	3518	3337	3169	3013	2869	2734	2608	2490	2380	2276	2179	2087	2001	1920	
150	3240	3073	2919	2776	2643	2519	2404	2296	2194	2099	2010	1926	1847	1773	
160	2991	2837	2695	2563	2441	2327	2221	2121	2028	1941	1859	1782	1710	1642	
170	2767	2625	2493	2372	2259	2154	2056	1965	1880	1800	1724	1653	1587	1524	
180	2565	2433	2312	2199	2095	1999	1909	1824	1746	1672	1603	1537	1476	1418	
190	2377	2255	2143	2040	1944	1856	1773	1695	1623	1555	1491	1431	1375	1321	
200	2195	2085	1983	1889	1802	1721	1645	1574	1508	1446	1387	1332	1280	1231	
210	2049	1946	1851	1764	1683	1607	1537	1471	1410	1352	1298	1247	1199	1153	
220	1915	1820	1731	1650	1574	1504	1439	1378	1320	1267	1216	1169	1124	1082	
L[mm]															

P2 - HSK 63 connection 8,5/13 Kw (12/17) Hp Electric spindle - Rel. 2.1 (Optional) EN

Tool: aluminium cylindrical cutter,
Maximum operative speed

Elettromandrino / Electrospindle code 2936230036D / 37F (Tool AL)														
	90	100	110	120	130	140	150	160	170	180	190	200	210	D[mm]
40	26186	25471	24719	23940	23146	22345	21544	20751	19968	19201	18452	17723	17016	
50	25449	24538	23605	22667	21736	20820	19927	19062	18227	17424	16653	15915	15209	
60	24642	23542	22450	21380	20345	19351	18402	17500	16644	15834	15067	14342	13657	
70	23773	22500	21271	20099	18992	17950	16974	16060	15206	14408	13662	12964	12309	
80	22852	21425	20086	18840	17686	16622	15641	14735	13899	13127	12411	11747	11129	
90	17332	16513	15711	14934	14188	13477	12802	12163	11559	10990	10453	9947	9470	
100	16767	15851	14974	14144	13363	12630	11945	11305	10708	10150	9629	9142	8686	
110	16170	15167	14229	13360	12556	11814	11130	10498	9914	9374	8873	8409	7977	
120	15548	14470	13486	12590	11776	11035	10359	9742	9178	8659	8182	7742	7334	
130	14909	13769	12751	11842	11027	10296	9636	9039	8497	8002	7550	7135	6753	
140	11395	10762	10160	9592	9059	8561	8097	7665	7262	6887	6538	6212	5908	
150	11031	10348	9711	9121	8577	8075	7613	7186	6793	6430	6094	5782	5492	
160	10654	9927	9263	8658	8108	7608	7152	6735	6353	6003	5681	5384	5110	
170	10269	9504	8820	8207	7657	7162	6715	6311	5943	5607	5300	5018	4758	
180	9878	9084	8387	7771	7225	6739	6305	5913	5560	5240	4948	4680	4435	
190	9145	8407	7759	7189	6684	6234	5833	5471	5145	4850	4581	4335	4109	
200	7867	7311	6808	6354	5944	5573	5237	4932	4654	4399	4166	3951	3753	
210	7605	7026	6511	6054	5645	5279	4950	4653	4384	4139	3916	3711	3523	
220	7341	6744	6222	5763	5359	4999	4679	4391	4132	3897	3683	3488	3310	
L[mm]														

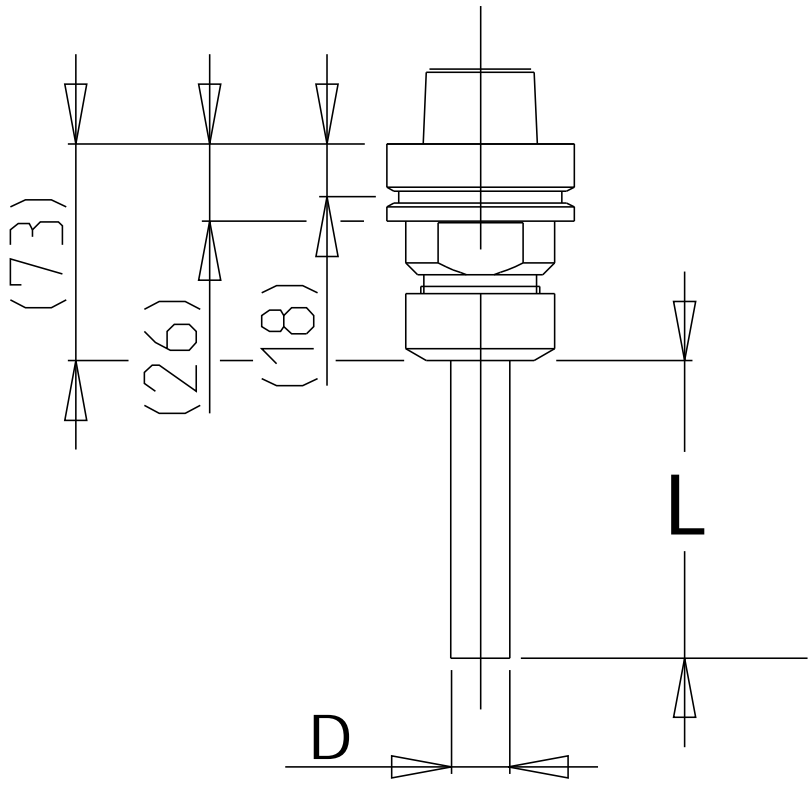
	220	230	240	250	260	270	280	290	300	310	320	330	340	350	D[mm]
40	16331	15669	15031	14415	13823	13254	12708	12184	11682	11202	10742	10304	9885	9485	
50	14535	13892	13278	12693	12136	11605	11099	10618	10161	9726	9312	8919	8545	8190	
60	13010	12397	11818	11271	10753	10263	9799	9360	8944	8551	8178	7826	7492	7176	
70	11696	11121	10581	10073	9595	9145	8721	8322	7945	7590	7255	6938	6639	6356	
80	10554	10018	9518	9049	8611	8199	7813	7450	7109	6788	6486	6201	5932	5678	
90	9020	8597	8197	7820	7464	7127	6810	6509	6225	5957	5702	5462	5234	5018	
100	8260	7860	7484	7132	6800	6489	6195	5918	5657	5411	5179	4959	4751	4555	
110	7574	7199	6848	6520	6213	5925	5654	5400	5160	4934	4722	4521	4332	4153	
120	6957	6606	6280	5975	5691	5425	5176	4942	4722	4515	4321	4137	3964	3801	
130	6400	6073	5770	5488	5226	4980	4751	4536	4334	4145	3966	3798	3640	3491	
140	5624	5358	5109	4875	4655	4449	4255	4072	3899	3736	3582	3436	3299	3168	
150	5223	4972	4737	4518	4313	4120	3939	3769	3609	3458	3315	3181	3054	2933	
160	4855	4619	4399	4193	4002	3822	3654	3496	3347	3207	3075	2951	2833	2722	
170	4518	4296	4090	3898	3719	3551	3395	3248	3110	2981	2858	2743	2635	2532	
180	4209	4001	3808	3628	3461	3306	3160	3023	2895	2775	2662	2555	2455	2359	
190	3901	3709	3531	3366	3212	3069	2935	2810	2692	2581	2477	2379	2286	2198	
200	3570	3400	3242	3095	2957	2829	2709	2596	2490	2390	2295	2206	2122	2042	
210	3349	3188	3039	2901	2772	2651	2538	2433	2333	2240	2152	2069	1990	1916	
220	3145	2993	2853	2722	2601	2488	2382	2283	2190	2102	2020	1942	1869	1800	
L[mm]															

Tool: steel/aluminium cylindrical cutter,
Maximum operative speed

Elettromandrino / Electrospindle code 2936230036D / 37F (Tool FE-AL)															
	90	100	110	120	130	140	150	160	170	180	190	200	210	220	D[mm]
40	23645	22533	21438	20376	19354	18379	17453	16577	15749	14967	14230	13534	12878	12258	
50	22311	21026	19805	18654	17579	16576	15644	14777	13971	13220	12521	11869	11260	10690	
60	20975	19567	18268	17077	15987	14990	14078	13241	12473	11765	11111	10507	9946	9424	
70	19656	18169	16832	15633	14555	13585	12708	11913	11190	10528	9922	9365	8851	8375	
80	18370	16839	15495	14311	13265	12334	11501	10753	10077	9464	8904	8393	7923	7490	
90	14654	13646	12722	11879	11111	10411	9771	9187	8651	8158	7704	7285	6897	6537	
100	13838	12791	11853	11011	10256	9575	8961	8404	7897	7434	7010	6620	6261	5929	
110	13033	11965	11026	10198	9463	8809	8223	7696	7220	6787	6393	6031	5700	5394	
120	12247	11174	10246	9439	8732	8108	7553	7057	6611	6208	5842	5508	5203	4922	
130	11487	10421	9515	8735	8059	7467	6944	6480	6064	5689	5350	5042	4761	4503	
140	9364	8649	8010	7439	6929	6470	6056	5682	5343	5034	4751	4491	4253	4032	
150	8879	8153	7516	6955	6458	6016	5621	5265	4945	4654	4389	4146	3924	3719	
160	8405	7677	7047	6500	6020	5596	5220	4883	4581	4308	4060	3834	3627	3437	
170	7945	7222	6605	6074	5613	5208	4851	4534	4249	3994	3762	3551	3359	3182	
180	7503	6790	6189	5677	5236	4851	4513	4214	3947	3708	3491	3295	3116	2952	
190	6935	6275	5719	5246	4839	4484	4172	3896	3650	3430	3231	3050	2885	2735	
200	6145	5602	5137	4734	4383	4075	3802	3559	3341	3144	2966	2804	2656	2520	
210	5840	5302	4847	4456	4118	3822	3562	3331	3125	2940	2772	2620	2481	2354	
220	5547	5017	4573	4195	3871	3588	3341	3122	2927	2752	2595	2452	2322	2203	
L[mm]															

	230	240	250	260	270	280	290	300	310	320	330	340	350	D[mm]
40	11673	11121	10599	10105	9638	9196	8778	8383	8008	7654	7319	7002	6702	
50	10156	9655	9184	8742	8327	7935	7566	7219	6891	6582	6290	6014	5754	
60	8938	8485	8062	7665	7293	6945	6617	6310	6020	5748	5491	5249	5021	
70	7934	7524	7142	6786	6453	6142	5850	5576	5319	5077	4850	4636	4434	
80	7090	6719	6374	6054	5755	5476	5214	4970	4740	4525	4322	4132	3953	
90	6202	5890	5599	5327	5072	4834	4610	4400	4202	4016	3840	3675	3519	
100	5621	5336	5070	4822	4590	4373	4170	3980	3801	3633	3474	3325	3185	
110	5112	4850	4607	4381	4170	3973	3789	3616	3454	3302	3158	3023	2896	
120	4663	4423	4201	3995	3803	3623	3456	3299	3151	3013	2883	2761	2646	
130	4265	4046	3843	3654	3479	3315	3163	3020	2886	2760	2642	2531	2426	
140	3828	3639	3463	3299	3146	3002	2868	2742	2624	2513	2408	2309	2215	
150	3530	3355	3193	3041	2900	2769	2645	2530	2421	2319	2223	2132	2047	
160	3262	3100	2950	2810	2681	2559	2446	2339	2239	2146	2057	1974	1895	
170	3020	2870	2732	2603	2483	2371	2266	2168	2076	1990	1909	1832	1760	
180	2802	2663	2534	2415	2304	2201	2105	2014	1929	1850	1775	1704	1638	
190	2596	2468	2350	2241	2139	2044	1955	1872	1794	1721	1652	1587	1525	
200	2395	2280	2173	2073	1981	1894	1813	1738	1666	1599	1536	1477	1421	
210	2237	2130	2030	1937	1851	1770	1695	1625	1559	1497	1438	1383	1331	
220	2093	1993	1899	1813	1733	1658	1588	1522	1460	1403	1348	1297	1248	
L[mm]														

TOOL TYPE "B":



Vmax for electrometer HSK 2936230037F NL according to dimensions of cutter and spark plug

Utensile	Fresa a candela in acciaio	**ρeq**	7829	[kg/m3]

Massima velocita' operativa 1 (prima velocita' critica / 1.3) [rpm]

	10	12	14	16	18	20	22	24	26	28	30	D[mm]
30	32000	32000	32000	32000	32000	31000	31000	31000	31000	31000	31000	
35	32000	32000	32000	32000	31000	31000	31000	31000	31000	31000	30000	
40	32000	32000	32000	31000	31000	31000	31000	31000	30000	30000	30000	
45	32000	32000	32000	31000	31000	31000	31000	31000	30000	30000	30000	
50	32000	32000	31000	31000	31000	31000	31000	30000	30000	30000	29000	
55	32000	32000	31000	31000	31000	31000	30000	30000	30000	29000	29000	
60	32000	31000	31000	31000	31000	30000	30000	30000	29000	29000	28000	
65	32000	31000	31000	31000	31000	30000	30000	29000	29000	29000	28000	
70	31000	31000	31000	31000	30000	30000	30000	29000	29000	28000	28000	
75	31000	31000	31000	31000	30000	30000	29000	29000	28000	28000	27000	
80	31000	31000	31000	30000	30000	30000	29000	28000	28000	27000	27000	
85	31000	31000	31000	30000	30000	29000	29000	28000	28000	27000	26000	
90	31000	31000	30000	30000	29000	29000	28000	28000	27000	26000	26000	
95	30000	30000	30000	30000	29000	29000	28000	27000	27000	26000	25000	
100	29000	30000	30000	29000	29000	28000	28000	27000	26000	25000	25000	
105	27000	29000	29000	29000	28000	28000	27000	26000	26000	25000	24000	
110	25000	28000	28000	28000	28000	27000	27000	26000	25000	24000	24000	
115	23000	26000	27000	27000	27000	27000	26000	25000	25000	24000	23000	
120	22000	25000	26000	27000	26000	26000	25000	25000	24000	23000	23000	

L[mm]

Legenda
24000 rpm
< 24000 rpm

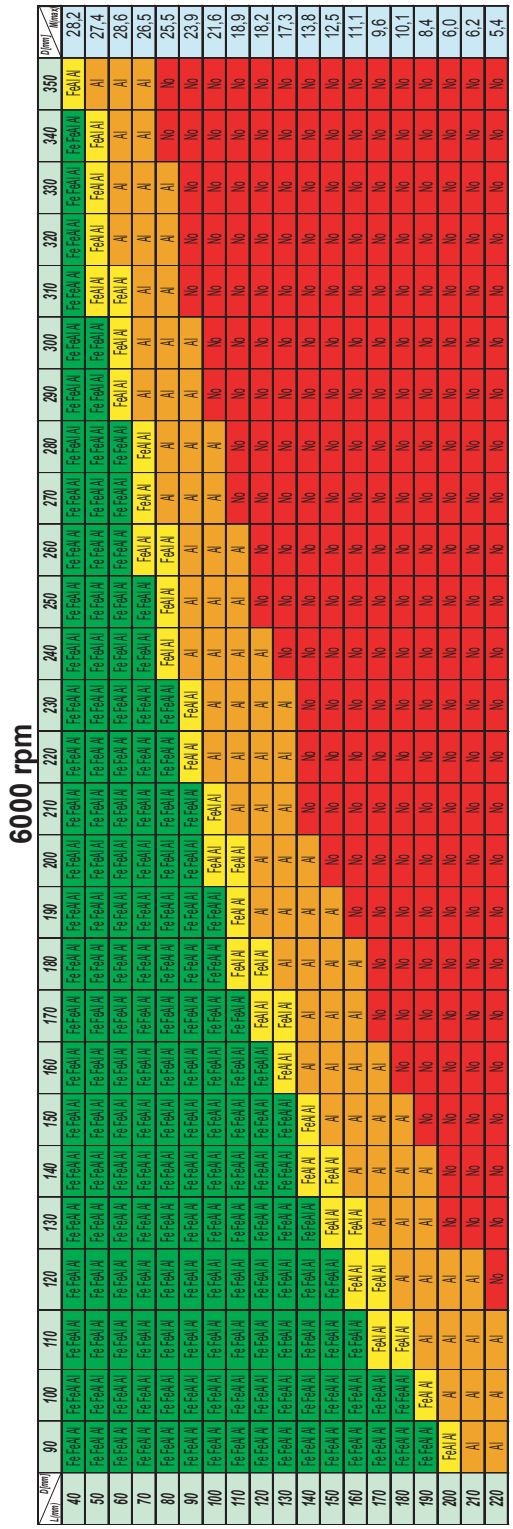
P2.2.2 Materials and masses for tools

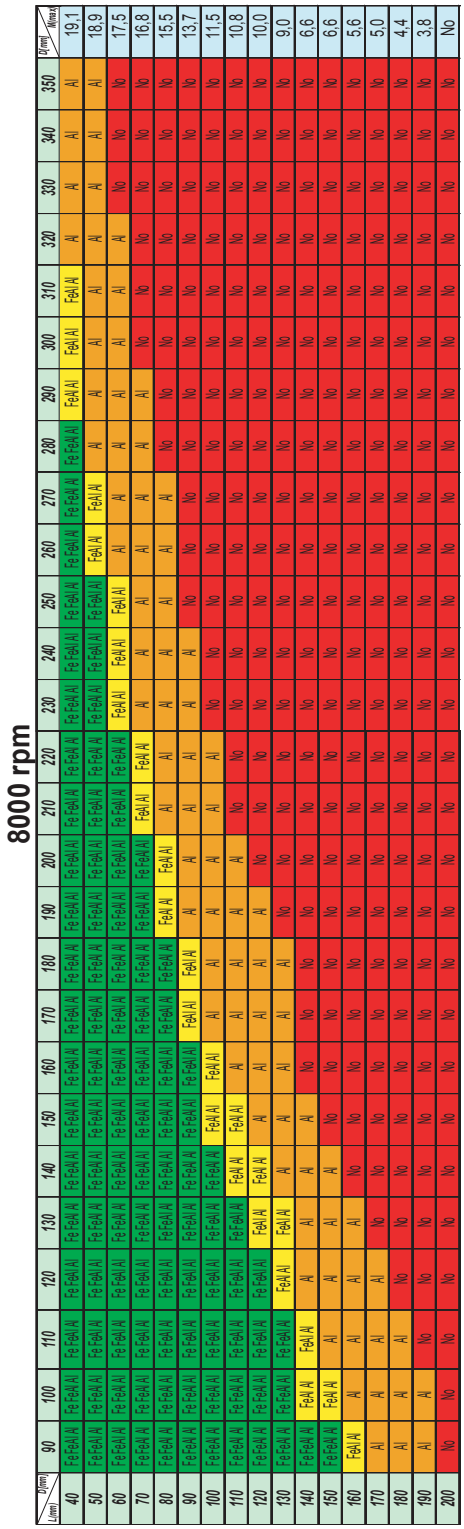
(em_hsk-8,5/13kw_1.1_p2.2.1)

This section indicates the materials and maximum mass of the tool according to its dimensions and the speed of rotation.

Al = Aluminium

Fe = Iron / Steel





10000 rpm

L/mm \ D/mm	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	D/mm \ M maxi
40	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	Al	No	12,8
50	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	12,0
60	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	11,6
70	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	10,6
80	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	10,6
90	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	7,5
100	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	6,9
110	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	6,2
120	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	5,7
130	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	5,8
140	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3,4
150	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3,0
160	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2,5
170	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2,7
180	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

12000 rpm

L/mm \ D/mm	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	D/mm \ M maxi
40	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	8,7
50	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	8,6
60	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	8,0
70	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	6,9
80	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	6,6
90	Fe FeAl Al	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	5,0
100	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	4,4
110	FeAl Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3,9
120	FeAl Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3,6
130	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	3,2
140	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

15000 rpm

L/mm \ D/mm	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	D/mm \ M maxi
40	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	No	5,3
50	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	4,9
60	Fe FeAl Al	Fe FeAl Al	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	5,0
70	Fe FeAl Al	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	4,8
80	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	Al	No	No	No	No	No	No	No	No	No	No	4,5
90	Al	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2,2
100	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2,0
110	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	2,2
120	Al	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	1,9
130	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

20000 rpm

L/mm \ D/mm	90	100	110	120	130	140	150	160	170	D/mm \ M maxi
40	Fe FeAl Al	Fe FeAl Al	FeAl Al	FeAl Al	Al	Al	Al	Al	No	2,3
50	Fe FeAl Al	FeAl Al	Al	Al	Al	Al	No	No	No	2,2
60	FeAl Al	Al	Al	Al	Al	No	No	No	No	2,1
70	Al	Al	Al	Al	No	No	No	No	No	2,1
80	Al	Al	Al	No	No	No	No	No	No	2,0
90	No	No	No	No	No	No	No	No	No	No

P2.3 Fitting the Tools

(emhsk11kw1.0_3.36.2)

To ensure efficient operation and a long working life of the electro-spindle, observe the following basic precautions:

CAUTION: ONLY USE THE TOOLS INDICATED IN SECTION - "A - USABLE TOOLS"

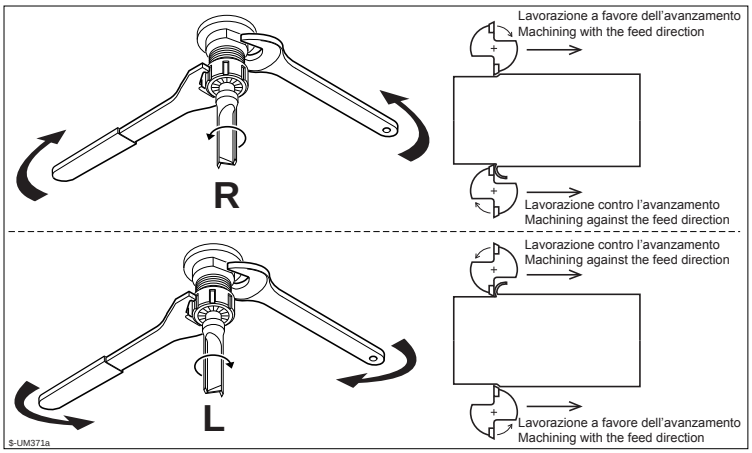
Tools should be clearly marked with the maker's name and the permitted number of rpm for the tool.
Do not use non-standard tools.
These reduce electro-spindle life and may be dangerous for the operator.

a) Only work with balanced tools (balance setting Q < 1 mm/sec). Do no use unbalanced tools. Unbalanced tools will cause irregular running and vibrations and will damage the spindle bearings.
The toolholders used have to have a balancing degree of at least G = 16 at maximum speed (vertical cylindrical tool) (Referring to the standard rules pr EN 847-3 and ISO 1940-1)
b) Before fitting a tool, thoroughly clean the contact surfaces between the tool and the spindle using a soft cloth. (DO NOT USE EMERY CLOTH!) Remove all traces of oil and ensure that the contact surfaces are not marked. This will ensure good tool centring and thus reduce imbalance and vibration to the minimum.
c) Do not use force when fitting or removing a tool. Do not attempt to release the tool by knocking the spindle or the tool spanner with a hammer. This can break the tool and cause irreparable damage to the bearings.
d) When you have finished using a tool, clean and oil the taper and threads and then store the tool in its container.
e) Always use cutting speeds, feed speeds, tool lengths and diameters to match the machining operation.

WARNING: Permitted operating speeds are marked on the tools. Do not exceed these limits.

Check that the tool direction of rotation/machining is compatible with the locking system (ring nuts or screws); a tool which rotates to the right requires a ring nut or screw with right-hand thread.

Figure shows how to correctly tighten a tool on the spindle and the correct direction of feed relative to tool rotation.

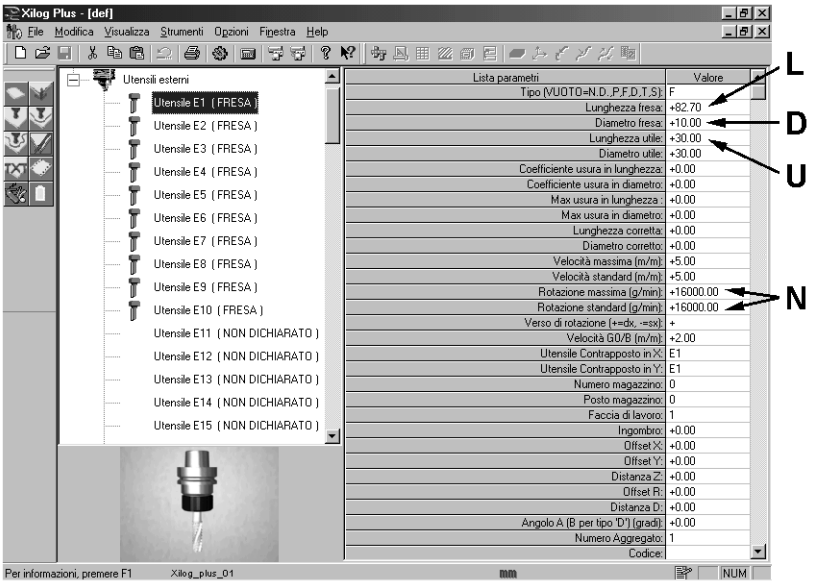


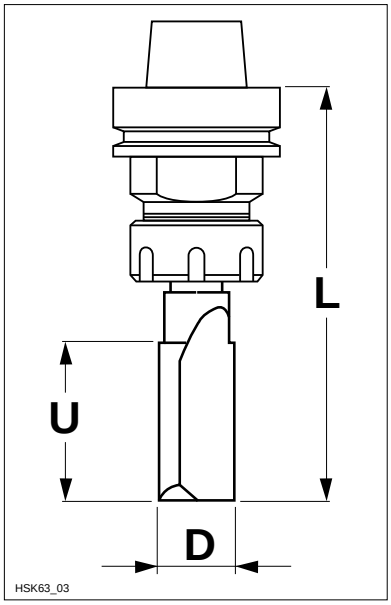
P2.3.1 Tooling up

(emhsk11kw1.0_336.2.1)

The tool configuration is set in the tooling up phase (see user's and programming manual).
The principle identification parameters for the miller unit dimensions are shown in the figure.

WARNING: In fields N do not enter speeds of rotation which are above the maximum speeds indicated by the tool manufacturer.





P2.3.2 Fitting Cutting Tools on Toolholder Spindles with HSK 63 fitting

(r_10_hsk63_3.30.2.2)

WARNING:

Fitting and removal of routers from toolholder spindles must not be performed on the machine.

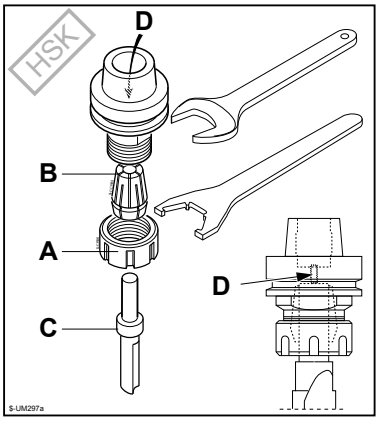
The toolholder spindle must be removed from the operating unit and the cutting tools fitted or removed at the workbench.

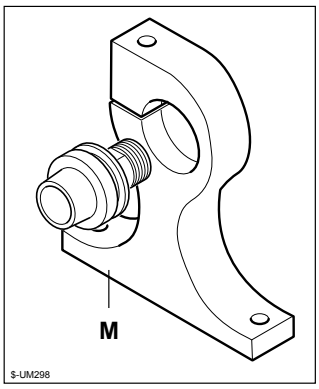
WARNINGS: Each time you change a tool, take its measurements and enter them in the tooling parameters: see Xilog programming manual.

To fit the tools, you need the following:
- 45-50mm C-spanner
- 36mm open-ended spanner or clamp M

To fit tools with cylindrical fitting on the tool holder spindles, proceed as follows:
- Undo the ring nut A completely
- Select a gripper B with a bore diameter suitable for the tool fitting shank (Check the diameter marked on the collet. The collet diameter must be the same or slightly less than the diameter of the tool shank, e.g. tool shank 14, collet 13-14)
- Press gripper B into ring nut A
- Screw ring nut A on but without tightening
- Insert the tool C into the gripper.
- Hold the tool holder spindle still with the open-ended spanner or with the clamp M and tighten the ring nut fully home with the C spanner
- Fit the tool holder spindle onto the electrospindle

CAUTION: Check that grub screw D is always fitted in the tool-holder spindle: if it is not fitted dust can get into the electro-spindle and cause malfunctions and damage.





Check that the tool direction of rotation/machining is compatible with the locking system (ring nuts or screws); a tool which rotates to the right requires a ring nut or screw with right-hand thread.

NOTE. Clamp "M" is not included in the pack of accessories: may be request with code "0387676270B"

P2.3.3 Tools fitting on Toolholder Spindle with Ø30mm shaft for bored tools

(em_tr12_al7467_9.47s.2.3)

WARNING:

Fitting and removal of routers from toolholder spindles must not be performed on the machine.

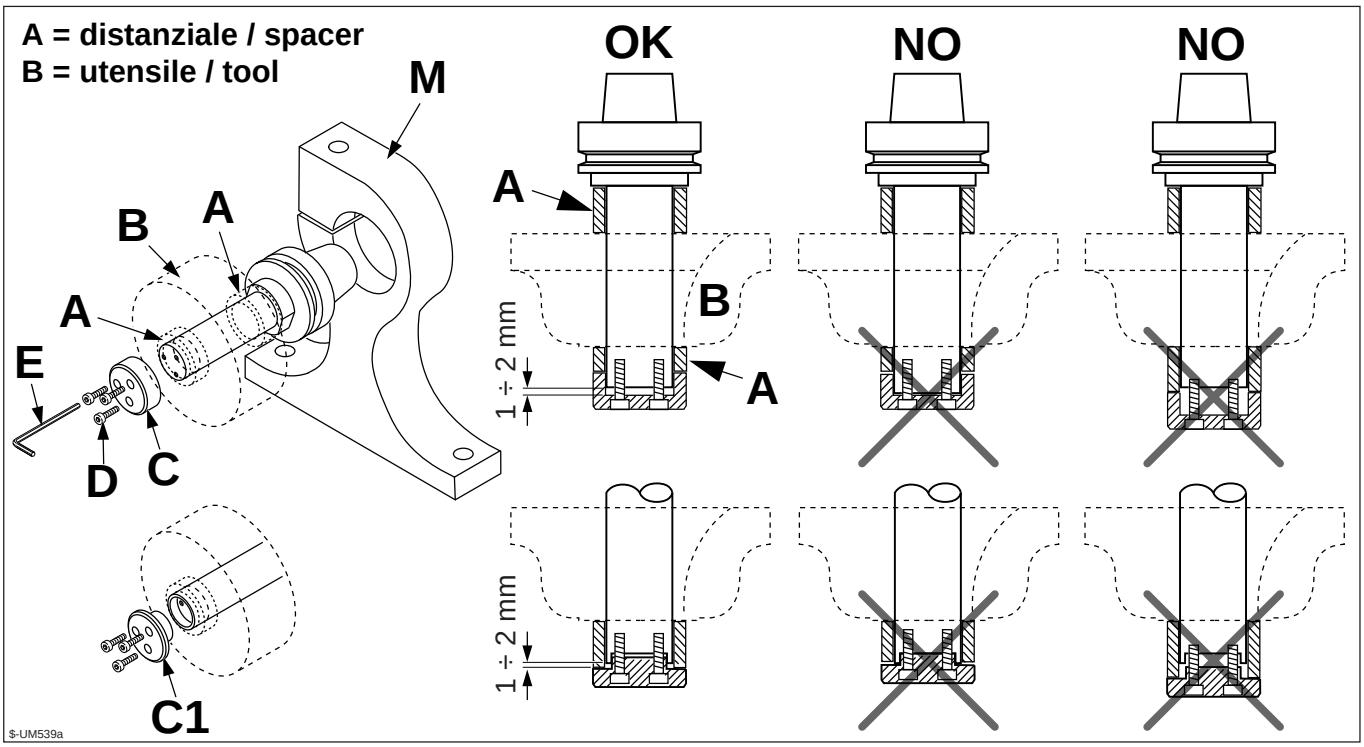
The toolholder spindle must be removed from the operating unit and the cutting tools fitted or removed at the workbench.

WARNINGS: Each time you change a tool, take its measurements and enter them in the tooling parameters: see Xilog programming manual.

To fit the tools, you need the following:
- spanner E
- clamp M

Put in the toolholder spindle shaft the spacers A and the tool (or the series of tools) B till the "tools pack" is created, then block with the flange C - C1 through the screws D.

ATTENTION: VERIFY THAT THE FLANGE "C" CLAMPS CORRECTLY THE TOOLS PACK: IN PARTICULAR IT DOESN'T HAVE TO LAY ON THE SHAFT INFERIOR FACE OR IT DOESN'T HAVE TO REMAIN OUT OF THE SHAFT.



NOTE. Clamp "M" is not included in the pack of accessories: may be request with code "0387676270B"

P2.3.4 Mounting Tools on electrospindle with magazine

(em_hsk_6,6kw_2.0_9.20.2.4)

WARNING: ON THIS MACHINE IT IS NOT POSSIBLE TO MANUALLY MOUNT TOOLS ON THE ELECTRO-SPINDLE DURING AN AUTOMATIC CYCLE.

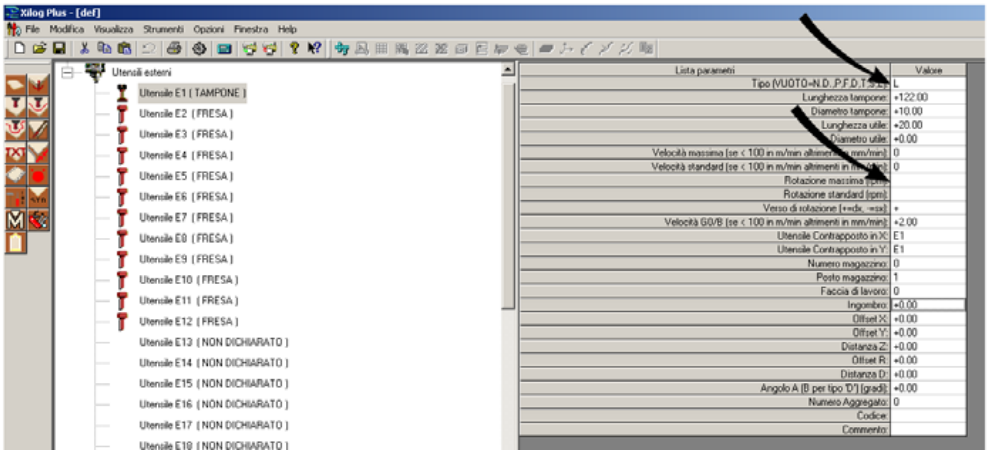
TOOL MUST BE LOADED ON THE ELECTRO-SPINDLE EXCLUSIVELY FROM THE CNC AND TOOLS MOUNTED ON THE COMPARTMENT AS INDICATED IN THE SPECIFIC CHAPTER.

P2.3.5 Sanding tools

(=tamponi_inp)

With "sanding tool" we mean: tools for surface finisching, utilizing on wood working machinery, generally composed of abrasive material reported on plastic support fixed on a metal base.

ATTENTION: This particular type of tool has to be configured in the software of the (Xilog Plus), as "L" type tool.
See table "parameter list" (L = Sanding tool, see manual of Xilog Plus)



It's forbidden to utilize sanding tools without having configured them as "L type tool" on the set up table of Xilog Plus SCM Group S.p.A. refuses all responsibilities for damages caused to persons or things due to the non-observance of the indications detailed on this manual.

ATTENTION: The rollers or sanding brushless are tools particulars, for this reason it is recommended:- DO NOT UTILIZE TOOLS IN WHICH THERE ISN'T MARKED ON THE MAXIMUM SPEED OF ROTATION - DO NOT TRAPASSING THE ROTATION SPEED MARKED ON THE TOOL - DO NOT UTILIZE THIS TYPE OF TOOL FOR WORKING DIFFERENT OF THE ONES FOR WHICH THEY HAVE BEEN PRODUCED

Maximum rotation for this tool is 1500 r.p.m.
La the machine has been configured in order do not accept rotation values more the 1500 r.p.m.

For the use and maintenance of the sanding units consult the indications supplied by the constructor.

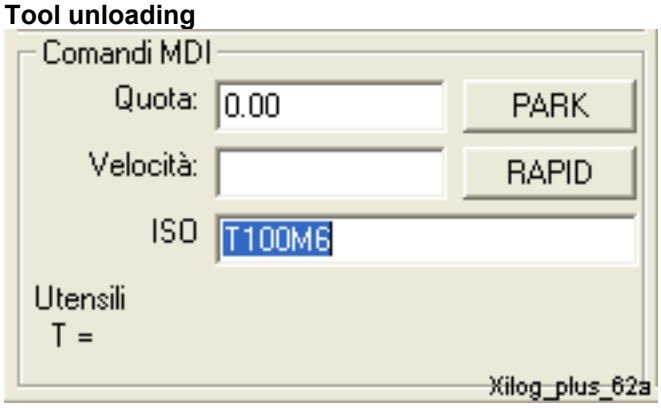
P2.3.6 Unloading /loading tools from the electrospindle

(em-hsk_8,5kw_1.1_9.30.2.6)

NOTE: this information is not valid for mill-edging work centres

For the tool unloading /loading from the electrospindle to the tool-holder crib, it has to be used the ISO from MD I environment.

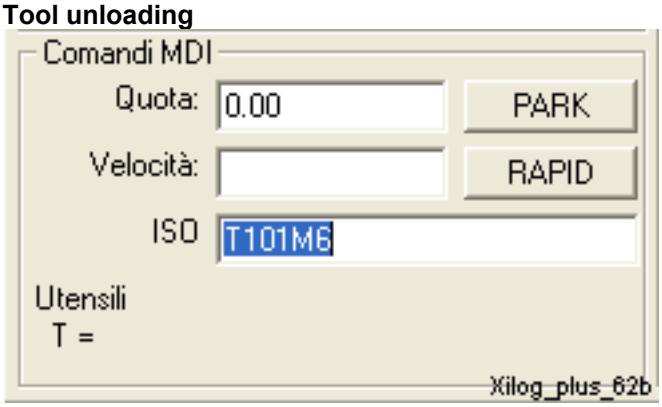
Tool unloading



Variable:
T1xx = electrospindle 1
Tx00 = tool unloading demand

Example:
ISO = T100M6 tool unloading demand from the electrospindle 1
ISO = T200M6 tool unloading demand from the electrospindle 2

Tool unloading



Variable:
T1xx = electrospindle 1
Tx01 = tool 1 loading demand

Example:
ISO = T101M6 tool 1 loading demand from the crib
ISO = T116M6 tool 16 loading demand from the crib

P2.3.7 Mechanical presser (On request)

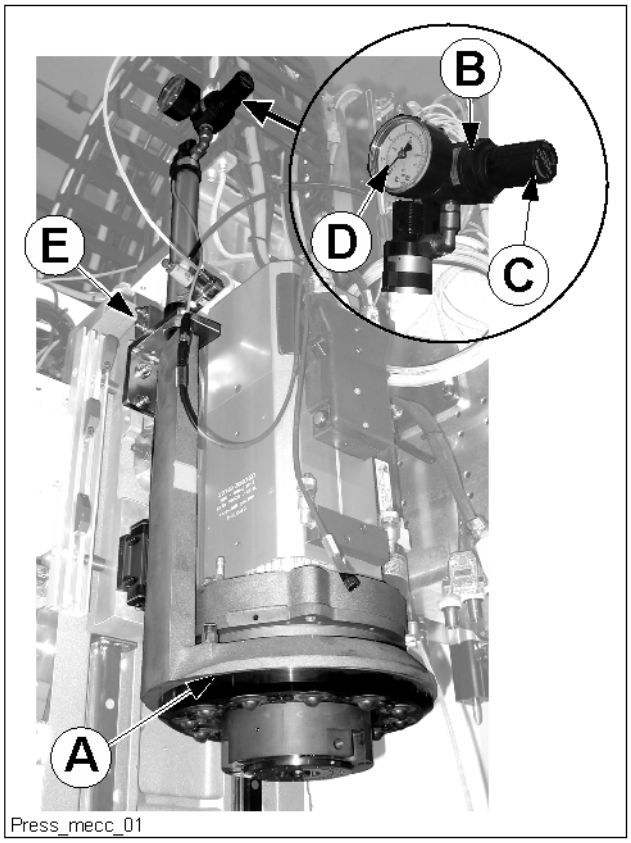
(em-hsk_8,5kw_1.1_9.30.2.7)

The mechanical presser is a device that helps to hold the workpiece during the nesting processes.
It consists of a pneumatically powered disc A on the same axis as the tool that moves vertically and applies adjustable force on the workpiece.
The contact area is cleaned by air blowers on the surface of the disc.

The pressure on the workpiece can be adjusted by means of the pressure controller B: Lift and turn knob C to change the operating pressure, checking the value on manometer D. After adjustment, press knob C.

Three interchangeable pressers are provided as standard; one is made of steel and another of nylon, and a third has balls that are to be used according to the surface properties of the workpiece.

NOTE: The devices on the price-list can change at manufacturer's discretion



Press_mecc_01

Lubricating the recirculating ball sliding blocks:
PERIODICALLY : Every 50 hours (weekly maintenance):
- Inject approximately 1cm^3 of grease (Type "AGIP GR MU EP0") into each grease nipple E. Clean away any excess grease.

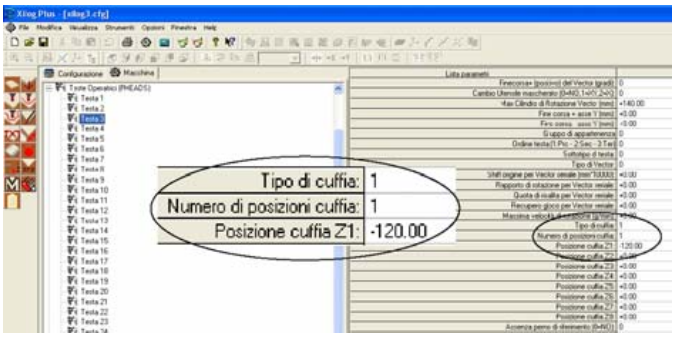
P2.3.8 Chapter deleted
(capitolo annullato)

P2.4 Dust extraction hood running

(em-hsk_8,5kw_1.2_9.30.4)

The management (introduce / exclusion) of the suction hood it is managed automatically by PLC according to the length of the tool requested for the working.
Into the figures it has been indicated the value Z.. that, considering the length of the tool, activates or not the hood.

NOTE: The eventual manual adjustments on the hood are not managed by XILOG

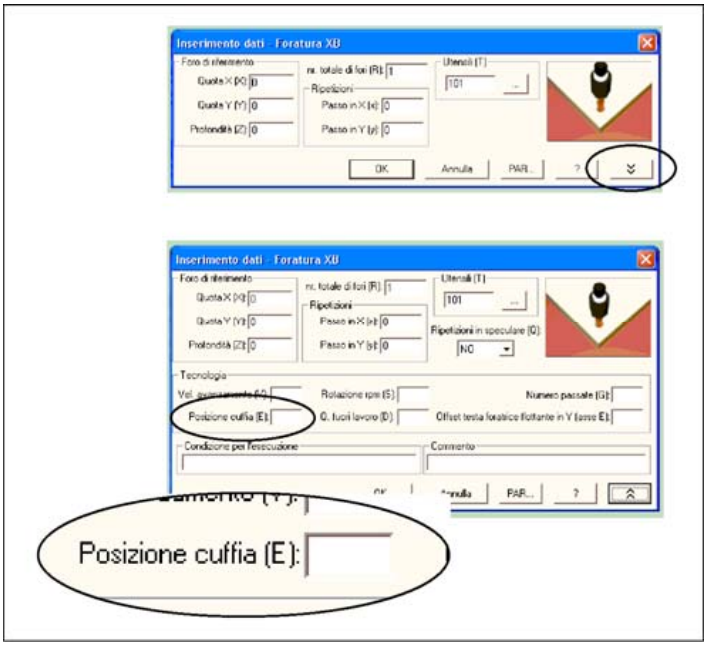


This automatic procedure can be excluded modifying into the working the parameter E :

E = empty : automatic management from XILOG(1)
E= 0 : Hood off;
E= from 1 to 4 : hood gradually lower;

(1)**No for Prisma operator unit**

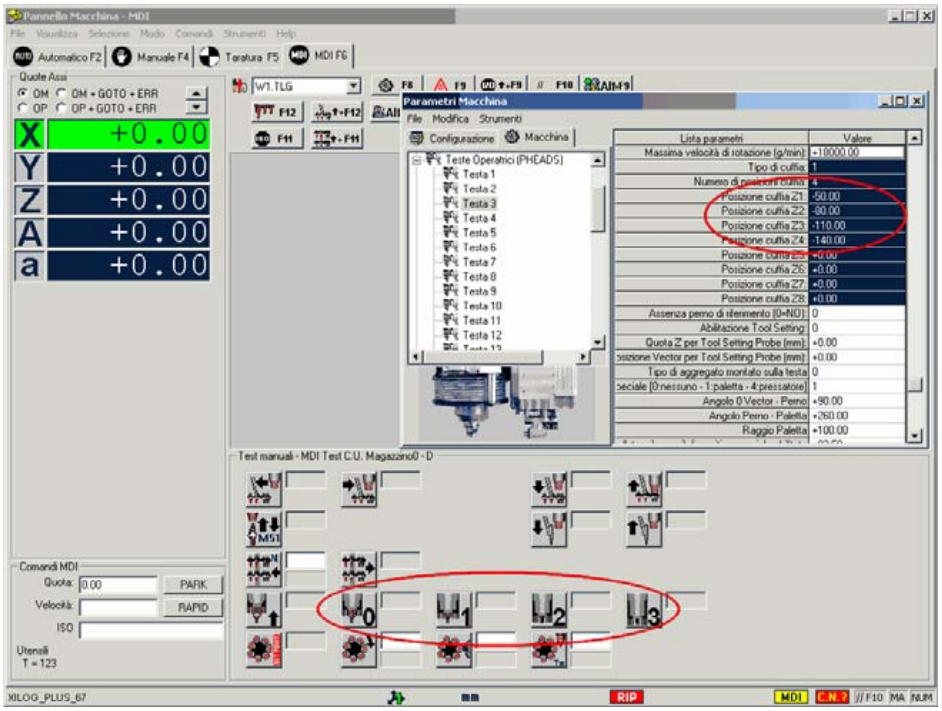
NOTE: This variation can be memorised into the program and it is valid only for the working in which it is introduced



In order to lift the extraction hood (in machines where there is this option):
- with optional pushbutton panel hold down key "T09"

Ref.	Picture	Description / Function Use and / or indication
T09a		Button for lifting the extractor hood manually / Always enabled Press and hold to lift the hood: release to lower the hood
T09b		Button for lifting the extractor hood manually / Always enabled Press and hold to lift the hood: release to lower the hood

In MDI mode use the appropriate icons to position the hood - ONLY FOR 3-AXIS HEADS - (see Xilog Plus Panel Mac manual, sec. 4.5).
On multi-head machines, first select the desired machining head.



P2.5 Maintenance and lubrication

(r_6_iso30_3.20.3_inp)

WARNING: All cleaning and maintenance operations must be performed by skilled personnel only. Before you start any cleaning or maintenance operations, switch off and lock out the main electrical and compressed air switches.

Do not attempt to perform repairs or other operations not described in this manual.

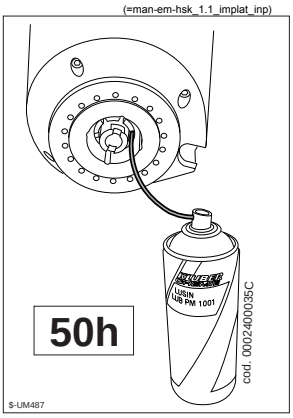
This machine must only be used and maintained by suitably qualified and authorised personnel.
All operations requiring dismantling of machine components must only be performed by suitably skilled and authorised personnel.
When changing machine parts only use original spare parts. The manufacturer declines all responsibility for damage caused by the use of non-original spare parts.
Accident prevention regulations, safety precautions and occupational health and safety recommendations must be followed at all times.

CAUTION!: FAILURE TO CARRY OUT THIS MAINTENANCE OPERATION MAY EFFECT MACHINING QUALITY AND CAN INCREASE THE RISK OF TOOL BREAKAGE.

NOTE: The maintenance intervals given above are intended as a guide only. With particularly dusty operations (e.g. machining agglomerates) the maintenance operations must be performed more frequently to ensure continued machine efficiency.
An efficient extractor system will ensure efficient operation and prevent damage caused by overheating. Check the efficiency of the sawdust/shaving extractor system once a week.

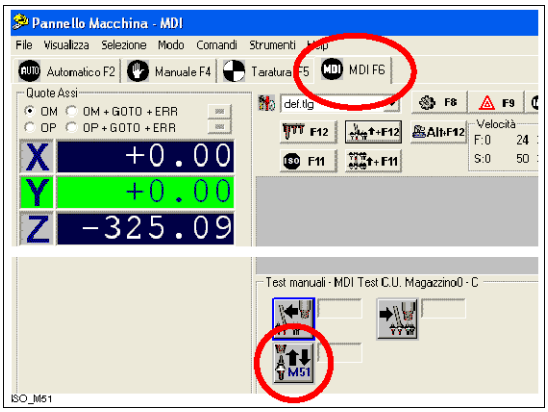
. Electrospindle and HSK63 taper maintenance

Every 50 hours: lubricate the tool taper clamping unit with the grease spray provide (code: 0002400035C).

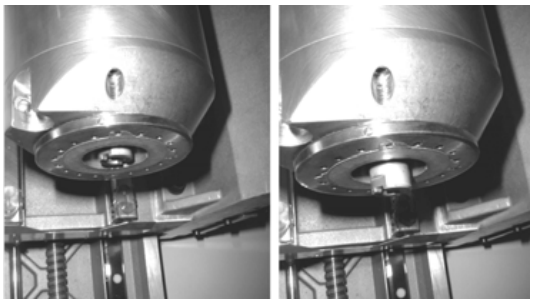


Unload the tool in the tools crib
Move the operator unit to an accessible position.
Insert the spray can tube in the gap between two of the collet sections and, holding the can in a vertical position, spray.
repeat the operation for the other gaps.

For a correct distribution of the grease between the pedals of the clamps it is necessary to activate the locking /unlocking cone tool-holder function into the emergency condition. Execute this procedure:
- Machine state operating
- Selection MDI ISO page
- Selection the electrospindle by the code M51 (or M31-M32 in base to the type of machine) activating it with "Enter" and "Start cycle"



- Activate the emergency of the machine: the key "T06" is operating
- Execute the locking/unlocking cycles by the key "T06" (almost 10/15 cycles)



At the reset from emergency of the machine the key "T06" are disabilited

To reactivate the machine, first reset the messages with the F11 + keys.

Ref.	Picture	Description / Function Use and / or indication
T06a		Button for locking-unlocking the HSK63 cone: Enabled in “MDI” and “Manual” mode: not enabled in “Automatic” mode The light is steady when the cone is locked in position
T06b	Lock/Unlock	Button for locking-unlocking the HSK63 cone: Enabled in “MDI” and “Manual” mode: not enabled in “Automatic” mode

Insert an empty cone and have the electric spindle rotate at 18000 rpm for about a minute.

At the end, stop the machine again, extract the tool cone and eliminate any grease deposited on the inside walls of the electric spindle shaft with a cloth and, if necessary, with acetone (WARNING: ACETONE IS A FLAMMABLE LIQUID!)

NEVER blow air jets inside the spindle as it could push dust and dirt inside and cause irreparable damages to the spindle.

Also clean the hollow part of the tool cone

HSK63 tool taper maintenance

(tr12_hsk63_3.42.5b_imp-lat)

Clean the cone outside and inside with a dry and clean cloth every week.

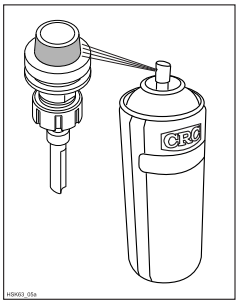
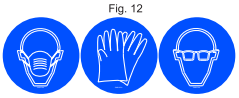


Fig. 12

Every month clean the contact surfaces (shown in grey in the figure) between the tool tapers and the chuck using acetone (CAUTION! FIRE HAZARD). Next, lubricate this area with the Teflub lubricant supplied (SCM: 0002400034A) Teflub is a dry, dustproof, waterproof lubricant which ensures correct clamping of the tool tapers.

NOTE: On tool holder tapers not supplied by manufacturer, perform this operation the first time the tapers are used.
WARNING: If the machine remains switched off for a long period of time (more than one week), the cone that stays mounted on the electro spindle must be carefully cleaned and lubricated.

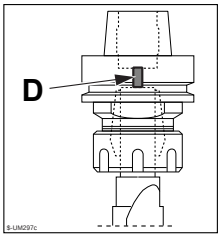


IMPORTANT: AS WELL AS OBSERVING THE WARNINGS ON THE CANISTER:
- DO NOT INHALE VAPOURS OR NEBULISED SUBSTANCES
- MAKE SURE THAT THE AREA USED IS WELL VENTILATED
- WEAR PROTECTIVE GLOVES IF CONTACT IS PROLONGED
- WEAR EYE PROTECTION

-

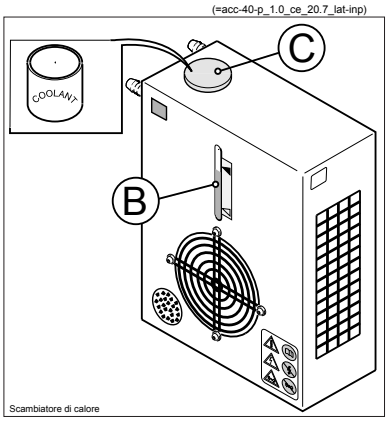
(grano_su_hsk)

CAUTION: Check that grub screw D is always fitted in the tool-holder spindle: if it is not fitted dust can get into the electro-spindle and cause malfunctions and damage.



P2.5.1 HEAT EXCHANGER (WHERE EXPECTED)

(=acc-40-p_1.0_ce_20.7_lat-inp)



Before filling the tank, control that the pump motor turns freely.
Never run the pump "dry" for longer than 30 seconds.

Control the cooling fluid level through the small window (B). When it is close to the "MIN" level top up through the inlet (C) until the "MAX" level.
Use only fluid (to be ordered from the spare parts department) with the 0736238634E code.
Do not dilute with water.
Use perfectly clean containers to top up the fluid.

Be careful: the fluid is toxic.

A flow rate switch sends an alarm message to the C.N. when the flow drops below the calibration value.
Frequently clean the cooling batteries and the pump motor with compressed air (max pressure 10 bar)
In case of extended inactivity, empty the tank completely.

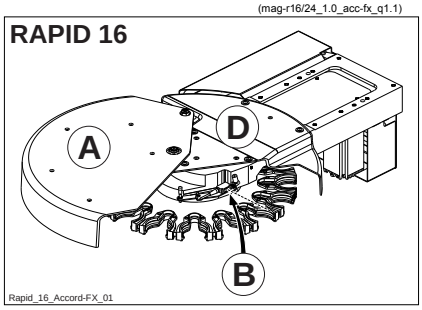
(sp_210mm)

INDEX

(sp_210mm)

Q1.1 Rapid 16 / 24 Tool changer

(mag-r16/24_1.0_acc-fx_q1.1)

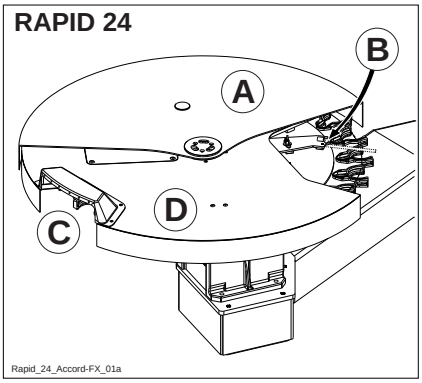


Subject tool holder is mounted on the rear of the mobile bridge.
The tool changer changes tools automatically and rapidly, thus considerably reducing down-time.
It is made up of a circular tool holder that rotates to present the spindle with the tool request.
The collets are protected by a D carter with C tool loading opening.
One automatically closing door (A) which enables you to keep the tools repared during machining cycles

Photocell B checks whether or not there is a spindle in the gripper in tool change position. Check that the optic sensor is clean.

A constant air blow keeps the air free of dust.

If there is any chip in front of the photocell the machine control could interpret this as "grippers occupied" and the tool change cycle could be interupted



. -
(magr16/24_1.1_accfx_q1.1a)

WARNING - RESIDUAL RISKS:

- Danger caused by programming errors that could mean that wrong tools are called.

- Danger caused by errors in programming machine equipment (e.g. associating the wrong parameters to a certain tool code)

- Danger due to incorrect tool fitting

- Erroneus tool is loaded into the tool-holder store.

- Danger of tool locking screw or ring nut slackening.

Always verify that there is no collision danger between tools installed on the magazine and machine parts, planning for a complete rotation of the magazine or angle head installed on an electro-spindle with vector. Always verify that tightness and stability of tools installed on the magazine is correct.

To display the locations in the magazine and the tools saved, to see how to change tools saved and for error messages and solutions, consult the XILOG programming manual.

GLOVES: use when handling tools.

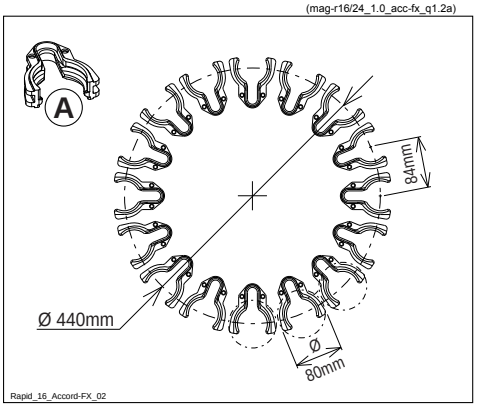
Q1.2 Technical Characteristics

(=mag-r16/24_1.0_acc_10b.1e_inp)

CAUTION: THIS SECTION INDICATES THE DIMENSIONS AND THE CAPACITY OF THE MAGAZINE. THE WEIGHT AND SPEED OF THE TOOLS THAT CAN ACTUALLY BE SUPPORTED BY THE ELECTRO-SPINDLE DURING OPERATION ARE INDICATED IN THE SPECIFIC CHAPTER FOR EACH TYPE OF ELECTRO-SPINDLE.
THE ALLOWED DIMENSIONS FOR TOOLS THAT CAN BE INSTALLED ARE INDICATED IN THE "TECHNICAL DATA" --> "MAXIMUM TOOL DIMENSIONS" CHAPTER.

. Rapid 16

(mag-r16/24_1.0_acc-fx_q1.2a)

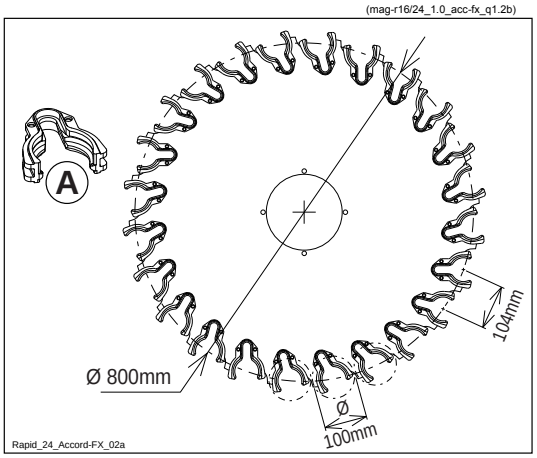


PROPERTIES:

N° Stations ->16(1)
Basic diameter -> Ø 440 mm
Spacing between the stations -> 85 mm
Max weight for circular tool -> 8 kg
Max weight for angle driven head -> 10 kg
Max weight for magazine -> 48 kg
Max diameter no. 16 tools -> Ø 80 mm
Toolholder attachment type --> HSK 63
Maximum tool sizes --> see chap. D - "Max dimensions of tools"
(1) **In presence of other storage and with the "RANDOM" management of the tools, the number of positions varies in function of the dimensions of the tools**

. Rapid 24

(mag-r16/24_1.0_acc-fx_q1.2b)



PROPERTIES:

N° Stations ->24(1)
Basic diameter -> Ø 800 mm
Spacing between the stations -> 104 mm
Max weight for circular tool -> 8 kg
Max weight for angle driven head -> 10 kg
Max weight for magazine -> 96 kg
Max diameter no. 24 tools -> Ø 100 mm
Toolholder attachment type --> HSK 63
Maximum tool sizes --> see chap. D - "Max dimensions of tools"
(1) **In presence of other storage and with the "RANDOM" management of the tools, the number of positions varies in function of the dimensions of the tools**

Q1.3 Fitting the Tools

(emhsk11kw1.0_3.36.2)

To ensure efficient operation and a long working life of the electro-spindle, observe the following basic precautions:

CAUTION: ONLY USE THE TOOLS INDICATED IN SECTION - "A - USABLE TOOLS"

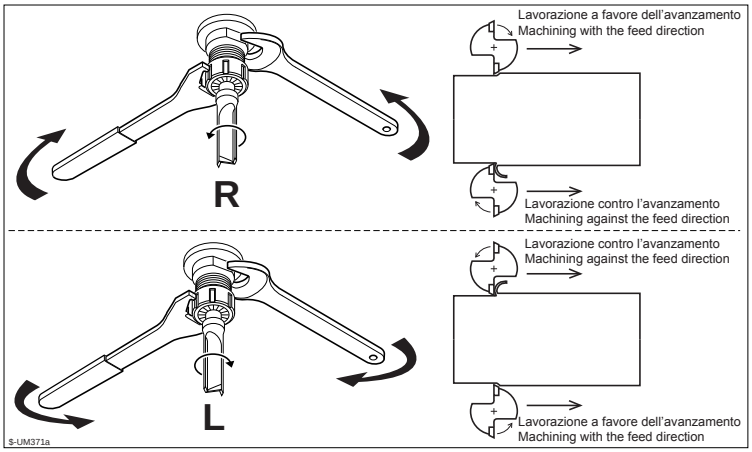
Tools should be clearly marked with the maker's name and the permitted number of rpm for the tool.
Do not use non-standard tools.
These reduce electro-spindle life and may be dangerous for the operator.

a) Only work with balanced tools (balance setting Q < 1 mm/sec). Do no use unbalanced tools. Unbalanced tools will cause irregular running and vibrations and will damage the spindle bearings.
The toolholders used have to have a balancing degree of at least G = 16 at maximum speed (vertical cylindrical tool) (Referring to the standard rules pr EN 847-3 and ISO 1940-1)
b) Before fitting a tool, thoroughly clean the contact surfaces between the tool and the spindle using a soft cloth. (DO NOT USE EMERY CLOTH!) Remove all traces of oil and ensure that the contact surfaces are not marked. This will ensure good tool centring and thus reduce imbalance and vibration to the minimum.
c) Do not use force when fitting or removing a tool. Do not attempt to release the tool by knocking the spindle or the tool spanner with a hammer. This can break the tool and cause irreparable damage to the bearings.
d) When you have finished using a tool, clean and oil the taper and threads and then store the tool in its container.
e) Always use cutting speeds, feed speeds, tool lengths and diameters to match the machining operation.

WARNING: Permitted operating speeds are marked on the tools. Do not exceed these limits.

Check that the tool direction of rotation/machining is compatible with the locking system (ring nuts or screws); a tool which rotates to the right requires a ring nut or screw with right-hand thread.

Figure shows how to correctly tighten a tool on the spindle and the correct direction of feed relative to tool rotation.



Q1.3.1 Fitting Cutting Tools on Toolholder Spindles with HSK 63 fitting

(tr_12_hsk63_3.42.2)

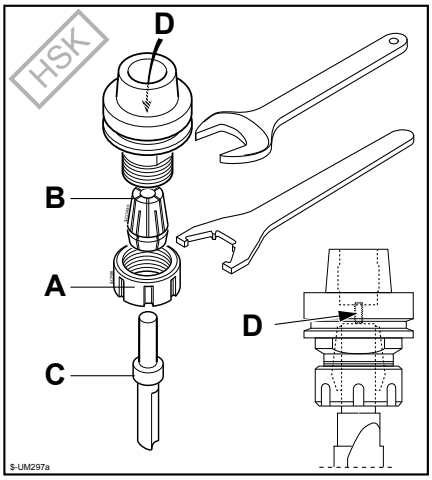
WARNING:
Fitting and removal of routers from toolholder spindles must not be performed on the machine.
The toolholder spindle must be removed from the operating unit and the cutting tools fitted or removed at the workbench.

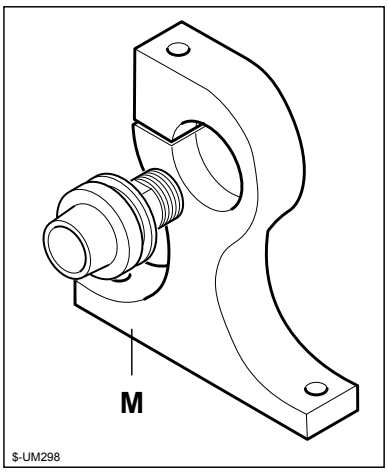
WARNINGS: Each time you change a tool, take its measurements and enter them in the tooling parameters: see Xilog programming manual.

To fit the tools, you need the following:
- 45-50mm C-spanner
- 36mm open-ended spanner or clamp M

To fit tools with cylindrical fitting on the tool holder spindles, proceed as follows:
- Undo the ring nut A completely
- Select a gripper B with a bore diameter suitable for the tool fitting shank (Check the diameter marked on the collet. The collet diameter must be the same or slightly less than the diameter of the tool shank, e.g. tool shank 14, collet 13-14)
- Press gripper B into ring nut A
- Screw ring nut A on but without tightening
- Insert the tool C into the gripper.
- Hold the tool holder spindle still with the open-ended spanner or with the clamp M and tighten the ring nut fully home with the C spanner
- Fit the tool holder spindle onto the electrospindle

CAUTION: Check that grub screw D is always fitted in the tool-holder spindle: if it is not fitted dust can get into the electro-spindle and cause malfunctions and damage.





Check that the tool direction of rotation/machining is compatible with the locking system (ring nuts or screws); a tool which rotates to the right requires a ring nut or screw with right-hand thread.

Q1.3.2 Tools fitting on Toolholder Spindle with Ø30mm shaft for bored tools

(em_tr12_al7467_9.47s.2.3)

WARNING:

Fitting and removal of routers from toolholder spindles must not be performed on the machine.

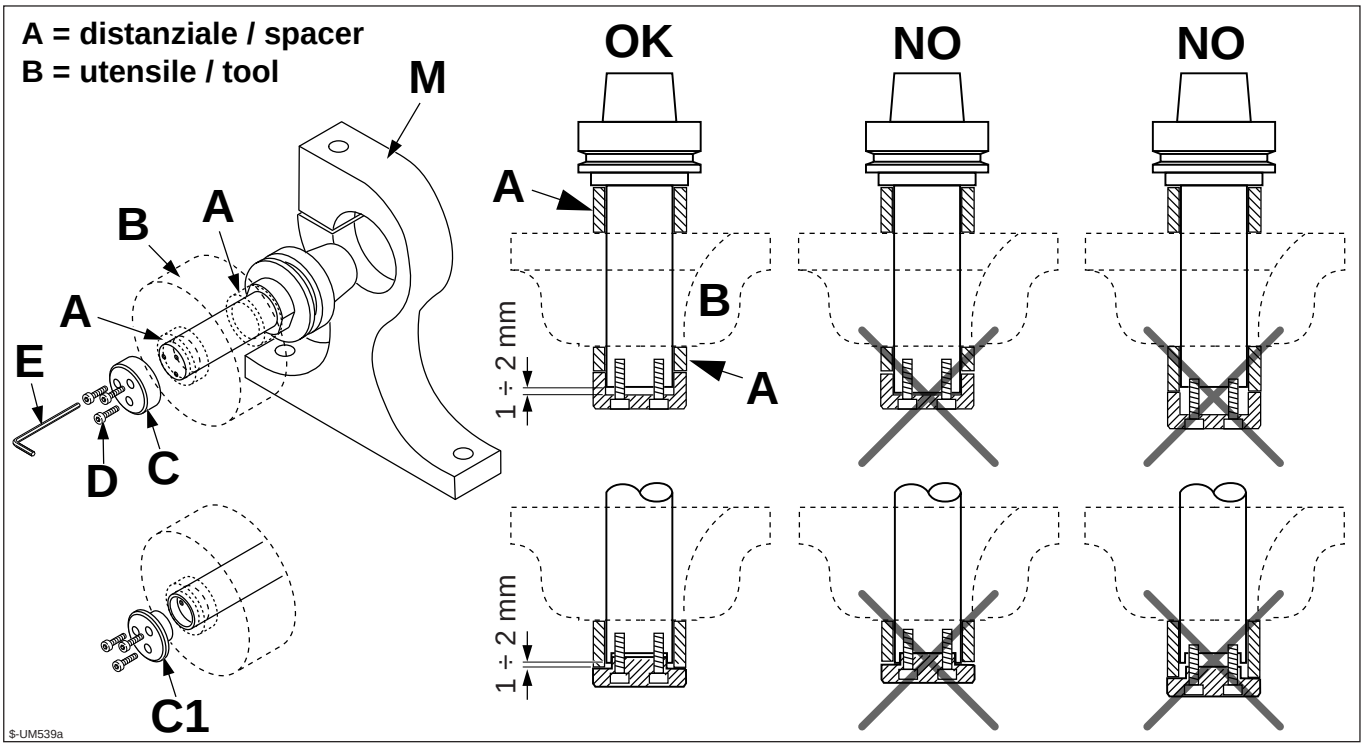
The toolholder spindle must be removed from the operating unit and the cutting tools fitted or removed at the workbench.

WARNINGS: Each time you change a tool, take its measurements and enter them in the tooling parameters: see Xilog programming manual.

To fit the tools, you need the following:
- spanner E
- clamp M

Put in the toolholder spindle shaft the spacers A and the tool (or the series of tools) B till the "tools pack" is created, then block with the flange C - C1 through the screws D.

ATTENTION: VERIFY THAT THE FLANGE "C" CLAMPS CORRECTLY THE TOOLS PACK: IN PARTICULAR IT DOESN'T HAVE TO LAY ON THE SHAFT INFERIOR FACE OR IT DOESN'T HAVE TO REMAIN OUT OF THE SHAFT.



Q1.4 Magazine set up procedure

(mag-r16/24_1.0_acc-fx_q1.4)

FOREWARD:
Before starting to work, the tools mounted in the deposit slots must be loaded into the deposit and the information stored in the CNC.
It is understood that in the CNC the tools must be stored by number and tool information (see the programming manual provided with the machine)

WARNING: Extreme care must be used when manually operating the tools: the machine is equipped with a device that detects the presence of a tool-holder on the electro spindle. BUT IT DOES NOT RECOGNIZE THE TYPE OF TOOL ACTUALLY MOUNTED.

The errors listed below can generate extremely dangerous situations:

- tool inserted in wrong room position

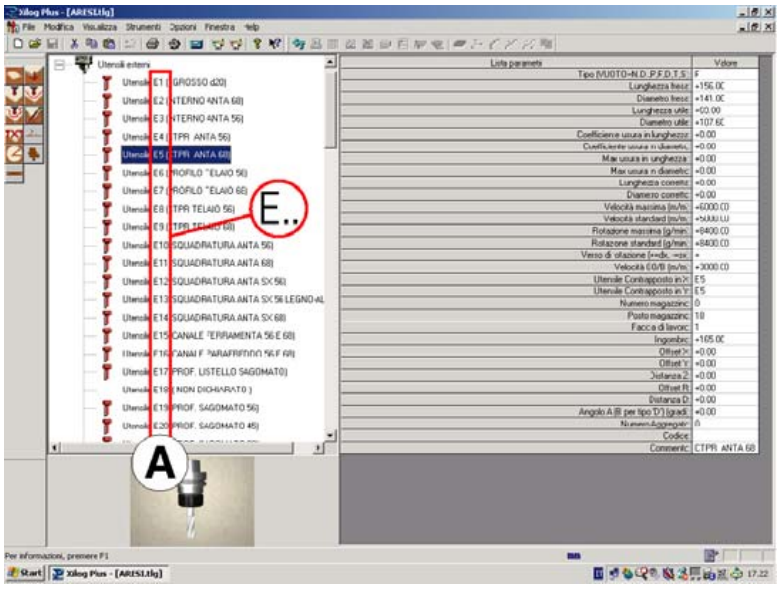
- tool inserted in right room position but is not consistent with the tool recalled in the work program.

- tool inserted in tool-holder with rotating direction that does not comply.

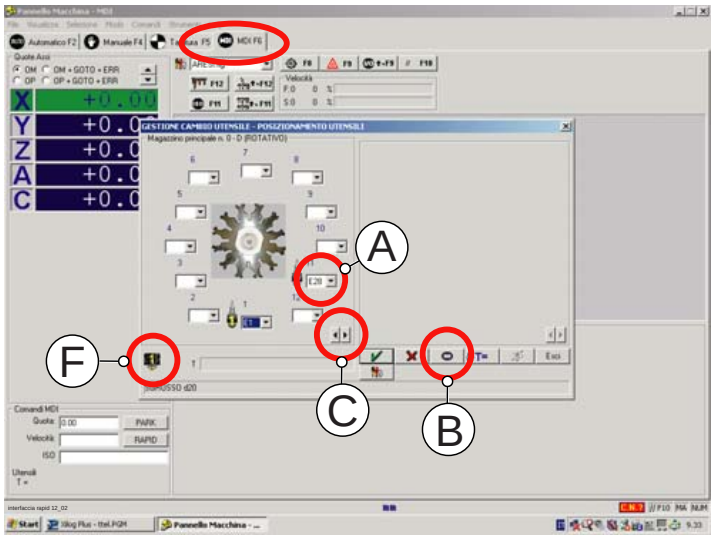
Ensure that the tools are perfectly balanced, sharpened and accurately splined and tightened (unsharpened tools increase the risk of the workpiece being ejected)
Use ALL precautions described in section "Safety norms for tools"

The magazines set up operation must be carried out as follows:

First of all the tools being used must be defined, by stating the dimensions requested and by given them a progressive number (E..).
From the Xilog interface click on "open file" and select "file type" (*.tlg).
It is important that the file for every tool is compiled by consulting the Xilog manual.

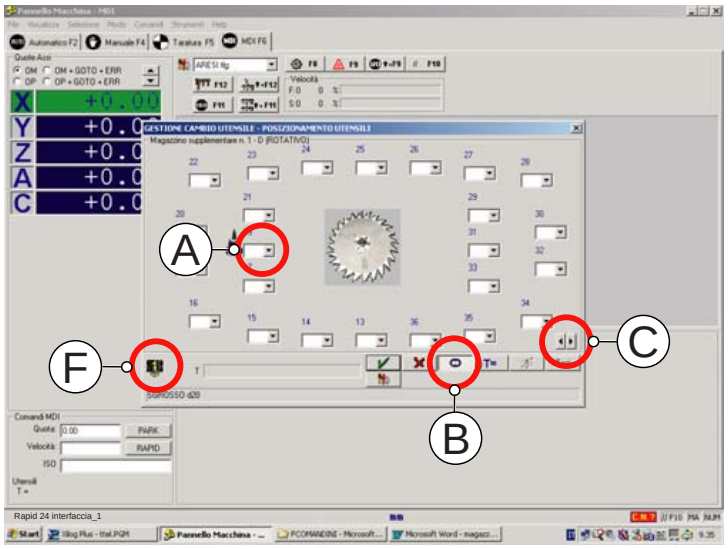


Select MDI mode (F6) from xilog interface. Then enable machine graphics with SHIFT+F11



Use selector A to connect tool previously configured to position on magazine.

NOTE: if the machine assembles mmore storage, use keys B -C to display them



NOTE: The tools arranged in the deposits must correspond perfectly to the numbers displayed on the screen that appears when the menu in fig. is activated.
The manufacturer suggests that, in order to prevent errors, an identification tag must be placed on all tools showing reference "A" .

The table represents, in a circular manner, the fields relative to the magazine locations on the machine.

Deleting tools:
- use function key [ ] then [ ] (to confirm) to delete all tools in both magazines.

Loading tools:
- select fields
- use the "arrow" keys on the keyboard to view the tools present amongst the equipment loaded; to confirm press key [ ] .

The lower left hand corner (Ref. F) displays the electrospindle enabled and the tool if loaded.

To delete the tools present on the electrospindles, you must run an unloading cycle first.

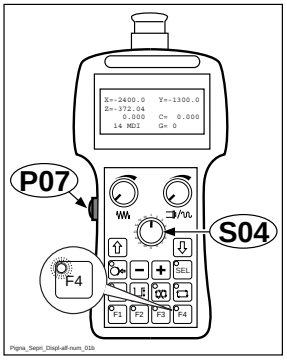
NOTE for Xilog Plus: after modifying the features of the tools in the Xilog Plus program (Editor), to make them immediately active in the Panel Mac program, exit the "MDI" environment (by selecting another: e.g.: manual) and reactivate the "MDI" environment.

During a cycle in "Automatic" mode, you have a dynamic view of the tool locations in the magazines and on the electrospindles.
Activate the display of the magazine locations from the "Automatic programs" menu using key combination Alt+F11.

. -
(mag-r16/24_1.2_acc-fx_q1.4a2)
To prepare the store to proceed as it follows:

LOADING THE TOOL ON THE MAGAZINE:

. -
(mag-r16/24_1.2_acc-fx_q1.4b)
SEPRI remote pushbutton panel



- Activate magazine selection with key F4 (the light turns on);
- Select the magazine with the “S04” switch (See chap. "Table of work units / axes")
- Go inside the perimeter guards with the mobile push-button
- magazine activation is only possible with a door open
- Press and hold the “P07” button;
- Use the “+ / -“ buttons to turn the magazine (+ = clockwise rotation; - = anti-clockwise rotation)
- Load the tool in the correct location
- After loading all the tools, move away from the protective devices and restart the machine.

. -
(mag-r16/24_1.2_acc-fx_q1.4c)
SINTESI remote pushbutton panel

- Activate magazine selection with key F4 ;
- Select the magazine with the “S04” switch (See chap. "Table of work units / axes")
- Go inside the perimeter guards with the mobile push-button
- magazine activation is only possible with a door open
- Keep the "P07" button pressed (The "P07" button has a dual position: keep it pressed in the intermediate position. Fully pressed (anti-panic function) has the same effect as if it is released)
- Using buttons " + / - " rotate the magazine (+ = clockwise rotation; - = anti-clockwise rotation) .
- Load the tool in the correct location
- After loading all the tools, move away from the protective devices and restart the machine.

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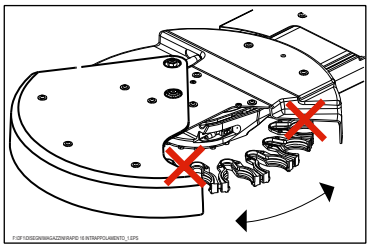
(mag-r16/24_1.2_acc-fx_q1.4d)



NOTE: releasing push-button "P07" during magazine rotation generates the immediate stop of magazine rotation

It is important that software setup coincides faithfully with machine actual setup, if not, there is the risk of causing serious damage

During manouvres in "manual" the tool number memorised by CNC is not updated. Therefore when you start machining in automatic again check that the tool on the spindle and the tool in the CNC memory coincide.

WARNING!: during magazine rotation there are areas between the tool holder disk and the safety guards where you could easily trap your hands. Take great care to keep your hands away from the magazine while it is rotating.

Q1.5 Maintenance and lubrication

(=tr_12_hsk63_3.42.5)

WARNING: All cleaning and maintenance operations must be performed by skilled personnel only. Before you start any cleaning or maintenance operations, switch off and lock out the main electrical and compressed air switches.

Do not attempt to perform repairs or other operations not described in this manual.

This machine must only be used and maintained by suitably qualified and authorised personnel.
All operations requiring dismantling of machine components must only be performed by suitably skilled and authorised personnel.
When changing machine parts only use original spare parts. The manufacturer declines all responsibility for damage caused by the use of non-original spare parts.
Accident prevention regulations, safety precautions and occupational health and safety recommendations must be followed at all times.

CAUTION!: FAILURE TO CARRY OUT THIS MAINTENANCE OPERATION MAY EFFECT MACHINING QUALITY AND CAN INCREASE THE RISK OF TOOL BREAKAGE.

NOTE: The maintenance intervals given above are intended as a guide only. With particularly dusty operations (e.g. machining agglomerates) the maintenance operations must be performed more frequently to ensure continued machine efficiency.

HSK63 tool taper maintenance

(=tr12_hsk63_3.42.5b_implat-inp)

Clean the cone outside and inside with a dry and clean cloth every week.
Every month clean the contact surfaces (shown in grey in the figure) between the tool tapers and the chuck using acetone (CAUTION! FIRE HAZARD). Next, lubricate this area with the Teflub lubricant supplied (SCM: 0002400034A) Teflub is a dry, dustproof, waterproof lubricant which ensures correct clamping of the tool tapers.

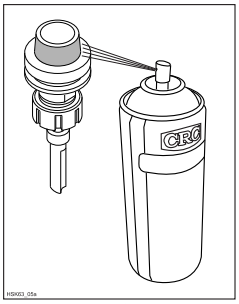
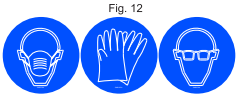


Fig. 12



NOTE: On tool holder tapers not supplied by manufacturer, perform this operation the first time the tapers are used.
WARNING: If the machine remains switched off for a long period of time (more than one week), the cone that stays mounted on the electro spindle must be carefully cleaned and lubricated.

IMPORTANT: AS WELL AS OBSERVING THE WARNINGS ON THE CANISTER:
- DO NOT INHALE VAPOURS OR NEBULISED SUBSTANCES
- MAKE SURE THAT THE AREA USED IS WELL VENTILATED
- WEAR PROTECTIVE GLOVES IF CONTACT IS PROLONGED
- WEAR EYE PROTECTION

. .
(sp_105mm)

INDEX

Z.1 Warnings

(ux5-hde_1.1_ce_ftc+bps_z.1)

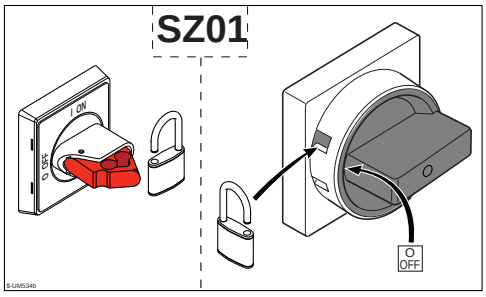
Don't make any repairings and/or interventions not foreseen in this handbook.

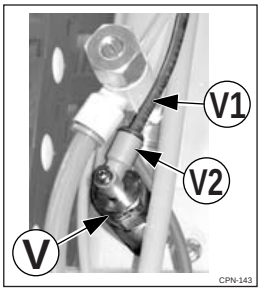
Only fully trained and authorised personnel can use the machine and carry out maintenance operations.
All the operations requiring the disassembly of parts have to be committed to the technical staff authorised by the constructor
Use only spare parts exclusively original in case of changing of some of the machine parts
Follow the safety and hygienic rules on work during the maintenance phases.
The constructor doesn't take any responsibilities for damages coming from the use of non original spare parts.

ATTENTION: Make sure the machine is disconnected from the electrical and pneumatic supply before carrying out any maintenance, checks, cleaning and lubrication, so that it cannot be started up accidentally:

to disconnect the machine from the electrical and pneumatic supply, turn the "SZ01" main switch to zero and padlock it
Apply a sign to the machine indicating that work is being carried out.

ATTENTION: When the machine is pneumatically isolated the air in the system is not unloaded: possible control or maintenance operations have to be executed by skilled technicians as the tubes disconnection could generate unexpected movements on the machine.
All the pneumatic cylinders of the devices ON-OFF in direction "Z" they remain in pressure.
NOTE ONLY FOR SPECIALIZED TECHNICIANS : after the air unloading operation from the system, the chambers of some cylinders remaining in pressure by the locking valves V
In case of maintenance (replacement of the cylinder or necessity to lower the operating unit) to unload the air in the cylinder it is necessary to:
- remove the tube of the air V1
- by a air gun pilot the valve from the V2 nipple to unload the air from the cylinder
- this operation allows the descent of the operating unit
ATTENTION: NOT REMOVE THE VALVE BEFORE HAVING EFFECTED THIS OPERATION!





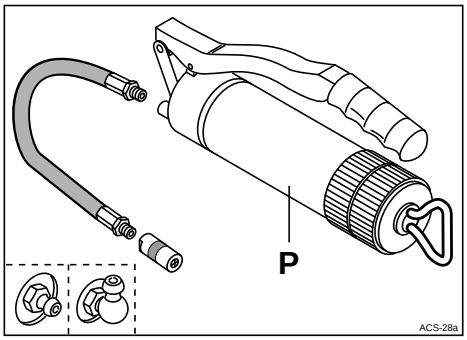
CAUTION:
The keys for padlocks for the main electricity On/Off switch and the filter unit compressed air quick discharge valves, and the tool for opening the electrical cabinet doors must be supplied to authorised personnel.
All the operations have to be executed by the operator in charge of maintenance or by technical and qualified personnel.

INTRODUCTION: It is essential that deadlines be met and maintenance operations carried out in order for the machine to function properly in time. Proper function involves both the productive part of the machine and the part connected with safety.

The intervals between maintenance operations are approximate and may vary according to the working environment of the machine and the type of material being machined:
NOTA: N.B.: Recommended maintenance intervals are calculated according to use of the machine for approx. 8 hours per day. If the machine is used more than this for example, several shifts each day) maintenance operations must be carried out more often.

IMPORTANT: The machining of medium density material creates very fine sawdust and shavings; in these cases the maintenance and lubrication operations must be performed more frequently

To inject grease, use the grease gun P provided ; each pump of the gun corresponds to 0.7 cm^3 of grease.



Numeric Control battery expiry date: bear in mind that the numeric control is fitted with a buffer battery whose average duration is greater than 5 years. We recommend replacing it at the expiry of the fifth year of machine use.

Generally, the first sign of battery decline is the repeated loss of the buffered data, such as "number of tool inserted in electro-spindle". It is better not to wait for this event and act beforehand; otherwise you could loose all the Numeric Control data.

For further explanations please consult the Support Service.

Z.2 Cleaning

(u2412_1.0_ce_ftc_20.2)

WARNING: During maintenance, cleaning and lubrication operations, make sure that the power supply and compressed air are switched off and cannot be accidentally switched on .

Every day, at the end of work, carefully clean the worktable and the surrounding areas, with an extractor.

For correct cleaning of the machine, follow the instructions below:
- Remove sawdust and shavings with a vacuum cleaner. Do not use compressed air. Compressed air will only blow dirt into delicate machine parts leading to operating faults.
- Keep the axis guides and screw drives clean at all times.
- Keep the work surfaces and suction heads clean at all times.
- Keep the working zone around the machine clean.

Machining head: a correct extraction favours a good functioning of the heads and prevents failures due to overheating. Every week control the perfect efficiency of the complete extraction system.

Z.3 Periodic Checks and Maintenance

(a632_ceb1.0-20.3)

WARNING: During maintenance, cleaning and lubrication operations, make sure that the power supply and compressed air are switched off and cannot be accidentally switched on .

CAUTION:
All the operations have to be executed by the operator in charge of maintenance or by technical and qualified personnel.
The intervals between maintenance operations are approximate and may vary according to the working environment of the machine and the type of material being machined:
The machining of medium density material creates very fine sawdust and shavings; in these cases the maintenance and lubrication operations must be performed more frequently.
NOTA: N.B.: Recommended maintenance intervals are calculated according to use of the machine for approx. 8 hours per day. If the machine is used more than this for example, several shifts each day) maintenance operations must be carried out more often.

PRECAUTION: IT IS EXTREMELY IMPORTANT TO REGULARLY CHECK THAT SAFETY DEVICES ARE WORKING PROPERLY ESPECIALLY IF THEY ARE NOT OFTEN ACTIVATED (SEE CHAP. 2.1).

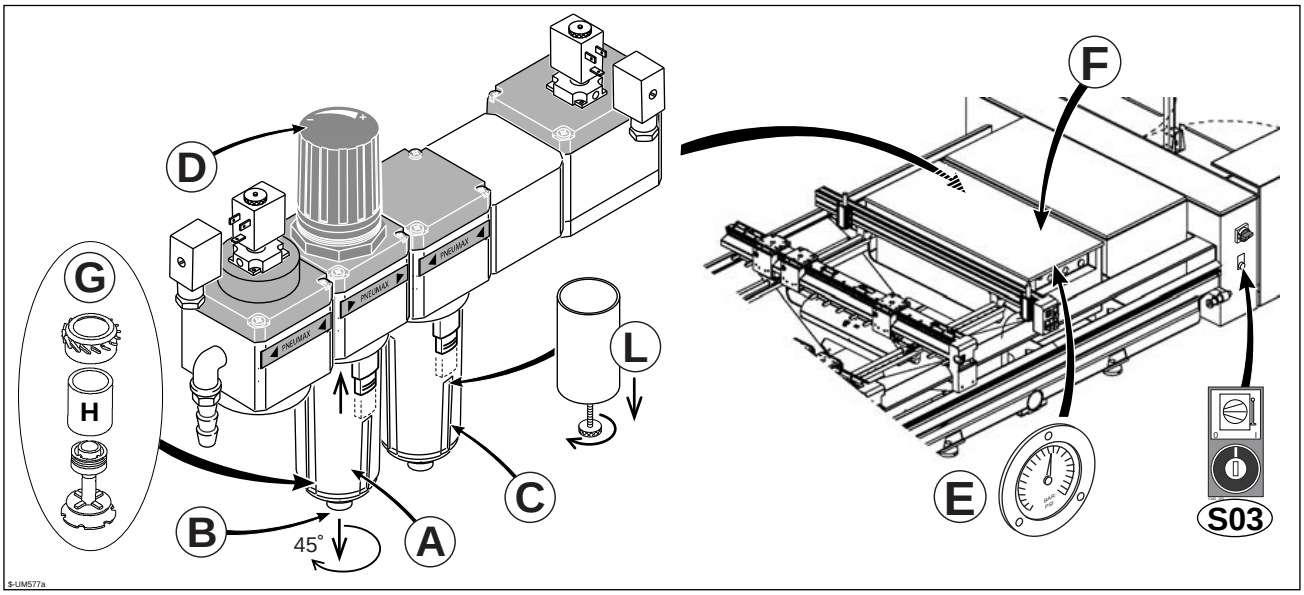
. Filter unit

(ux5-hde_1.0_ce_ftc+bps_z.3a)

Regularly control (every day) that the pressure indicated by the pressure gauge (E) remains at the optimal value: 6.5 bar.
The necessary corrections are carried out with the knob (D).

AT FREQUENT INTERVALS (daily maintenance)
Filter unit:
Check the water (condensation) level in the tank A: it must not go above the level marked.
If the water level goes above the level marked, immediately check operation of the float inside which activates automatic discharge from the connector B:

- shut off the air supply with the selector "S03"
- remove the tank A
- using a screwdriver release the float by pushing it down (this opens the bleeder valve)
- run a test, filling the tank with water to check if the float is operating: if it is, refit the tank, if it isn't, fit a new tank.



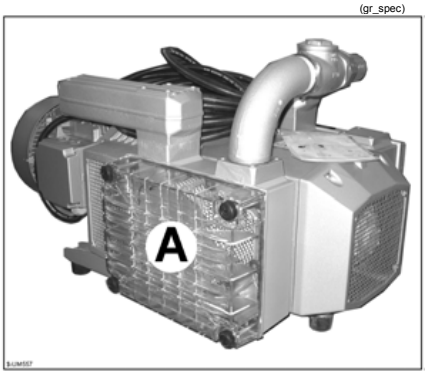
Every 180 hours
Filter clean:

- move the machining units to the parking position
- shut off the air supply by turning and lifting the knob C
- remove the carter F
- remove the tank A
- unscrew the filter unit G
- clean with compressed air blown from the inside of the filter H
- reassemble the parts

When the machine stops due to a drop in the pressure of the compressed air supplied, first check the entire supply system. If the system supplies enough air, change the filters H - L.

. Vacuum pump filter

(gr_spec)



Verify periodically by a visualisation the condition of the filter A.

WARNING: During cleaning operations, make sure that the power supply is switched off: turn main switch to the zero (0) position and lock it with a padlock .

To clean it is necessary to:
- remove the transparent cover
- Remove the filter
- suck into the filter
- clean the filter blowing from inside to outside

At the end of the operations reinstall the cover paying attention to install correctly the seals.

. VACUUM PUMP MAINTENANCE

(a632_ceb1.0-20.3d)

The pump maintenance schedules are shown below: the relative instructions are included in the documentation supplied with the machine.

NOTE: If the filters are oily or greasy, they must be replaced.

WARNING: FAILURE TO OBSERVE PUMP MAINTENANCE AND LUBRICATION INSTRUCTIONS MAY RESULT IN THE PUMP OVERHEATING AND BEING DAMAGED.

Maintenance for vacuum pump				
	Clean the filters	Replace the filters	1° Check the vanes	Check the vanes (after the first)
Brand / Model				
Rietschle / VLT 40	**400/500 hours**	**1500/2000 hours**	**5000 hours**	**1000 hours**
Rietschle / VTA 100	**400/500 hours**	**1500/2000 hours**	**6000 hours**	**2000 hours**
Rietschle / VTB 250	**400/500 hours**	**1500/2000 hours**	**2000 hours**	**500 hours**
Becker / VT 4.40	**400/500 hours**	**1500/2000 hours**	**3000 hours or at least once a year**	
Becker / KVT 3.100	**400/500 hours**	**1500/2000 hours**	**3000 hours or at least once a year**	
Becker / VTLF 250	**400/500 hours**	**1500/2000 hours**	**3000 hours or at least once a year**	

ATTENTION: Any presence of aluminium shavings in the empty pump filter does not present represent a problem.

As it is impossible to completely remove all work top residues, an accumulation of shavings in the filter is considered normal in the first work hours of the machine.

Carry out the cleaning of the filter as normal.

Air conditioner for electric enclosure (Optional)

(condiz.-a.e._1.0)

PERIODICALLY (weekly maintenance):

WARNING: During cleaning operations, make sure that the power supply is switched off: turn main switch to the zero (0) position and lock it with a padlock .
By opening the electric cabinet door, the conditioner stops working: in certain conditioner models, the cooling fan continues working for a few minutes.

-
(condiz.-a.e._1.0b)

Cleaning of condenser:
- dismantle the external lid
- clean the flaps using compressed air (max 4 bar) : blow compressed air being careful not to damage or bend the aluminium flaps.

Check the efficiency of the condense drain.

. -
(condiz.-a.e._1.0c)

Machines used to machine workpieces with an aluminium coating (fitted with the closed cable holder chain of the "X" axis), are fitted with metallic filters on the conditioner fan.
Regularly check the state of the filter and clean it with degreasing detergents making sure to dry it thoroughly before reassembly.
Remove the filter from the opening A.

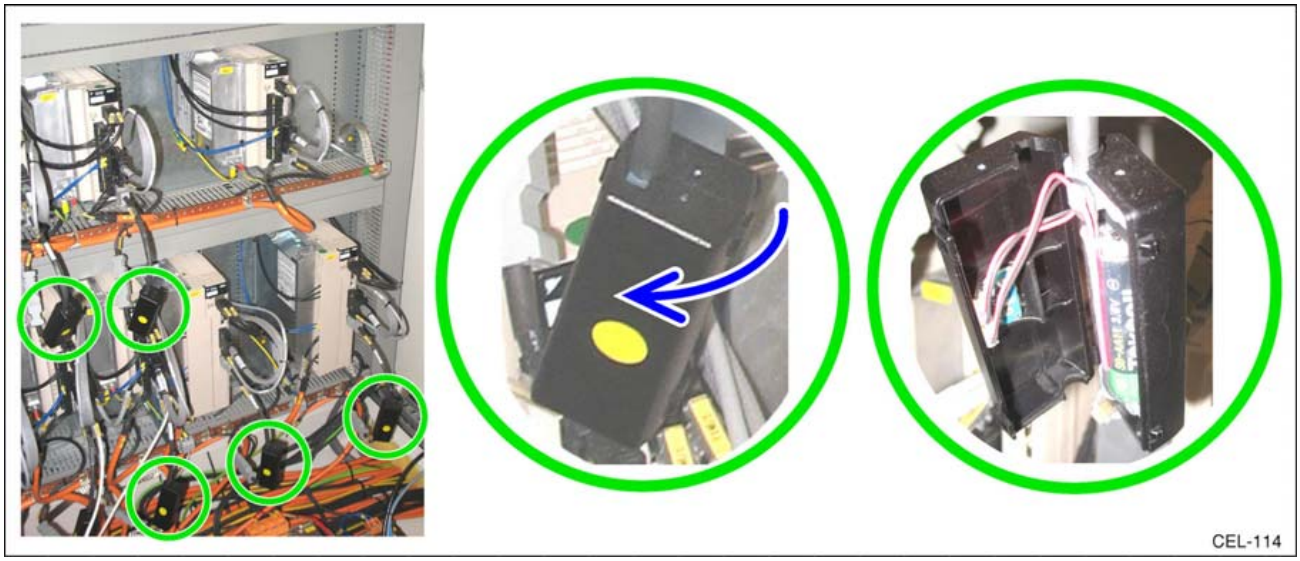
How to replace the battery of Yaskawa absolute encoders

(sost-batt-enc-yaskawa)

Yaskawa absolute encoders are provided with buffer battery with a 5-year lifespan

ONLY TECHNICIANS QUALIFIED TO SERVICE MACHINERY WITH LIVE ELECTRICAL CABINETS SHOULD FOLLOW THIS PROCEDURE.

The replacement procedure is as follows:
Open the electrical cabinet WITHOUT TURNING OFF THE POWER
Open the battery compartment as shown in the picture.



Remove the connector connected to the battery.
Insert the new battery (code 00L0031016B).
Close the compartment.

Note: After replacing the battery, it is advisable to always mark the date of the replacement in the battery compartment for quick consultation.

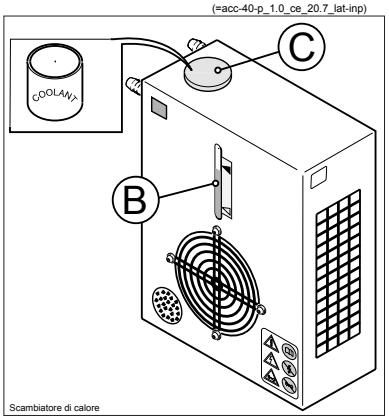
Z.3.1 PHOTOCELLS (if present)

(u2412_1.0_ce_ftc_20.3.1)

The safety photocells barrier does not require specific maintenance interventions. Nevertheless we recommend regular cleaning of the transparent front surfaces that protect the projector and receiver optics, in order to avoid an excessive build up of dust that could disturb the transmission and reception functions of the optical beams and block the equipment and the attached machine.
Cleaning must be carried out with a clean damp cloth; in particularly dusty environments, after cleaning the plexiglass, we recommend spraying an antistatic product.
In any case, no abrasive, corrosive products, solvents or alcohol must be used as they could damage the surface being cleaned. Wool cloths must not be used either, to avoid electrifying the plexiglass (consult the attached booklet).

Z.3.2 HEAT EXCHANGER (WHERE EXPECTED)

(=acc-40-p_1.0_ce_20.7_lat-inp)



Before filling the tank, control that the pump motor turns freely.
Never run the pump "dry" for longer than 30 seconds.

Control the cooling fluid level through the small window (B). When it is close to the "MIN" level top up through the inlet (C) until the "MAX" level.
Use only fluid (to be ordered from the spare parts department) with the 0736238634E code.
Do not dilute with water.
Use perfectly clean containers to top up the fluid.

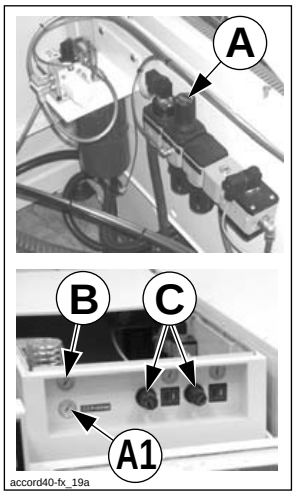
Be careful: the fluid is toxic.

A flow rate switch sends an alarm message to the C.N. when the flow drops below the calibration value.
Frequently clean the cooling batteries and the pump motor with compressed air (max pressure 10 bar)
In case of extended inactivity, empty the tank completely.

Z.3.3 Pressure regulator units

(reg-press-acc40fx)

Only fully trained and authorised personnel can use the machine and carry out maintenance operations.



Filter unit :
- To adjust the compressed air pressure, lift and rotate the knob A to obtain the setting required. Read off the air pressure on the pressure gauge A1. The recommended working pressure for this machine is 6,5 bar.
- Press down the knob A to lock it in position.

Pressure multiplier:
- Com a máquina pára (não funciona) B verificar o medidor de que a pressão é de 10-11bar: caso contrário entre em contato com seu representante de serviço.

INSTRUMENT CALIBRATED BY THE MANUFACTURER: MAKING ANY CHANGES IS PROHIBITED!

Workpiece clamps:
- Adjust the pressure with the knobs C according to work needs: the pressure can be set between 4 bar and 6.5 bar (or max pressure set on the filter unit)

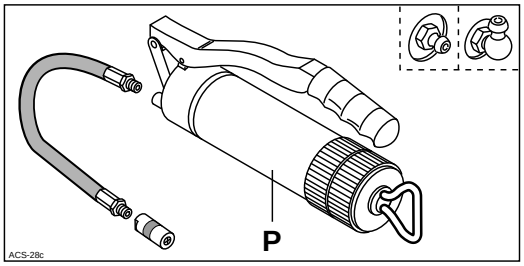
Z.4 Periodic Lubrication

(u2412_1.0_ce_ftc_20.4_imp-lat)

WARNING: During maintenance, cleaning and lubrication operations, make sure that the power supply and compressed air are switched off and cannot be accidentally switched on .

CAUTION:
All the operations have to be executed by the operator in charge of maintenance or by technical and qualified personnel.
The intervals between maintenance operations are approximate and may vary according to the working environment of the machine and the type of material being machined:
The machining of medium density material creates very fine sawdust and shavings; in these cases the maintenance and lubrication operations must be performed more frequently.
The manufacturer cannot be held responsible for any damage arising from lubricating operations carried out incorrectly or the use of lubricants different from those indicated.
N.B.: Recommended maintenance intervals are calculated according to use of the machine for approx. 8 hours per day. If the machine is used more than this (for example, several shifts each day) maintenance operations must be carried out more often.

To inject grease, use the grease gun P provided; each pump of the gun corresponds to 0.7 cm^3 of grease.



-

(elenco_lubr_gr-op-univ-hde)

LIST OF OPTIONAL OPERATING UNITS:
- Boring heads : see chapter N...
- Electrospindles : see chapter P...
- Tools magazine: see chapter Q...
- Disk-type cutter : see chapter R...

. VACUUM PUMP LUBRICATION

(a632_ceb1.0-20.4g)

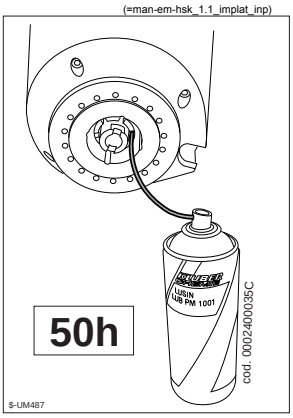
The pump lubrication schedules are shown below: the relative instructions are included in the documentation supplied with the machine.

WARNING: FAILURE TO OBSERVE PUMP MAINTENANCE AND LUBRICATION INSTRUCTIONS MAY RESULT IN THE PUMP OVERHEATING AND BEING DAMAGED.

Vacuum pump lubrication schedule		
	1st lubrication	Periodic lubrication (after the first)
Brand / Model		
Rietschle / VLT 40	Lubricated for working life	
Rietschle / VTA 100	10000 hours or at least once a year	
Rietschle / VTB 250	4500 hours or at least once a year	
Becker / VT 4.40	Lubricated for working life	
Becker / KVT 3.100	Lubricated for working life	
Becker / VTLF 250	3000 hours or at least once a year	

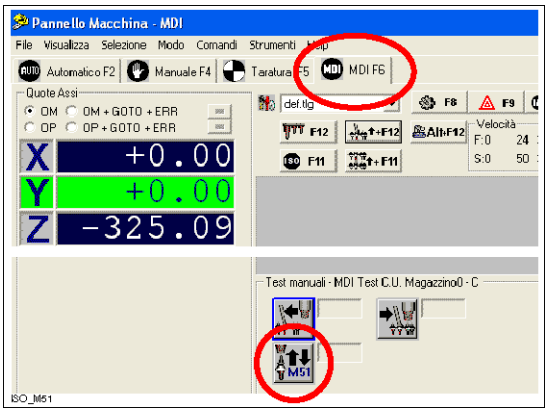
. Electrospindle and HSK63 taper maintenance

Every 50 hours: lubricate the tool taper clamping unit with the grease spray provide (code: 0002400035C).

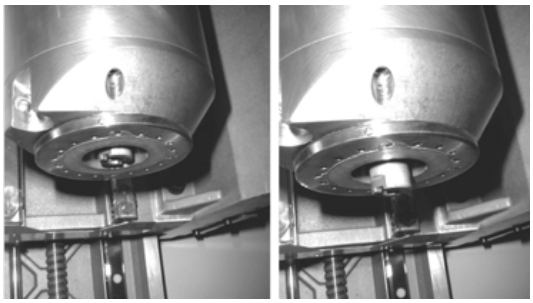


Unload the tool in the tools crib
Move the operator unit to an accessible position.
Insert the spray can tube in the gap between two of the collet sections and, holding the can in a vertical position, spray.
repeat the operation for the other gaps.

For a correct distribution of the grease between the pedals of the clamps it is necessary to activate the locking /unlocking cone tool-holder function into the emergency condition. Execute this procedure:
- Machine state operating
- Selection MDI ISO page
- Selection the electrospindle by the code M51 (or M31-M32 in base to the type of machine) activating it with "Enter" and "Start cycle"



- Activate the emergency of the machine: the key "T06" is operating
- Execute the locking/unlocking cycles by the key "T06" (almost 10/15 cycles)



At the reset from emergency of the machine the key "T06" are disabilited

To reactivate the machine, first reset the messages with the F11 + keys.

Ref.	Picture	Description / Function Use and / or indication
T06a		Button for locking-unlocking the HSK63 cone: Enabled in “MDI” and “Manual” mode: not enabled in “Automatic” mode The light is steady when the cone is locked in position
T06b	Lock/Unlock	Button for locking-unlocking the HSK63 cone: Enabled in “MDI” and “Manual” mode: not enabled in “Automatic” mode

Insert an empty cone and have the electric spindle rotate at 18000 rpm for about a minute.

At the end, stop the machine again, extract the tool cone and eliminate any grease deposited on the inside walls of the electric spindle shaft with a cloth and, if necessary, with acetone (WARNING: ACETONE IS A FLAMMABLE LIQUID!)

NEVER blow air jets inside the spindle as it could push dust and dirt inside and cause irreparable damages to the spindle.

Also clean the hollow part of the tool cone

HSK63 tool taper maintenance

(tr12_hsk63_3.42.5b_imp-lat)

Clean the cone outside and inside with a dry and clean cloth every week.

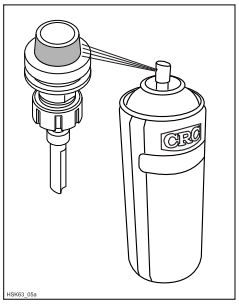
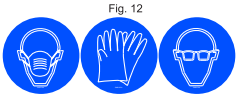


Fig. 12

Every month clean the contact surfaces (shown in grey in the figure) between the tool tapers and the chuck using acetone (CAUTION! FIRE HAZARD). Next, lubricate this area with the Teflub lubricant supplied (SCM: 0002400034A) Teflub is a dry, dustproof, waterproof lubricant which ensures correct clamping of the tool tapers.

NOTE: On tool holder tapers not supplied by manufacturer, perform this operation the first time the tapers are used.
WARNING: If the machine remains switched off for a long period of time (more than one week), the cone that stays mounted on the electro spindle must be carefully cleaned and lubricated.

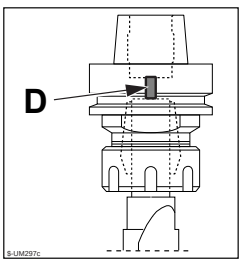


IMPORTANT: AS WELL AS OBSERVING THE WARNINGS ON THE CANISTER:
- DO NOT INHALE VAPOURS OR NEBULISED SUBSTANCES
- MAKE SURE THAT THE AREA USED IS WELL VENTILATED
- WEAR PROTECTIVE GLOVES IF CONTACT IS PROLONGED
- WEAR EYE PROTECTION

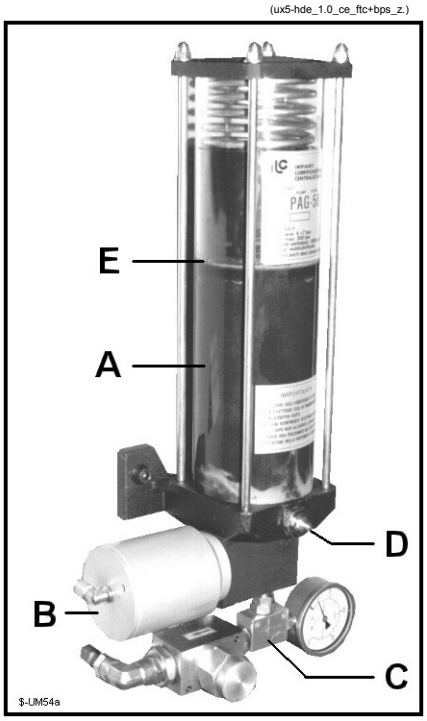
-

(grano_su_hsk_imp-lat)

CAUTION: Check that grub screw D is always fitted in the tool-holder spindle: if it is not fitted dust can get into the electro-spindle and cause malfunctions and damage.



Z.5 Centralised Lubrication Unit (OPTIONAL)



The centralised lubrication unit automatically lubricates the sliding devices on the X-Y-Z axes.
The unit consists of a grease tank A , a pneumatic pump B, and a level microswitch C which signals when the tank is empty to the distributors.
The distributor is fitted with a microswitch which checks that the lubrication cycle is operating correctly.
Automatic lubrication is controlled by the Numeric Control operating the pump and displaying the message "Lubrication operating".

The error message "Lubrication error" is caused by:
1 - Empty grease pump
2 - Fault in lubrication equipment.

- In case 1, refill the grease tank by injecting grease through the nipple D. When the tank is completely full surplus grease will begin to flow out of the hole E.
Do not fill the grease tank 100% full so as to avoid straining the seals.

- Case 2 occurs when the microswitch on the distributor no longer detects the presence of grease.
In this case:
- complete the current operating cycle;
- press the STOP pushbutton on the N.C. to clear the error message;
- check if the error message N° PLC74 occurs again on the next lubrication cycle;
- if the error message appears again on the next lubrication cycle, first check all the electrical connections of the microswitches, microswitch efficiency and then check for blockages in the lubrication equipment.
If the lubrication interval needs adjusting (set at 180 minutes during testing) proceed as follows:

- press key "F6" in the basic menu to activate the "MDI" state
- go to the "ISO" field
- type the command E30023=xxx (for CNC NUM) or command %ETK[23]=xxx (for CNC KVARA), or command @GW80=xxx (for CNC OSAI), substituting xxx with the new lubrication interval: the unit of measurement is minutes
- press ↵ invio to confirm and press "start cycle" on the mobile control panel to acquire the new value.

The tank is on electric control panel or on upright depending on how machin=e is set up

Z.6 Table of greases and oils

(a-m800_3.3_ce_bps_20.5)

GREASE FOR GEARS (Type "A") (BORING HEADS, ROUTING UNITS)	
KLUBER	ISOFLEX NBU 15

GREASE FOR BEARINGS, SCREWS AND RECIRCULATING BALL SHOES (Type "B")	
AGIP	GR MU EP0

GREASE FOR CENTRALISED LUBRICATION UNIT (Type "D")	
AGIP	GR MU EP0

To lubricate the axes in either manual or automatic mode, use grease of the type: "AGIP GR MU EP 0" with the following properties:

- Type of oil: Mineral Oil;
- Type of soap: Lithium;
- ASTM penetration (according to ASTMD217 method): 350-370;
- NLGI level (according to DIN 51818): 0;
- Additive: EP;
- Drop point: 180°C;
- Oil based: at or below 160 CST at 40°C

NOTE: check the grease type contained in the device you wish to lubricate; never mix different types of grease.
Important: if using different types of grease, make sure they have the same features as indicated above.

IMPORTANT! NEVER MIX DIFFERENT TYPES OF GREASE: mixing greases that have different basic components can cause a chemical reaction which may consequently alter their lubricating properties and, in some cases, may provoke solidification with subsequent seizure of the parts intended to be lubricated.

The manufacturer cannot be held responsible for any damage arising from lubricating operations carried out incorrectly or the use of lubricants different from those indicated.

Z.7 Maintenance table

(ux5-hde_1.0_ce_ftc+bps_z.1b)

CHART MAINTENANCE

Symbols

Turned on machine	Out machine	Adjustment mode"	Control	Cleaning	Lubrification
I ON	O OFF				

CONTROLS TO EVERY STARTING OF THE MACHINE

Ref.	Machine conditions	Type of intervention	Device	Ref.	Description of the operation	Ref. on "Use and Maintenance Manual"."
A	I ON		Red mushroom-heads push-buttons of stop of emergency	A2	To check that to the pressure on the push button the machine him stops in "Emergency"	Chap.2.1.1
				A3	To check the correct restoration from the state of emergency	Chap.2.1.1
	I ON		Safety photocells barrier	A4	To check that invading the area delimitated by the photocells barrier the machine him stops in "Emergency"	Chap.2.1.2
				A5	To check the correct restore from the state of emergency	Chap.2.1.2

CONTROLS - CLEANING - LUBRICATION

Ref.	Machine conditions	Type of intervention	Frequency	Device	Ref.	Description of the operation	Ref. on "Use and Maintenance Manual"
B	O OFF		Every 16 hours or at least once a day	Unit filter-pressure regulator	B1	Control / adjustment / I restore levels / unloading condenses	Chap.20.3
				Recirculating ball screws and sliding blocks "X"-"Y"-"Z" axis	B2	Lubrication	Chap.20.4
C	O OFF		Every 40 hours or at least once a week	Electrical cabinet air filters	C1	Cleaning / washing / substitution	Chap.20.3
	O OFF			Vacuum pump filters	C2	Cleaning / substitution	Chap.20.3
	O OFF			Centralised Lubrication pump	C3	Check level of the grease / Restore level	Chap.20.4.2
	O OFF			Recirculating ball sliding block for electro-sp. support	C4	Lubrification	Chap.9…
	O OFF			Recirculating ball sliding block for tools cribs	C5	Lubrification	Chap.10…
				Electrospindles and toolholders	C6	Cleaning / Lubrification	Chap.20.4.1
D	O OFF		Every 180 hours or at least once a month	Compressed air tank	D1	Unloading condense	Chap.20.3.1
	O OFF			Unit pressure regulator	D2	Check / regolation	Chap.20.3.2
E	I ON		Every 1000 hours or at least every six months	Boring heads	E1	Gears lubrification	Chap.20.4 Chap.8…

Z.8 Removal - Storing - Scrapping

(acc-40-p_1.0_ce_20.10_inp)

Before removing the machine disconnect it from the electrical and pneumatic system.
In case of prolonged inactivity disconnect the machine from the electrical and pneumatic system, clean it thoroughly and protect sliding guides and tool holder spindles with rust preventer. Do not store the machine in humid environments and protect it from atmospheric agents.

The machine is manufactured with non-toxic and non-noxious materials: in case of demolition separate ferrous materials from plastic materials before scrapping.

For the dismantling of the machine it is necessary to follow the normative in force, contacting specialized firms in the discarding / disposal refuses.

(sp_210mm)

INDEX

W4 Applications on the lubricants machine

(applic-olii_acc-40fx)

Applications	Lubricant type	Brand / Product
Boring gears unit	Grease	Klüber / ISOFLEX NBU 15
Conical torque disc mill gears	Grease	Klüber / ISOFLEX NBU 15
Centralised lubrication pump for screws and recirculating ball slide guides	Grease	AGIP / GR MU EP 0
Manual lubrication for screws and recirculating ball slide guides	Grease	AGIP / GR MU EP 0
Guide "paletta convoglia trucioli" su elettromandrino	Oil	AGIP / OBI 12
Cones blocking gripper on electro-spindles	Spray	Klüber / LUSIN LUB PM 1001
Spindles tools holder HSK	Spray	CRC / TEFLUB
Metal parts protection	Oil	FUCHS / ANTICORIT 2006

NOTE: SCM GROUP SPA supplies attached the safety data sheets on the substances present in the machine only in Italian: contact the manufacturer directly to have the safety data sheets in the desired language.

W4.1 KLÜBER - ISOFLEX NBU 15

(klüber_isoflex-nbu15_rel.1-96)

KLÜBER LUBRICATION ITALIA s.a.s.
20098 S. Giuliano Milanese (MI)
Via Monferrato, 57 - Tel. (02) 98213.1 (ric. aut.)
Telex: 316090 KLITAI I - Telefax: (02) 98.28.15.95

KLÜBER LUBRICATION

Pagina:	1 di 4
Data di spedizione:	01/10/96
Data di revisione:	17/07/96
Numero di revisione:	1

SCHEDA DI SICUREZZA DEL PRODOTTO

ISOFLEX NBU 15

1.	**IDENTIFICAZIONE DEL PRODOTTO E DELLA SOCIETÀ PRODUTTRICE**
1.1	**Nome del prodotto:** ISOFLEX NBU 15 art. 004026
1.2	**Impiego:** Grasso lubrificante speciale.
1.3	**Indirizzo fornitore:** Klüber Lubrication Italia s.a.s. di G. Pieri via Monferrato 57 frazione Sesto Ulteriano 20098 San Giuliano Milanese - Milano - Italy
1.4	**Ufficio sanitario interno:** Tel. 02/98213392
1.5	**Emergenza:** Centro antiveleni Ospedale Niguarda di Milano. Tel. 02/66101029
2.	**INGREDIENTI PERICOLOSI**
2.1	**Caratteristiche chimiche:** Oli lubrificanti altamente raffinati. Datore di consistenza al sapone di bario. Additivi.
2.2	**Ingredienti pericolosi:**
2.3	**Cas. N°:**
2.4	**EINECS N°:**
2.5	**N° CEE:**
3.	**IDENTIFICAZIONE DEI PERICOLI**
3.1	**Principali rischi per la salute:** Nessun rischio particolare.
4.	**MISURE DI PRIMO SOCCORSO**
4.1	**Inalazione:**
4.2	**Contatto con la pelle:** Lavarsi con acqua e sapone.
4.3	**Contatto con gli occhi:** Lavare con acqua corrente.
4.4	**Ingestione:** Non provocare il vomito. Chiamare il medico.
4.5	**Altre misure di primo soccorso:** Nessuna.
5.	**DATI SULLA INFIAMMABILITÀ E SULLA ESPLOSIVITÀ**
5.1	**Mezzi di estinzione:** Raccomandati: Anidride carbonica, polveri.
5.2	**Mezzi di estinzione inadatti:** Acqua.
5.3	**Procedure anti incendio eccezionali:** Non soggetto.
5.4	**Procedure antincendio speciali:** Non soggetto.
5.5	**Altre prescrizioni:** Equipaggiamento per gli addetti: Autorespiratore per protezione delle vie respiratorie.
5.6	**Prodotti di combustione:** CO + CO_2 + Nerofumo + idrocarburi incombusti.

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SCHEDA DI SICUREZZA DEL PRODOTTO

ISOFLEX NBU 15

6. MISURE IN CASO DI FUORIUSCITA ACCIDENTALE

6.1 **Equipaggiamento di protezione da usare:**
Autorespiratore in caso di incendio.
Indumenti antiolio.
È buona norma l'uso degli occhiali.

6.2 **Spandimenti sul suolo:**
Contenere e recuperare con l'aiuto di mezzi fisici, assorbire con materiale inerte (vedere paragrafo 13). Lavare le superfici con prodotti appropriati: consigliamo l'impiego di detergenti acquosi facilmente smaltibili. Inviare allo smaltimento presso Enti autorizzati il materiale usato per la bonifica (RIFIUTO SPECIALE).

6.3 **Spandimenti nell'acqua:**
Evitare che il prodotto defluisca in fognature o in corsi d'acqua. Se del caso informare tempestivamente le USSL di zona.

7. IMMAGAZZINAMENTO E MANIPOLAZIONE

7.1 **Temperatura di trasporto:**
Ambiente.

7.2 **Temperatura di stoccaggio:**
Conservare il prodotto lontano da fonti di calore, fiamme libere e quadri elettrici.

7.3 **Precauzioni per la manipolazione:**
Come per gli oli minerali.

7.4 **Incompatibilità:**
Con ossigeno puro.

7.5 **Rischio di accumulazione elettrostatica:**
È bene che tutte le scaffalature o le strutture metalliche del magazzino siano messe a terra.

7.6 **Contenitori usuali di spedizione:**
Imballi metallici.

7.7 **Altre informazioni:**
Nessuna.

8. CONTROLLO DELL'ESPOSIZIONE/PROTEZIONE DEL PERSONALE

8.1 **Limiti di esposizione del personale:**
Contiene olio minerale TLV-TWA 5mg/m³.

8.2 **Protezione del personale:**
– Respiratoria: non necessaria nelle condizioni normali di impiego.
– Mani/pelle: guanti antiolio per soggetti allergici
– Occhi: è buona norma l'uso degli occhiali

8.3 **Equipaggiamento protettivo personale:**
Grembiule antiolio per soggetti particolarmente allergici.

8.4 **Informazioni tecniche:**

9. PROPRIETÀ FISICHE E CHIMICHE

9.1 **Stato fisico a temperatura ambiente (20 °C):**

Aspetto	Pastoso
Colore	Avorio-beige
Odore	Percettibile
Densità a 20°C ASTM D4052(g/cm³)	0,99
Pressione di vapore a 20°C (p.s.i)	–
Solubilità in acqua	Insolubile
Infiammabilità COC - ASTM D92(°C)	Sup. 220

9.2 **Caratteristiche organolettiche:**
Vedi p.to 9.1

9.3 **Caratteristiche determinate secondo:**
Rilevamento diretto e con i metodi analitici citati al punto 9.1.

9.4 **Ulteriori informazioni:**
Nessuna.

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SCHEDA DI SICUREZZA DEL PRODOTTO

ISOFLEX NBU 15

10.	STABILITÀ E REATTIVITÀ
10.1	**Reazioni pericolose:** A contatto con ossigeno può causare esplosività.
10.2	**Possibilità di polimerizzazione/condizioni da evitare:** Nessuna.
10.3	**Stabilità/Condizioni da evitare:** Stabile nelle normali condizioni d'uso.
10.4	**Incompatibilità/Condizioni da evitare:** Nessuna nelle normali condizioni d'uso.
10.5	**Prodotti pericolosi di decomposizione:** Nessuno.
11.	**INFORMAZIONI TOSSICOLOGICHE**
11.1	**Effetti della sovraesposizione:** Prevedere visite mediche periodiche per il personale addetto alla manipolazione dei lubrificanti secondo normative vigenti.
11.2	**per la pelle:** Lievemente irritante dopo contatto diretto e prolungato nel tempo.
11.3	**per gli occhi:** Nessun effetto nocivo.
11.4	**per inalazione:** Nessun effetto nocivo nelle normali condizioni di impiego.
11.5	**per ingestione:** Non causare il vomito e rivolgersi ad un medico.
11.6	**altri effetti pericolosi:** Rari casi di allergia potrebbero verificarsi su soggetti particolarmente predisposti.
12.	**IMPATTO ECOLOGICO**
12.1	**Eliminazione:** Secondo le normative citate al punto 15.3 della presente.
12.2	**Comportamento in ambiente acquatico:** Inquinante delle acque.
12.3	**Ecotossicità:**
12.4	**Precauzioni:** Utilizzare secondo le buone pratiche lavorative evitando di disperdere il prodotto nell'ambiente.
13.	**INFORMAZIONI SULLO SMALTIMENTO**
13.1	**Eliminazione del prodotto:** Operare secondo le vigenti disposizioni nazionali (DPR N° 691 del 23/8/82, legge N° 475 del 9/11/88, loro aggiornamenti ed eventuali disposizioni regionali per lo smaltimento come rifiuto speciale)
13.2	**Eliminazione dell'imballaggio:** Per affidamento ad enti autorizzati per lo smaltimento o per la rigenerazione degli imballi.
14.	**INFORMAZIONI DI TRASPORTO**
14.1	**UNNO (numero di riferimento USA per spedizioni aeree):** Nessuno.
14.2	**Trasporto su strada classe ADR:** Non pericoloso.
14.3	**Trasporto per via marittima classe IMO:** Non pericoloso.
14.4	**Trasporto per via aerea classe ICAO/IATA:** Non pericoloso.
14.5	**Trasporto via ferrovia classe RID:** Non pericoloso.

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SCHEDA DI SICUREZZA DEL PRODOTTO

Pagina:	4 di 4
Data di spedizione:	01/10/96
Data di revisione:	17/07/96
Numero di revisione:	1

ISOFLEX NBU 15

14.6 **N° ONU:**
Non applicabile.

15. INFORMAZIONI SULLA REGOLAMENTAZIONE

15.1 **Classificazione:**
Grasso lubrificante speciale.

15.2 **Etichettatura:**

Simbolo ed indicazione del pericolo:	Xn
Frasi di rischio:	R-22
Frasi di sicurezza:	S-28
Consigli di predenza:	Nessuno

15.3 **Normativa di riferimento (prodotto soggetto=X):**
X DPR n. 547/1955 Norme di riferimento per la prevenzione degli infortuni sul lavoro.
X DPR n. 303/1956 Norme generali per l'igiene del lavoro.
DPR n. 482/1975 Tabelle delle malattie professionali nella industria.
DL n. 277/1991 In materia di protezione dei lavoratori.
DM 28/01/1992 Classificazione e disciplina dell'imballaggio e dell'etichettatura dei preparati pericolosi.
DPR n. 915/1982 Sullo smaltimento dei rifiuti.
X DPR n. 691/1982 Attuazione della direttiva CEE n. 75/439 relativa alla eliminazione degli oli usati.
X DL n. 95/1992 Attuazione delle direttiva CEE n. 87/101 relativa alla raccolta degli oli usati.
Deliberazione 27/7/84 sullo smaltimento dei rifiuti.
Legge n. 475/1988 Disposizioni urgenti in materia di smaltimento dei rifiuti industriali o successivi aggiornamenti.
X Legge n. 319/1976 Norme per la tutela delle acque dall'inquinamento o successivi aggiornamenti.
X DL n. 133/1992 Scarichi idrici.
Circ. Ministero del Lavoro 20797/1977 Etichettatura contenitori oli minarali (oli da taglio).
Circ. Ministero del Lavoro n:46/1979 o 61/1981 - Ammine aromatiche.
Legge n. 245/1963 Limitazione dell'impiego del benzolo o suoi omologhi nelle attività lavorative.

16. ALTRE INFORMAZIONI

16.1 **Dati supplementari:**
Altre informazioni riguardanti la Direttiva 94/69/CEE, XXI adeguamento al processo tecnico della Direttiva 67/548/CEE; al D.Lgs. 626/94 ed al D.Lgs.242/96:
- La natura chimica dell'olio minerale contenuto in questo prodotto non rende necessario contrassegnare il lubrificante con la frase di rischio R45 (può provocare il cancro) e con la frase di rischio R49 (può provocare il cancro per inalazione).
- L'olio di base severamente raffinato è esente da PCB (policlorobifenili), PCT (policlorotrifenili).
- Il contenuto in Benzo (a) pirene è notevolmente inferiore a 50 ppm (0.005% peso).
- L'estratto con Dimetilsolfossido è notevolmente inferiore al 2% peso.

Per ogni ulteriore approfondimento rivolgersi al Servizio Sanitario Interno della Klüber Lubrication Italia Sas. vedi p.to 1.4.

Scheda conforme alla direttiva CEE 91/155 ed al DM 28/01/92.

Le informazioni riportate nella scheda sono redatte al meglio delle conoscenze del fornitore alla data di revisione. Esse hanno carattere informativo e presuppongono un corretto uso tecnologico del prodotto. La Klüber Lubrication non assume alcuna responsabilità per impieghi non idonei del prodotto.

W4.2 AGIP - GR MU EP0

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(agip_gr-mu-ep0_rel.2_08-2009)

SCHEDA DATI SICUREZZA E AMBIENTE

Prodotto : **AGIP GREASE MU EP 0** Pagina : 1/7

Codice prodotto : 4635 Versione : 2 Revisione : 03/08/2009
Sostituisce la scheda del : 21/01/2002

1. Identificazione della sostanza/preparato e della società

Identificazione della sostanza o del preparato:	AGIP GREASE MU EP 0
Tipo di prodotto ed utilizzo:	Grasso lubrificante
Identificazione della società:	ENI S.p.A. - Divisione Refining & Marketing
Indirizzo e numero telefonico:	Via Laurentina, 449 - 00142 ROMA ITALIA TEL. (+ 39) 06-59881 FAX (+ 39) 06-59885700
Indirizzo e-mail di contatto:	Persona competente responsabile della scheda di dati di sicurezza (Reg. CE no. 1907/2006): qualt-t@eni.it
Legislazione di riferimento	Questa scheda di sicurezza risponde alle prescrizioni in vigore nei paesi della Unione Europea. Non include informazioni specifiche per altri paesi.

2. Identificazione dei pericoli.

0 - Informazioni generali:	
Classificazione del prodotto:	Il prodotto non è classificato come pericoloso secondo i criteri fissati dall'Unione Europea.
1 - Pericoli fisico-chimici:	
Pericoli principali	Prodotto con rischio di incendio basso. Può formare miscele infiammabili o bruciare solo se riscaldato a temperature che sono più elevate delle normali temperature ambiente.
2 - Pericoli per la salute:	
Contatto con la pelle:	Il contatto ripetuto e prolungato, se accompagnato da scarsa igiene personale, può causare arrossamenti della pelle, irritazioni e dermatiti da contatto per effetto sgrassante.
Contatto con gli occhi:	Il contatto con gli occhi può causare arrossamenti e irritazioni.
Ingestione:	L'ingestione accidentale di piccole quantità può causare nausea, malessere e disturbi gastrici. Date le caratteristiche organolettiche del prodotto, l'ingestione di grandi quantità è comunque da considerare improbabile.
Inalazione:	Non applicabile
Aspirazione di prodotto nei polmoni:	L'aspirazione di sostanze estranee nei polmoni può causare irritazione e infiammazione (polmonite chimica). Date la composizione del prodotto, questo rischio è da considerare improbabile.
Altre informazioni:	Qualunque sostanza, nel caso di incidenti con tubazioni in pressione e simili, può essere accidentalmente iniettata nei tessuti sottocutanei, anche senza lesioni esterne apparenti. In tal caso è necessario condurre al più presto l'infortunato in ospedale per le cure del caso.

SCHEDA DATI SICUREZZA E AMBIENTE

3 - Pericoli ambientali:

Pericoli principali	Il prodotto non è classificato come pericoloso per l'ambiente secondo i criteri fissati dalla UE.

3. Composizione/informazione sugli ingredienti.

Componenti:	Olio minerale a base paraffinica severamente raffinato al solvente (65 % p min.) - CAS 101316-72-7 / EINECS 309-874-0 Olio minerale a base naftenica severamente idrotrattato (28 % p min.) - CAS 64742-52-5 Saponi di litio da sostanze naturali Additivi
Componenti pericolosi:	Nessuno da evidenziare, secondo le disposizioni di legge.
Altre informazioni:	Tutti gli oli base minerali contenuti in questo prodotto hanno un valore < 3 % p di estratto al DMSO secondo IP 346/92 (nota L - dir 94/69/CE)

4. Misure di pronto soccorso.

Contatto con la pelle:	Togliere abiti e calzature contaminate. Lavare la pelle con acqua e sapone. Nel caso di persistenza dell'infiammazione o dell'irritazione, ricorrere alle cure mediche.
Contatto con gli occhi:	Risciaquare a fondo per almeno 10 minuti. Tenere le palpebre ben aperte. Nel caso di persistenza dell'irritazione, ricorrere alle cure mediche.
Ingestione:	Non provocare il vomito onde evitare aspirazione di prodotto nei polmoni. Se la persona è cosciente, far sciacquare la bocca con acqua senza deglutire. Tenere a riposo. Chiamare un medico o portare in ospedale.
Inalazione:	In caso di malessere per una esposizione ad elevata concentrazione di vapori o nebbie, trasportare il soggetto in atmosfera non inquinata. Tenere a riposo. Se necessario chiamare un medico.
Aspirazione di prodotto nei polmoni:	Se si suppone che si sia verificata aspirazione di prodotto liquido nei polmoni (p.e. in caso di vomito spontaneo o erroneamente provocato), trasportare l'infortunato d'urgenza in ospedale.

5. Misure antincendio.

Indicazioni generali:	Se possibile, bloccare le fughe di prodotto all'origine. Se possibile, spostare i contenitori o fusti del prodotto dall'area di pericolo.
Mezzi di estinzione:	
- Appropriati:	Incendi di piccole dimensioni: anidride carbonica, polvere, schiuma, sabbia o terra. Incendi di grandi dimensioni: schiuma o acqua nebulizzata. Questi mezzi devono essere utilizzati solo da personale adeguatamente addestrato.
- Non devono essere usati:	Non utilizzare getti diretti d'acqua. Questi possono causare schizzi, e estendere l'incendio.
Equipaggiamento speciale per gli addetti antincendio:	Mezzi di protezione personale. Autorespiratore (Se necessario, per le caratteristiche fare riferimento al DM 02/05/2001)

SCHEDA DATI SICUREZZA E AMBIENTE

Consigli utili:	Evitare schizzi accidentali di prodotto su superfici metalliche calde o su contatti elettrici. In caso di fughe di prodotto da circuiti in pressione sotto forma di schizzi finemente polverizzati, tenere presente che il limite inferiore d'infiammabilità delle nebbie è di circa 45 g/m³ d'aria.
Altre indicazioni:	Usare getti d'acqua per raffreddare le superfici e contenitori esposti alle fiamme o al calore. Coprire gli eventuali spandimenti che non hanno preso fuoco con schiuma o terra. In caso di incendio, non disperdere le acque di scarico, ma raccoglierle separatamente e trattarle opportunamente

6. Misure in caso di rilascio accidentale.

Indicazioni generali:	Bloccare lo spandimento all'origine, se è possibile farlo senza rischio. Eliminare le fonti di accensione. Evitare che il prodotto defluisca nelle fogne o corsi d'acqua. Evitare che si accumuli in spazi confinati o sotto il livello del suolo. Avvertire le autorità competenti in accordo alle norme vigenti.
Precauzioni individuali:	Vedi il punto 8 della scheda.
Metodi di intervento:	
- Terreno:	Recuperare il prodotto versato con mezzi meccanici. Raccogliere il prodotto e il materiale di risulta in contenitori impermeabili. Avviare a recupero o smaltimento in accordo con la normativa.
- Acqua:	Limitare lo spandimento. Recuperare il prodotto versato con mezzi meccanici. Raccogliere il prodotto e il materiale di risulta in contenitori impermeabili. Avviare a recupero o smaltimento in accordo con la normativa Non utilizzare solventi o disperdenti.

7. Manipolazione e immagazzinamento.

Condizioni di stoccaggio:	Non stoccare vicino a fonti di d'ignizione o superfici calde. Temperatura di stoccaggio: ambiente fino a 55 °C. Conservare in un luogo ben ventilato.
Manipolazione:	Operare in luoghi ben ventilati, e comunque nel rispetto della normativa relativa alla prevenzione incendi. Evitare la vicinanza di superfici calde, di fiamme o scintille. Evitare il contatto con la pelle Evitare di respirare vapori o nebbie. Non fumare. Non forare, tagliare, smerigliare, saldare, brasare, bruciare o incenerire i contenitori o i fusti vuoti non bonificati.

8. Controllo dell'esposizione/protezione personale.

Indicazioni generali:	Il prodotto ha una tensione di vapore bassa e in condizioni normali a temperatura ambiente la concentrazione in aria è trascurabile. Una concentrazione significativa si può creare solo con l'uso a temperature elevate, oppure per operazioni che provocano spruzzi o nebbie. Evitare l'uso eccessivo o improprio del prodotto. Evitare la formazione di nebbie o vapori.

SCHEDA DATI SICUREZZA E AMBIENTE

8.1 Valori limite di esposizione

Valori limite di esposizione:	Per il controllo dell'esposizione al prodotto, si riportano i limiti di esposizione più significativi. TLV-TWA (A.C.G.I.H. 2008): 5 mg/m³ (nebbie d'olio minerale) TLV-STEL (A.C.G.I.H. 2008): 10 mg/m³ (nebbie d'olio minerale) Se necessario, fare riferimento ai limiti elencati nel D.Lgs 81/2008, nei contratti di lavoro, o nella documentazione ACGIH.
Procedure di monitoraggio:	Fare riferimento al D.Lgs 81/2008 e alle buone pratiche di igiene industriale.

8.2 Controllo dell'esposizione

Avvertenza generale:	Qualora la concentrazione del prodotto o di suoi costituenti sia superiore ai limiti esposizione, e se gli impianti, le modalità operative ed altri mezzi per ridurre l'esposizione dei lavoratori non risultassero adeguate allo scopo, è necessario adottare mezzi di protezione personale
Protezione respiratoria:	In ambienti ventilati o all'aperto: nessuno In ambienti confinati (p.e. interno serbatoi): apparecchi respiratori. Per le caratteristiche, fare riferimento al DM 02/05/2001
Protezione mani/occhi/pelle:	Abiti da lavoro con maniche lunghe. Nel caso, fare riferimento alle norme UNI EN 465-466-467. In caso di possibilità di contatto con gli occhi, usare occhiali di sicurezza o altri mezzi di protezione. Nel caso, fare riferimento alla norma UNI EN 166. In caso di possibilità di contatto con la pelle, usare guanti resistenti agli idrocarburi, felpati internamente. L'esperienza mostra che guanti di Nitrile o PVA (Polivinilalcool) sono adeguati per questo scopo. Guanti di PVC possono esser utilizzati per periodi di tempo limitato. Guanti di neoprene o gomma naturale (latex) non hanno caratteristiche adeguate di resistenza. Usare i guanti nel rispetto delle condizioni e dei limiti fissati dal fabbricante. Sostituire immediatamente i guanti se mostrano tagli, fori o altri segni di degrado. Nel caso, fare riferimento alla norma UNI EN 374.
8.3 Misure d'igiene:	Evitare il contatto con la pelle e gli occhi Evitare di respirare vapori o nebbie. Non asciugarsi le mani con stracci sporchi o unti. Non tenere stracci sporchi nelle tasche. Non mangiare, bere o fumare con le mani sporche Lavarsi con acqua e sapone; non utilizzare prodotti irritanti o solventi che asportano il rivestimento sebaceo della pelle. Non riutilizzare gli indumenti ancora contaminati.

9. Proprietà fisiche e chimiche (valori tipici).

Aspetto:	Pomatoso
Odore:	Caratteristico.
Colore	Giallo-marrone.
Punto goccia:	180 °C (ASTM D 566)
Densità a 15°C:	N.D. (ASTM D 70)
Tensione di vapore:	1·10-3 hPa (20 °C)
Viscosità a 40°C:	N.A. (ASTM D 445).
Solubilità in acqua:	Non solubile.

SCHEDA DATI SICUREZZA E AMBIENTE

pH :	Non applicabile (ASTM D 1287)
Punto di scorrimento:	Non applicabile.
Punto di infiammabilità :	> 180 °C (ASTM D 92)
Temperatura di autoaccensione:	> 300 °C (DIN 51794)
Limiti di esplosività:	
- Inferiore:	Non determinato.
- Superiore:	Non determinato.
Coefficiente di ripartizione (n-ottanolo/acqua):	Non determinato.
Estratto al DMSO dell'olio base:	< 3 % p (IP 346/92)

10. Stabilità e reattività.

Decomposizione per incendio:	COx, HC, SOx, NOx.
Stabilità:	Prodotto stabile.
Reazioni pericolose:	Non avvengono
Sostanze incompatibili:	Agenti ossidanti

11. Informazioni tossicologiche.

Tossicità orale (ratto):	LD50 superiore a 2000 mg/kg (stimata sulla base dei componenti)
Tossicità cutanea (coniglio):	LD50 superiore a 2000 mg/kg (stimata sulla base dei componenti)
Tossicità inalatoria (ratto):	Non applicabile
Sensibilizzazione della pelle:	Questo prodotto non contiene quantità significative di sostanze classificate dall'Unione Europea come sensibilizzanti (in ogni caso, < 0.1 % p) Il prodotto non è classificato come sensibilizzante secondo i criteri fissati dall'Unione Europea.
Altre informazioni:	* Non irritante per la pelle e per gli occhi * Contatti frequenti e prolungati, soprattutto se accompagnati da scarsa igiene personale, possono provocare fenomeni di irritazione cutanea. * Nessuno dei componenti di questo prodotto è riportato nelle liste dei cancerogeni IARC, OSHA, NTP, UE o altri.

12. Informazioni ecologiche.

Indicazioni generali:	Utilizzare secondo la buona pratica lavorativa, evitando di disperdere il prodotto nell'ambiente
Biodegradabilità:	I costituenti principali del prodotto sono da considerare "inerentemente" biodegradabili, ma non "prontamente" biodegradabili: pertanto possono risultare moderatamente persistenti, particolarmente in condizioni anaerobiche.
Tossicità per gli organismi acquatici:	Il prodotto non è solubile in acqua. Galleggia e forma un film sulla superficie. Il danno per gli organismi acquatici è di tipo meccanico (immobilizzazione e intrappolamento). Non sono disponibili dati specifici di ecotossicità. Sulla base della composizione e per analogia con prodotti dello stesso tipo, è prevedibile che questo prodotto abbia una tossicità per gli organismi acquatici maggiore di 100 mg/l, e non sia da considerare come pericoloso per l'ambiente.

SCHEDA DATI SICUREZZA E AMBIENTE

Altri dati:	Questo prodotto non ha caratteristiche specifiche di inibizione delle culture batteriche. In ogni caso le acque contaminate dal prodotto devono essere trattate in impianti di depurazione adeguati allo scopo.
Classe WGK (Germania):	1

13. Considerazioni sullo smaltimento.

Smaltimento del prodotto:	Non scaricare il prodotto, sia nuovo che usato, in fognature, cunicoli o corsi d'acqua. Raccogliere e consegnare ai raccoglitori autorizzati (DLgs 152/2006 e norm. collegata)
Codice Catalogo Europeo dei Rifiuti:	12 01 12 (Ref: Dir. 2001/118/CE e Dir. Min. Ambiente 9/04/2002) Il codice indicato è solo una indicazione generale, basata sulla composizione originale del prodotto e sull'uso previsto. L'utilizzatore ha la responsabilità finale di scegliere il codice più adeguato, sulla base dell'uso effettivo del prodotto, eventuali alterazioni o contaminazioni.
Smaltimento dei contenitori:	Non disperdere i contenitori nell'ambiente. Smaltire secondo le norme vigenti locali. Non forare, tagliare, smerigliare, saldare, brasare, bruciare o incenerire i contenitori o i fusti vuoti non bonificati.

14. Informazioni sul trasporto.

Etichettatura per il trasporto	Non applicabile.
Denominazione per il trasporto :	Non applicabile.
Numero ONU:	Non applicabile.
RID/ADR:	Non rientra in nessuna classe di pericolo
ICAO/IATA:	Non rientra in nessuna classe di pericolo
IMO-IMDG:	Non rientra in nessuna classe di pericolo

15. Informazioni sulla regolamentazione.

Etichettatura UE:	Non classificato secondo questa legislazione.
Leggi di riferimento:	D. Min. Salute 14/06/2002 e 28/02/2006, D.Lgs n° 65 14/03/03, e normativa nazionale collegata, relativi alla classificazione, imballaggio ed etichettatura delle sostanze e preparati pericolosi. DPR 336/94: "Nuova tabella delle malattie professionali nell'industria" D.Lgs 81/2008, relativo all' "Attuazione dell'art. 1 della legge 3 Agosto 2007, in materia di tutela della salute e sicurezza nei luoghi di lavoro." D.Lgs. 95/92 : "Attuazione delle direttive 75/439/CEE e 87/101/CEE relative alla eliminazione degli oli usati" D.Lgs 162/95 : " Disposizioni in materia di riutilizzo dei residui derivanti da cicli di produzione o consumo." D.Lgs 152/99 : "Testo unico sulle acque"

16. Altre informazioni.

Indicazioni generali:	Evitare l'uso eccessivo o improprio del prodotto.
Altri usi del prodotto:	Non utilizzare il prodotto per scopi diversi da quelli indicati. In tale caso l'utilizzatore può essere esposto a pericoli non prevedibili.
Riferimenti del documento:	Scheda conforme alle disposizioni del Regolamento (CE) n. 1907/2006 (REACH).

SCHEDA DATI SICUREZZA E AMBIENTE

Prodotto : **AGIP GREASE MU EP 0** Pagina : 7/7

Codice prodotto : 4635 Versione : 2 Revisione : 03/08/2009

Sostituisce la scheda del : 21/01/2002

Testo delle frasi R:	Testo completo delle frasi R citate in questa scheda. Queste frasi sono riportate a scopo informativo e NON CORRISPONDONO necessariamente alla classificazione del prodotto. Nessuno.
Tipo di revisione:	Modifica secondo il Regolamento (CE) no. 1907/2006. Correzione nella sezione: 1, 2, 3, 4, 5, 6, 8, 11, 12, 14, 15, 16.

Le informazioni qui contenute si riferiscono soltanto al prodotto indicato e possono non valere se il prodotto viene usato in combinazione con altri od in lavorazione. Tali informazioni sono al meglio di quanto in nostro possesso alla data di stampa della presente scheda.

Questa Scheda di Sicurezza è stata verificata e stampata il giorno 03/08/2009.

Fine documento. **Numero di pagine : 7**

W4.3 AGIP - OBI 12

(agip_obi-12_rel.1.05-2006)

Eni S.p.A.
Divisione Refining & Marketing
Via Laurentina 449, 00142 Roma
Tel. centralino +39 06 5988.1
www.eni.it

Eni

SCHEDA DATI SICUREZZA E AMBIENTE

Prodotto : **AGIP OBI 12** Pagina : 1/6

Codice prodotto : 4510 Versione : 1.05 Revisione : 11/10/2006
Sostituisce la scheda del : 09/05/1997

1. Identificazione della sostanza/preparato e della società

Identificazione della sostanza o del preparato:	AGIP OBI 12
Tipo di prodotto ed utilizzo:	Olio bianco
Identificazione della società:	ENI S.p.A. - Divisione Refining & Marketing
Indirizzo e numero telefonico:	Via Laurentina, 449 - 00142 ROMA ITALIA TEL. (+ 39) 06-59881 FAX (+ 39) 06-59885700

2. Composizione/informazioni sugli ingredienti.

Componenti:	Olio bianco minerale
Componenti pericolosi:	Nessuno.

3. Identificazione dei pericoli.

3.0 Informazioni generali:	
Classificazione del prodotto:	Il prodotto non è classificato come pericoloso secondo i criteri fissati dall'Unione Europea.
3.1 Pericoli fisico-chimici:	
Pericoli principali	Prodotto con rischio di incendio basso. Può formare miscele infiammabili o bruciare solo se riscaldato a temperature superiori al punto di infiammabilità.
3.2 Pericoli per la salute:	
Contatto con la pelle:	Il contatto ripetuto e prolungato può causare arrossamenti della pelle, irritazioni e dermatiti da contatto per effetto sgrassante.
Contatto con gli occhi:	Il contatto con gli occhi può causare arrossamenti e irritazioni.
Ingestione:	L'ingestione accidentale di piccole quantità può causare nausea, malessere e disturbi gastrici. Date le caratteristiche organolettiche del prodotto, l'ingestione di grandi quantità è comunque da considerare improbabile.
Inalazione:	Il prodotto ha una tensione di vapore bassa. Solo in casi particolari (uso a temperature elevate, oppure per operazioni che provocano spruzzi o nebbie), l'esposizione ad alte concentrazioni di vapori, può provocare irritazione alle vie respiratorie e malessere.
Aspirazione di prodotto nei polmoni:	L'aspirazione delle sostanze petrolifere nei polmoni può causare una polmonite chimica. Date le caratteristiche del prodotto, questo rischio è considerato improbabile.
Altre informazioni:	Qualunque sostanza, nel caso di incidenti con tubazioni in pressione e simili, può essere accidentalmente iniettata nei tessuti sottocutanei, anche senza lesioni esterne apparenti. In tal caso è necessario condurre al più presto l'infortunato in ospedale per le cure del caso.

ENI S.p.A. - Refining & Marketing Division

SCHEDA DATI SICUREZZA E AMBIENTE

3.3 Pericoli ambientali:

Pericoli principali	Il prodotto non è classificato come pericoloso per l'ambiente secondo i criteri fissati dalla UE.

4. Misure di primo soccorso.

Contatto con la pelle:	Togliere abiti e calzature contaminate. Lavare la pelle con acqua e sapone.
Contatto con gli occhi:	Irrigare abbondantemente con acqua per alcuni minuti; se persiste irritazione consultare uno specialista.
Ingestione:	Non provocare il vomito onde evitare aspirazione di prodotto nei polmoni; chiamare un medico.
Inalazione:	In caso di malessere per una esposizione ad elevata concentrazione di vapori o nebbie, trasportare il soggetto in atmosfera non inquinata. Tenere a riposo. Se necessario chiamare un medico.
Aspirazione di prodotto nei polmoni:	Se si suppone che si sia verificata aspirazione di prodotto liquido nei polmoni (p.e. in caso di vomito spontaneo o erroneamente provocato), trasportare l'infortunato d'urgenza in ospedale.

5. Misure antincendio.

Indicazioni generali:	Se possibile, bloccare le fughe di prodotto all'origine. Se possibile, spostare i contenitori o fusti del prodotto dall'area di pericolo.
Mezzi di estinzione:	
- Appropriati:	Incendi di piccole dimensioni: anidride carbonica, polvere, schiuma, sabbia o terra. Incendi di grandi dimensioni: schiuma o acqua nebulizzata. Questi mezzi devono essere utilizzati solo da personale adeguatamente addestrato.
- Non devono essere usati:	Non utilizzare getti diretti d'acqua. Questi possono causare schizzi, e estendere l'incendio.
Equipaggiamento speciale per gli addetti antincendio:	Mezzi di protezione personale. Autorespiratore (Se necessario, per le caratteristiche fare riferimento al DM 02/05/2001)
Consigli utili:	Evitare, mediante appropriati dispositivi, schizzi accidentali d'olio (es. per rottura di giunti) su superfici metalliche calde o su contatti elettrici (interruttori, prese, ecc.). In caso di fughe d'olio da circuiti in pressione sotto forma di schizzi finemente polverizzati, tenere presente che il limite inferiore d'infiammabilità delle nebbie d'olio è di circa 45 g d'olio per m³ d'aria.
Altre indicazioni:	Coprire gli eventuali spandimenti che non hanno preso fuoco con schiuma o terra. Usare getti d'acqua per raffreddare le superfici e contenitori esposti alle fiamme o al calore. In caso di incendio, non disperdere le acque di scarico, ma raccoglierle separatamente e trattarle opportunamente

6. Misure in caso di fuoriuscita accidentale.

Indicazioni generali:	Bloccare lo spandimento all'origine, se è possibile farlo senza rischio. Evitare che il prodotto defluisca nelle fogne o corsi d'acqua.

SCHEDA DATI SICUREZZA E AMBIENTE

Precauzioni individuali:	Vedi il punto 8 della scheda.
Metodi di intervento:	
- Terreno:	Contenere e assorbire il prodotto con terra, sabbia o altro mezzo assorbente. Raccogliere il prodotto e il materiale di risulta in contenitori impermeabili e resistenti agli idrocarburi. Avviare a recupero o smaltimento in accordo con la normativa vigente.
- Acqua:	Asportare dalla superficie il prodotto versato con mezzi meccanici o con opportuni mezzi assorbenti. Raccogliere il prodotto e il materiale di risulta in contenitori impermeabili e resistenti agli idrocarburi. Avviare a recupero o smaltimento in accordo con la normativa Non utilizzare solventi o disperdenti.

7. Manipolazione e stoccaggio.

Condizioni di stoccaggio:	Temperatura di stoccaggio: ambiente fino a 50°C
Manipolazione:	Operare in luoghi ben ventilati, e comunque nel rispetto della normativa relativa alla prevenzione incendi. Non stoccare vicino a fonti di d'ignizione o superfici calde. Evitare la vicinanza di superfici calde, di fiamme o scintille. Evitare il contatto con la pelle Evitare di respirare vapori o nebbie. Non forare, tagliare, smerigliare, saldare, brasare, bruciare o incenerire i contenitori o i fusti vuoti non bonificati.

8. Controllo dell'esposizione/protezione individuale.

Indicazioni generali:	Evitare la formazione di nebbie o vapori.
8.1 Valori limite di esposizione	
Valori limite di esposizione:	Per il controllo dell'esposizione al prodotto, si riportano i limiti di esposizione più significativi. TLV-TWA (A.C.G.I.H. 2006): 5 mg/m³ (nebbie d'olio minerale) TLV-STEL (A.C.G.I.H. 2006): 10 mg/m³ (nebbie d'olio minerale) Se necessario, fare riferimento ai limiti elencati nel D. Min. 26/02/2004, nei contratti di lavoro, o nella documentazione ACGIH.
Procedure di monitoraggio:	Fare riferimento al D. Lgs. 25/2002 e alle buone pratiche di igiene industriale.
8.2 Controllo dell'esposizione	
Avvertenza generale:	Qualora la concentrazione del prodotto o di suoi costituenti sia superiore ai limiti esposizione, e se gli impianti, le modalità operative ed altri mezzi per ridurre l'esposizione dei lavoratori non risultassero adeguate allo scopo, è necessario adottare mezzi di protezione personale
Protezione respiratoria:	In ambienti ventilati o all'aperto: nessuno In ambienti confinati (p.e. interno serbatoi): apparecchi respiratori. Per le caratteristiche, fare riferimento al DM 02/05/2001
Protezione mani/occhi/pelle:	Abiti da lavoro con maniche lunghe. Nel caso, fare riferimento alle norme UNI EN 465-466-467. In caso di possibilità di contatto con gli occhi, usare occhiali di sicurezza o altri mezzi di protezione. Nel caso, fare riferimento alla norma UNI EN 166. L'esperienza mostra che guanti di Nitrile o PVA (Polivinilalcool) sono adeguati per questo scopo. Guanti di PVC possono esser utilizzati per periodi di tempo limitato.

SCHEDA DATI SICUREZZA E AMBIENTE

	Guanti di neoprene o gomma naturale (latex) non hanno caratteristiche adeguate di resistenza. Usare i guanti nel rispetto delle condizioni e dei limiti fissati dal fabbricante. Sostituire immediatamente i guanti se mostrano tagli, fori o altri segni di degrado. Nel caso, fare riferimento alla norma UNI EN 374.
8.3 Misure d'igiene:	Evitare il contatto con la pelle e gli occhi Evitare di respirare vapori o nebbie. Non asciugarsi le mani con stracci sporchi o unti. Non tenere stracci sporchi nelle tasche. Non mangiare, bere o fumare con le mani sporche Lavarsi con acqua e sapone; non utilizzare prodotti irritanti o solventi che asportano il rivestimento sebaceo della pelle. Non riutilizzare gli indumenti ancora contaminati.

9. Proprietà fisiche e chimiche (valori tipici).

Aspetto:	Liquido limpido (ASTM D 4176/1).
Odore:	Inodore.
Colore	+30 (ASTM D 156)
Densità a 15°C:	850 kg/m³ (ASTM D 1298).
Punto/intervallo di ebollizione:	> 200 °C a 10 mmHg (ASTM D 1160)
Tensione di vapore:	1·10-3 hPa (20 °C)
Viscosità a 40°C:	14.7 mm²/s (ASTM D 445).
Solubilità in acqua:	Non solubile.
pH :	Non applicabile (ASTM D 1287)
Punto di scorrimento:	-7 °C. (ASTM D 97)
Punto di infiammabilità :	200 °C. (ASTM D 92)
Temperatura di autoaccensione:	> 300 °C (DIN 51794)
Limiti di esplosività:	
- Inferiore:	Non determinato.
- Superiore:	Non determinato.
Coefficiente di ripartizione (n-ottanolo/acqua):	Non determinato.
Estratto al DMSO dell'olio base:	< 3 % p (IP 346/92)

10. Stabilità e reattività.

Decomposizione per incendio:	COx, HC
Stabilità:	Prodotto stabile.
Reazioni pericolose:	Non avvengono
Sostanze incompatibili:	Agenti ossidanti

11. Informazioni tossicologiche.

Tossicità orale (ratto):	LD50 superiore a 5000 mg/kg .
Tossicità cutanea (coniglio):	LD50 superiore a 5000 mg/kg

SCHEDA DATI SICUREZZA E AMBIENTE

Tossicità inalatoria (ratto):	LC50 superiore a 5 mg/l/4h
Sensibilizzazione della pelle:	Il prodotto non è classificato come sensibilizzante secondo i criteri fissati dall'Unione Europea.
Altre informazioni:	* Non irritante per la pelle e per gli occhi * Contatti frequenti e prolungati, soprattutto se accompagnati da scarsa igiene personale, possono provocare fenomeni di irritazione cutanea. * Nessuno dei componenti di questo prodotto è riportato nelle liste dei cancerogeni IARC, OSHA, NTP, UE o altri. * Nessuno dei componenti di questo prodotto è riportato nella lista delle sostanze pericolose allegata al Decreto Ministero Sanità del 11 Aprile 2001.

12. Informazioni ecologiche.

Indicazioni generali:	Utilizzare secondo la buona pratica lavorativa, evitando di disperdere il prodotto nell'ambiente
Biodegradabilità:	I costituenti principali del prodotto sono da considerare "inerentemente" biodegradabili, ma non "prontamente" biodegradabili: pertanto possono risultare moderatamente persistenti, particolarmente in condizioni anaerobiche.
Tossicità per gli organismi acquatici:	Il prodotto non è solubile in acqua. Galleggia e forma un film sulla superficie. Il danno per gli organismi acquatici è di tipo meccanico (immobilizzazione e intrappolamento). Non sono disponibili dati specifici di ecotossicità. Sulla base della composizione e per analogia con prodotti dello stesso tipo, è prevedibile che questo prodotto abbia una tossicità per gli organismi acquatici maggiore di 100 mg/l, e non sia da considerare come pericoloso per l'ambiente.
Altri dati:	Questo prodotto non ha caratteristiche specifiche di inibizione delle culture batteriche. In ogni caso le acque contaminate dal prodotto devono essere trattate in impianti di depurazione adeguati allo scopo.
Classe WGK (Germania):	1.

13. Considerazioni sullo smaltimento.

Smaltimento del prodotto:	Non scaricare il prodotto, sia nuovo che usato, in fognature, cunicoli o corsi d'acqua. Raccogliere e consegnare ai raccoglitori autorizzati (DLgs 22/97 e norm. collegata)
Codice Catalogo Europeo dei Rifiuti:	13 08 99 (Ref: Dir. Min. Ambiente 9/04/2002) Il codice indicato è solo una indicazione generale, basata sulla composizione originale del prodotto e sull'uso previsto. L'utilizzatore ha la responsabilità finale di scegliere il codice più adeguato, sulla base dell'uso effettivo del prodotto, eventuali alterazioni o contaminazioni.
Smaltimento dei contenitori:	Non disperdere i contenitori nell'ambiente. Smaltire secondo le norme vigenti locali. Non forare, tagliare, smerigliare, saldare, brasare, bruciare o incenerire i contenitori o i fusti vuoti non bonificati.

14. Informazioni sul trasporto.

Etichettatura per il trasporto	Nessuna.
Numero ONU:	Non applicabile.
RID/ADR:	Non rientra in nessuna classe di pericolo
ICAO/IATA:	Non rientra in nessuna classe di pericolo

SCHEDA DATI SICUREZZA E AMBIENTE

Prodotto : **AGIP OBI 12** Pagina : 6/6

Codice prodotto : 4510 Versione : 1.05 Revisione : 11/10/2006

Sostituisce la scheda del : 09/05/1997

IMO-IMDG: Non rientra in nessuna classe di pericolo

15. Informazioni sulla regolamentazione.

Etichettatura UE: Non classificato secondo questa legislazione.

Leggi di riferimento: D. Min. Salute 14/06/2002 e 28/02/2006, D.Lgs n° 65 14/03/03, e normativa nazionale collegata, relativi alla classificazione, imballaggio ed etichettatura delle sostanze e preparati pericolosi.
DPR 303/56 : " Norme generali per l'igiene del lavoro "
DPR 547/55 : " Norme per la prevenzione degli infortuni sul lavoro "
DPR 336/94 : " Nuova tabella delle malattie professionali nell'industria " voce 41
D.Lgs 626/94, 242/96 e 25/02 : " Attuazione delle Direttive 89/391/CEE, 89/654/CEE, 89/655/CEE, 89/656/CEE, 90/269/CEE, 90/270/CEE, 90/394/CEE, 90/679/CEE, 93/88/CEE, 95/63/CE, 97/42/CE, 98/24/CE, 99/38/CE riguardanti il miglioramento della sicurezza e della salute dei lavoratori sul luogo di lavoro."
Direttive 99/92/CE, 2001/45/CE, 2003/10/CE.
D.Lgs. 95/92 : "Attuazione delle direttive 75/439/CEE e 87/101/CEE relative alla eliminazione degli oli usati"
D.Lgs 162/95 : " Disposizioni in materia di riutilizzo dei residui derivanti da cicli di produzione o consumo."
D.Lgs 152/99 : "Testo unico sulle acque"

16. Altre informazioni.

Indicazioni generali: Evitare l'uso eccessivo o improprio del prodotto.

Altri usi del prodotto: Non utilizzare il prodotto per scopi diversi da quelli indicati. In tale caso l'utilizzatore può essere esposto a pericoli non prevedibili.

Riferimenti del documento: Scheda conforme alle disposizioni del Decreto Min. Salute 7/09/2002 (Dir. 2001/58/CE)

Testo delle frasi R: Nessuno.

Tipo di revisione: Modifica alle nuove direttive: 2001/58/CE.

Le informazioni qui contenute si riferiscono soltanto al prodotto indicato e possono non valere se il prodotto viene usato in combinazione con altri od in lavorazione. Tali informazioni sono al meglio di quanto in nostro possesso alla data di stampa della presente scheda.

Questa Scheda di Sicurezza è stata verificata e stampata il giorno 11/10/2006.

Fine documento. **Numero di pagine : 6**

ENI S.p.A. - Refining & Marketing Division

W4.8 CHEM TREND - LUSIN LUB PM 1001

(lusin_lub_pm_1001_rel.012010)

Chem Trend

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

1 Identificazione della sostanza/preparato e della società/impresa

· **Dati del prodotto**

· **Denominazione commerciale: LUSIN LUB PM 1001**
· **Utilizzazione della Sostanza / del Preparato** Spray lubrificante

· **Produttore/fornitore:**
Chem-Trend (Deutschland) GmbH
Ganghoferstr. 47
D-82216 Maisach-Gernlinden
Tel.: 0049 (0) 8142417-0
Fax.: 0049 (0) 814215884

· **Informazioni fornite da:**
Material Compliance Management (MCM)
mcm@chemtrend.de

· **Informazioni di primo soccorso:** 0049 (0) 8142417-1169

2 Identificazione dei pericoli

· **Classificazione di pericolosità:**

Xi Irritante
F+ Estremamente infiammabile
N Pericoloso per l'ambiente

· **Indicazioni di pericolosità specifiche per l'uomo e l'ambiente:**
Il prodotto ha l'obbligo di classificazione in base al metodo di calcolo della "direttiva generale della Comunità sulla classificazione dei preparati" nella sua ultima versione valida.
Attenzione! Recipiente sotto pressione.
R 12 Estremamente infiammabile.
R 38 Irritante per la pelle.
R 51/53 Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.
R 67 L'inalazione dei vapori può provocare sonnolenza e vertigini.
Recipiente sotto pressione. Proteggere contro i raggi solari e non esporre ad una temperatura superiore a 50 °C. Non perforare né bruciare neppure dopo l'uso.
Non vaporizzare su una fiamma o su un corpo incandescente.
Una insufficiente areazione del locale potrebbe dar luogo alla formazione di miscele esplosive.
· **Sistema di classificazione:**
La classificazione corrisponde alle attuali liste della CEE, è tuttavia integrata da dati raccolti da bibliografia specifica e da dati forniti dall'impresa.

3 Composizione/informazioni sugli ingredienti

· **Caratteristiche chimiche**
· **Descrizione:** Miscela attivante con gas propellente

· **Sostanze pericolose:**

CAS: 106-97-8 EINECS: 203-448-7	butano F+; R 12	50-100%
CAS: 64742-49-0 EINECS: 265-151-9	nafta (petrolio), frazione leggera di «hydrotreating» Xn, Xi, F, N; R 11-38-51/53-65-67	25-50%

(continua a pagina 2)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

Denominazione commerciale: LUSIN LUB PM 1001

(Segue da pagina 1)

CAS: 75-28-5 EINECS: 200-857-2	isobutano F+; R 12	2,5-10%
CAS: 74-98-6 EINECS: 200-827-9	propano F+; R 12	2,5-10%
CAS: 61791-53-5 EINECS: 263-186-4	N-Tallow-Alkyl-Trimethylene-Diamindioleate C, N; R 34-50	≤ 0,25%

· **Ulteriori indicazioni:**
ALLEGATO 1C "Nota P:
La classificazione "cancerogeno" o "mutageno" non è necessaria se si può dimostrare che la sostanza contiene benzene in percentuale inferiore allo 0,1 % di peso/peso (Einecs n. 200-753-7).
Il testo dell'avvertenza dei pericoli citati può essere appreso dal capitolo 16

4 Misure di pronto soccorso

· **Inalazione:** Portare in zona ben areata, in caso di disturbi consultare il medico.
· **Contatto con la pelle:** Lavare con sapone e molta acqua.
· **Contatto con gli occhi:**
Lavare con acqua corrente per diversi minuti tenendo le palpebre ben aperte Se persiste il dolore consultare il medico.
· **Indicazioni per il medico:**
· **Rimedi** Trattamento sintomatico.

5 Misure antincendio

· **Mezzi di estinzione idonei:**
CO2, polvere o acqua nebulizzata. Estinguere gli incendi di grosse dimensioni con acqua nebulizzata o con schiuma resistente all'alcool.
· **Mezzi di estinzione inadatti per motivi di sicurezza:** Getti d'acqua
· **Rischi specifici dovuti alla sostanza, ai suoi prodotti della combustione o ai gas liberati:**
Monossido di carbonio (CO)
Idrocarburi
· **Mezzi protettivi specifici:** Non inalare i gas derivanti da esplosioni e incendi.
· **Altre indicazioni** Raffreddare i contenitori a rischio con un getto d'acqua.

6 Misure in caso di rilascio accidentale

· **Misure cautelari rivolte alle persone:**
Garantire una ventilazione sufficiente.
Allontanare fonti infiammabili.
· **Misure di protezione ambientale:**
Impedire infiltrazioni nella fognatura/nelle acque superficiali/nelle acque freatiche.
· **Metodi di pulitura/assorbimento:**
Raccogliere con mezzi meccanici.
Smaltire il materiale raccolto come previsto dalla legge.

7 Manipolazione e immagazzinamento

· **Manipolazione:**
· **Indicazioni per una manipolazione sicura:** Accurata ventilazione/aspirazione nei luoghi di lavoro.
· **Indicazioni in caso di incendio ed esplosione:**
Tenere lontano da fonti di calore, non fumare.
Proteggere dal calore.
I vapori uniti all'aria possono formare una miscela esplosiva.

(continua a pagina 3)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

Denominazione commerciale: LUSIN LUB PM 1001

(Segue da pagina 2)

· **Stoccaggio:**
· **Requisiti dei magazzini e dei recipienti:**
Osservare le disposizioni amministrative relative allo stoccaggio di spray.
· **Indicazioni sullo stoccaggio misto:** Non conservare a contatto con ossidanti.
· **Ulteriori indicazioni relative alle condizioni di immagazzinamento:**
Proteggere dal calore e dai raggi diretti del sole.
Conservare in luogo fresco, il riscaldamento provoca aumenti di pressione e rischi di deflagrazioni pericolo.

8 Controllo dell'esposizione/protezione individuale

· **Ulteriori indicazioni sulla struttura di impianti tecnici:** Nessun dato ulteriore, vedere punto 7.

· **Componenti i cui valori limite devono essere tenuti sotto controllo negli ambienti di lavoro:**	
106-97-8 butano	
TWA ()	1000 ppm
75-28-5 isobutano	
TWA ()	1000 ppm
74-98-6 propano	
TWA ()	1000 ppm

· **Ulteriori indicazioni:** Le liste valide alla data di compilazione sono state usate come base.

· **Mezzi protettivi individuali:**
· **Norme generali protettive e di igiene del lavoro:**
Togliere immediatamente gli abiti contaminati.
Non inalare gas/vapori/aerosol.
Evitare contatti prolungati e intensi con la pelle.
Al termine del lavoro e prima delle pause pulire accuratamente la pelle.
Non fumare, nè mangiare nè bere durante il lavoro.
· **Maschera protettiva:** In ambienti non sufficientemente ventilati utilizzare la maschera protettiva.
· **Guanti protettivi:**


Guanti protettivi

· **Materiale dei guanti**
Gomma nitrilica
La scelta dei guanti adatti non dipende soltanto dal materiale bensì anche da altre caratteristiche di qualità variabili da un produttore a un altro.
· **Tempo di permeazione del materiale dei guanti**
Richiedere dal fornitore dei guanti il tempo di passaggio preciso il quale deve essere rispettato.
· **Occhiali protettivi:** Non necessario.

9 Proprietà fisiche e chimiche

· **Indicazioni generali**	
Forma:	Aerosol
Colore:	Incolore
Odore:	Specifico del prodotto
· **Cambiamento di stato**	
Temperatura di ebollizione/ambito di ebollizione:	< - 10°C
· **Punto di infiammabilità:**	~ - 80°C

(continua a pagina 4)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

Denominazione commerciale: LUSIN LUB PM 1001

(Segue da pagina 3)

· **Temperatura di accensione:**	> 350°C
· **Pericolo di esplosione:**	Prodotto non è esplosivo, è tuttavia possibile la formazione di miscele di vapori/aria esplosive.
· **Limiti di infiammabilità:**	
Inferiore:	1,8 Vol %
Superiore:	11,2 Vol %
· **Tensione di vapore a 20°C:**	> 1200 hPa
· **Densità a 20°C:**	~ 0,7 g/cm³
· **Solubilità in/Miscibilità con acqua:**	Insolubile.
· **Ulteriori dati:**	I dati/valori si riferiscono al gas propellente

10 Stabilità e reattività

· **Decomposizione termica/ condizioni da evitare:**
Il prodotto non si decompone se manipolato e immagazzinato secondo le norme.
· **Reazioni pericolose**
Reazioni con ossidanti.
Data l'elevata pressione del vapore in caso di aumento della temperatura esiste il pericolo di scoppio dei contenitori.
· **Prodotti di decomposizione pericolosi:** Monossido di carbonio

11 Informazioni tossicologiche

· **Tossicità acuta:**

· **Valori LD/LC50 rilevanti per la classificazione:**		
64742-49-0 nafta (petrolio), frazione leggera di «hydrotreating»		
Orale	LD50	> 2000 mg/kg (ratto)

· **Ulteriori dati tossicologici:**
Il prodotto, in base al metodo di calcolo della direttiva generale della Comunità sulla classificazione dei preparati nella sua ultima versione valida, presenta i seguenti rischi:
Irritante

12 Informazioni ecologiche

· **Effetti tossici per l'ambiente:**
· **Comportamento in impianti di depurazione:** Il prodotto può essere separato con mezzi meccanici.
· **Ulteriori indicazioni:**
nocivo per gli organismi acquatici
Non immettere nelle acque freatiche, nei corsi d'acqua o nelle fognature.
Le indicazioni sull'ecologia si riferiscono al sostanza attiva.

13 Considerazioni sullo smaltimento

· **Prodotto:**
· **Consigli:** Può/possono venire inceneriti quando la legislazione locale lo consente.
· **Codice rifiuti:**
Per questo prodotto non può essere stabilito alcun numero di codice rifiuto secondo il Catalogo dei Rifiuti europeo (EWC), poiché solo l'indicazione dell'impiego previsto per il prodotto da parte del consumatore consente un'attribuzione. Il numero di codice può essere stabilito solo sulla base di un accordo da prendersi

(continua a pagina 5)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

Denominazione commerciale: LUSIN LUB PM 1001

(Segue da pagina 4)

con l'ente regionale competente per lo smaltimento.

· **Imballaggi non puliti:**
· **Consigli:**
Gli imballaggi contaminati devono essere ben svuotati, possono essere poi riutilizzati dopo aver subito appropriato trattamento di pulitura.

14 Informazioni sul trasporto

· **Trasporto stradale/ferroviario ADR/RID (oltre confine):**

· **Classe ADR/RID-GGVS/E:** 2 5F Gas
· **Numero Kemler:** --
· **Numero ONU:** 1950
· **Gruppo di imballaggio:** -
· **Marcatura speciali:** Simbolo (pesce e albero)
· **Descrizione della merce:** 1950 AEROSOL

· **Trasporto marittimo IMDG:**

· **Classe IMDG:** 2.1
· **Numero ONU:** 1950
· **Label** 2.1
· **Gruppo di imballaggio:** -
· **Numero EMS:** F-D,S-U
· **Marine pollutant:** No
· **Denominazione tecnica esatta:** AEROSOLS

· **Trasporto aereo ICAO-TI e IATA-DGR:**

· **Classe ICAO/IATA:** 2.1
· **Numero ONU/ID:** 1950
· **Label** 2.1
· **Gruppo di imballaggio:** -
· **Denominazione tecnica esatta:** Aerosols, flammable

· **Pericoli per l'ambiente:** Il prodotto contiene materie pericolose per l'ambiente

15 Informazioni sulla regolamentazione

· **Classificazione secondo le direttive CEE:**
Il prodotto è classificato e codificato conformemente alle direttive CEE/norme sulle sostanze pericolose

(continua a pagina 6)

Scheda di dati di sicurezza
ai sensi del regolamento 1907/2006/CE, Articolo 31

Stampato il: 27.01.2010 Revisione: 27.01.2010

Denominazione commerciale: LUSIN LUB PM 1001

(Segue da pagina 5)

· **Sigla ed etichettatura di pericolosità del prodotto:**

Xi Irritante
F+ Estremamente infiammabile
N Pericoloso per l'ambiente

· **Natura dei rischi specifici (frasi R):**
12 Estremamente infiammabile.
38 Irritante per la pelle.
51/53 Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.
67 L'inalazione dei vapori può provocare sonnolenza e vertigini.

· **Consigli di prudenza (frasi S):**
2 Conservare fuori della portata dei bambini.
16 Conservare lontano da fiamme e scintille - Non fumare.
23 Non inalare aerosol.
24 Evitare il contatto con la pelle.
51 Usare soltanto in luogo ben ventilato.
61 Non disperdere nell'ambiente. Riferirsi alle istruzioni speciali/ schede informative in materia di sicurezza.

· **Classificazione specifica di determinati preparati:**
Codifica come aerosol conformemente a 2008/47/CE
Recipiente sotto pressione. Proteggere contro i raggi solari e non esporre ad una temperatura superiore a 50 °C. Non perforare né bruciare neppure dopo l'uso.
Non vaporizzare su una fiamma o su un corpo incandescente.
Una insufficiente areazione del locale potrebbe dar luogo alla formazione di miscele esplosive.

· **Disposizioni nazionali:**
· **Ulteriori disposizioni, limitazioni e decreti proibitivi**
Per ulteriori sostanze menzionate al punto 3 possono esserci dei valori limite nazionali; ciò è da controllare da parte dell'utente.

· **Sostanze estremamente preoccupanti (SVHC) ai sensi della regolamento REACH, articolo 57**
Nessuno dei componenti è contenuto.

16 Altre informazioni

I dati sono riportati sulla base delle nostre conoscenze attuali, non rappresentano tuttavia alcuna garanzia delle caratteristiche del prodotto e non motivano alcun rapporto giuridico contrattuale.

· **Frasi R rilevanti**
11 Facilmente infiammabile.
12 Estremamente infiammabile.
34 Provoca ustioni.
38 Irritante per la pelle.
50 Altamente tossico per gli organismi acquatici.
51/53 Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.
65 Nocivo: può causare danni ai polmoni in caso di ingestione.
67 L'inalazione dei vapori può provocare sonnolenza e vertigini.

· **Scheda rilasciata da:** Material Compliance Management (MCM)
· **Interlocutore:** Tel.: +49 (0) 8142417-1136

W4.9 CRC - TEFLUB

Material Safety Data Sheet Regolamento (CE) n.1907/2006 Art.31

Nome del prodotto :	TEFLUB	Data dell'emissione :	21.09.11 Version : 1.0
Ref.Nr. :	BDS000521_5_20110921	Sostituisce :	AB12560

SEZIONE 1: Identificazione della sostanza o della miscela e della società/impresa

1.1. Identificatore del prodotto

TEFLUB
Aerosol

1.2. Pertinenti usi identificati della sostanza o miscela e usi sconsigliati

Lubricants

1.3. Informazioni sul fornitore della scheda di dati di sicurezza

CRC Industries Europe bvba
Touwslagerstraat 1
9240 Zele
Belgium
Tel.: +32(0)52/45.60.11
Fax.: +32(0)52/45.00.34
E-mail : hse@crcind.com

Subsidiaries		Tel	Fax
CRC Industries Finland Oy	Asemanrinne 13, 08500 Lohja as.	00358(19)32.021	00358(19)383.676
CRC Industries France	ZI du Val d'Argent B.P. 90028, 12, Bld des Martyrs de Chateaubriant, 95102 Argenteuil Cedex	01.34.11.20.00	01.34.11.09.96
CRC Industries Deutschland GmbH	Südring 9, D-76473 Iffezheim	(07229) 309.0	(07229)30 32 66
CRC INDUSTRIES IBERIA S.L.U.	GREMIO DEL CUERO-PARC.96, POLIGONO INDUSTR. DE HONTORIA, 40195 SEGOVIA	0034/921.427.545	0034/921.436.270
CRC Industries Sweden	Kryptongatan 14, 431 53 Mölndal	0046/31 706 84 80	0046/31 27 39 91

1.4. Numero telefonico di emergenza

CRC Industries Europe, Belgium: Tel.: +32(0)52/45.60.11 (office hours)

SEZIONE 2: Identificazione dei pericoli

2.1. Classificazione della sostanza o della miscela

Classificazione conforme alla direttiva 67/548/CEE o 1999/45/CE:

OK	R38: Irritante per la pelle. R67: L'inalazione dei vapori può provocare sonnolenza e vertigini.
Dati fisici:	ESTREMAMENTE INFIAMMABILE
Ambiente :	R51/53: Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.

2.2. Elementi dell'etichetta

Indicazioni di rischio :	ESTREMAMENTE INFIAMMABILE  Xi : IRRITANTE

	 N : PERICOLOSO PER L'AMBIENTE 
Frasi di rischio (R) :	R38: Irritante per la pelle. R51/53: Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico. R67: L'inalazione dei vapori può provocare sonnolenza e vertigini.
Frasi di sicurezza (S) :	S2: Conservare fuori della portata dei bambini. S16: Conservare lontano da fiamme e scintille - Non fumare. S23: Non respirare i vapori/aerosoli. S35: Non disfarsi del prodotto e del recipiente se non con le dovute precauzioni. S51: Usare soltanto in luogo ben ventilato.
Elementi supplementari da indicare sull'etichetta conformemente alla direttiva sui generatori di aerosol 75/324/CE:	Recipiente sotto pressione. Proteggere contro i raggi solari e non esporre ad una temperatura superiore a 50°C. Non perforare né bruciare neppure dopo l'uso. Non vaporizzare su una fiamma o su un corpo incandescente. Senza ambiente sufficientemente ventilati è possibile la formazione delle miscele esplosive.
Altri elementi supplementari da indicare sull'etichetta:	I preparati classificati come nocivi per la loro pericolosità in caso di aspirazione non devono essere necessariamente classificati come nocivi e caratterizzati con la frase R65 sull'etichetta se sono immessi in commercio in bombolette aerosol o in recipienti muniti di un dispositivo sigillato di nebulizzazione. (si veda 9.4 dell'Annesso VI alle direttive 67/548/EC)

2.3. Altri pericoli

Nessuno

SEZIONE 3: Composizione/informazioni sugli ingredienti

3.1. Sostanze

Non pertinente.

3.2. Miscele

Componenti pericolosi	N° CAS	EC-nr	w/w %	simbolo	frase-R*	Note
idrocarburi,ricchi di C3-4, distillato di petrolio Gasdi petrolio	68512-91-4	270-990-9	30-60	F+	12	K
Hydrocarbons, C6-C7, n-alkanes,isoalkanes,cyclics,<5% n-hexane	-	921-024-6	30-60	F,Xn,N	11-38-51/53-65-67	
propan-2-olo; alcol isopropilico	67-63-0	200-661-7	1-5	F,Xi	11-36-67	B
Explanation notes						
B : sostanza per cui sussistono limiti nazionali all'esposizione sul luogo di lavoro						
K : la classificazione cancerogeno non è necessaria, la sostanza contiene 1,3-butadiene (Einecs n. 203-450-8) in percentuale inferiore allo 0,1 % di peso/peso						

Componenti pericolosi	numero di registrazione	N° CAS	EC-nr	w/w %	Classe e categoria di pericolo	Indicazione di pericolo	Note
Hydrocarbons, C6-C7, n-alkanes,isoalkanes,cyclics,<5% n-hexane	01-2119475514-35	-	921-024-6	30-60	Flam. Liq. 2,Skin Irrit. 2,STOT SE 3,Asp. Tox. 1,Aquatic Chronic 2	H225,H315,H336,H304,H411	
propan-2-olo; alcol isopropilico		67-63-0	200-661-7	1-5	Flam. Liq. 2,Eye Irrit. 2,STOT SE 3	H225,H319,H336	B
Explanation notes							
B : sostanza per cui sussistono limiti nazionali all'esposizione sul luogo di lavoro							

(* Termini esplicativi: si veda capitolo 16)

SEZIONE 4: Misure di primo soccorso

4.1. Descrizione delle misure di primo soccorso

Contatto con gli occhi :	Se la sostanza è entrata negli occhi, lavare immediatamente con acqua abbondante Ottenere il consiglio del medico
Contatto con la pelle :	Togliere immediatamente gli abiti contaminati ed inzuppare l'area +interessata della pelle con acqua abbondante. Lavare quindi con acqua e +sapone Ottenere il consiglio del medico
Inalazione :	Esporre all aria aperta, tenere al caldo e in riposo. Ottenere le cure del medico se si verificano effetti nocivi
Ingestione :	Improbabile che occorra l'ingestione In caso di ingestione non indurre il vomito a causa del rischio di aspirazione nei polmoni. Se si sospetta tale aspirazione si ottenere immediatamente l'intervento di un medico

4.2. Principali sintomi ed effetti, sia acuti e che ritardati

Inalazione :	L'inalazione dei vapori dei solventi può essere motivo di nausea, mal di testa e stordimento
Ingestione :	In caso di vomito, dopo aver inalato/ingerito accidentalmente il prodotto, è consigliabile respirare a pieni polmoni. I solventi possono indurre a polmonite chimica.

	Sintomi : gola irritata, dolore addominale , nausea, vomito
Contatto con la pelle :	Irritante per la pelle Sintomi : rossore e dolore
Contatto con gli occhi :	Può causare irritazione. Sintomi : rossore e dolore

4.3. Indicazione dell'eventuale necessità di consultare immediatamente un medico e trattamenti speciali

Norma generale :	In caso di malessere consultare il medico (se possibile, mostrargli l'etichette) Se i sintomi persistono consultare sempre un medico

SEZIONE 5: Misure antincendio

5.1. Mezzi di estinzione

schiuma, anidride carbonica o agente secco

5.2. Pericoli speciali derivanti dalla sostanza o dalla miscela

Gli aerosol possono esplodere se riscaldati a temperatura superiore a 50 °C
Forma prodotti pericolosi di decomposizione
CO,CO2

5.3. Raccomandazioni per gli addetti all'estinzione degli incendi

Tenere freddi i contenitori esposti al fuoco, spruzzandovi dell'acqua
In caso di incendio, non respirare i vapori

SEZIONE 6: Misure in caso di rilascio accidentale

6.1. Precauzioni personali, dispositivi di protezione e procedure in caso di emergenza

Chiudere tutte le sorgenti d'accensione
Assicurarsi che ci sia ventilazione adeguata
Usare indumenti protettivi a guanti adatti.

6.2. Precauzioni ambientali

Non permettere l'ingresso nelle fogne pubbliche e nei corsi d'acqua

6.3. Metodi e materiali per il contenimento e per la bonifica

Assorbire quanto versato con sostanze inerti adatte

6.4. Riferimento ad altre sezioni

Per ulteriori informazioni vedere la sezione 8

SEZIONE 7: Manipolazione e immagazzinamento

7.1. Precauzioni per la manipolazione sicura

Tenere lontano dal calore e dalle sorgenti di accensione
Evitare l'accumulo di cariche elettrostatiche
Le apparecchiature devono essere collegate a terra
Utilizzare impianti elettrici/di ventilazione/d'illuminazione/.../a prova di esplosione.
Utilizzare solo utensili antiscintillamento.
Non respirare i vapori ou aerosoli.
Assicurarsi che ci sia ventilazione adeguata
Evitare il contatto con gli occhi e con la pelle.
Lavare bene dopo l'uso
Indossare guanti/indumenti protettivi/Proteggere gli occhi/il viso.

7.2. Condizioni per l'immagazzinamento sicuro, comprese eventuali incompatibilità

Contenitore sotto pressione : non esporre ai raggi solari né a temperatura superiore a 50 °C.
Conservare fuori della portata dei bambini.

7.3. Usi finali particolari

Lubricants

SEZIONE 8: Controllo dell'esposizione/protezione individuale

8.1. Parametri di controllo

Valore limite di soglia :

Componenti pericolosi	N° CAS	metodo	
EU established exposure limits:			
propan-2-olo; alcool isopropilico	67-63-0	TWA	400 ppm
		STEL	500 ppm
National established exposure limits, Schweiz, Svizzera, Suisse			
propan-2-olo; alcool isopropilico	67-63-0	TWA	200 ppm
Hydrocarbons, C6-C7, n-alkanes,isoalkanes,cyclics,<5% n-hexane	EC921-024-6	TWA	500 ppm

8.2. Controlli dell'esposizione

Condizioni di esposizione :	Assicurarsi che ci sia ventilazione adeguata Tenere lontano dal calore e dalle sorgenti di accensione Evitare l'accumulo di cariche elettrostatiche
Protezione personale :	Take precautions to avoid contact with skin and eyes when handling the product. Assicurarsi che ci sia ventilazione adeguata
Inalazione :	In caso di ventilazione insufficiente, usare un apparecchio respiratorio adatto.
	Respiratori per Gas e Vapori Organici (A,AX)
pelle e mani :	Indossare adatti guanti protettivi
	(nitrile)
occhi :	Indossare occhiali di sicurezza.

SEZIONE 9: Proprietà fisiche e chimiche

9.1. Informazioni sulle proprietà fisiche e chimiche fondamentali

Aspetto : stato fisico :	Liquido con propellente propano/butano.
colore :	Incolore.
odore :	Solvente.
pH :	Non pertinente.
Punto/intervallo di ebollizione :	Non disponibile.
Punto di infiammabilità :	< 0 °C
Velocità di evaporazione :	Non disponibile.
Proprietà esplosive : limite superiori :	Non disponibile.
limite inferiori :	Non disponibile.
Tensione di vapore :	Non disponibile.
Densità relativa :	0.705 g/cm3 (@ 20°C).
Solubilità in acqua :	Insolubile in acqua
Autoaccensione :	> 200 °C
Viscosità :	Non pertinente.

9.2. Altre informazioni

VOC:	blank

SEZIONE 10: Stabilità e reattività

10.1. Reattività

Non si conoscono reazioni pericolose se usato per lo scopo per cui è inteso

10.2. Stabilità chimica

Stabile

10.3. Possibilità di reazioni pericolose

Non si conoscono reazioni pericolose se usato per lo scopo per cui è inteso

10.4. Condizioni da evitare

Evitare surriscaldamento

10.5. Materiali incompatibili

Forte agente ossidante

10.6. Prodotti di decomposizione pericolosi

CO,CO2

SEZIONE 11: Informazioni tossicologiche

11.1. Informazioni sugli effetti tossicologici

Inalazione :	L'inalazione dei vapori dei solventi può essere motivo di nausea, maldi +testa e stordimento
Ingestione :	In caso di vomito, dopo aver inalato/ingerito accidentalmente il prodotto, è consigliabile respirare a pieni polmoni. I solventi possono indurre a polmonite chimica.
Contatto con la pelle :	Irritante per la pelle
Contatto con gli occhi :	Può causare irritazione.

Dati tossicologiche :

Componenti pericolosi	N° CAS	metodo	
propan-2-olo; alcool isopropilico	67-63-0	LD50 oral rat	>2000 mg/kg
		LC50 inhal rat	>20 mg/l
		LD50 derm rabbit	>2000 mg/kg

SEZIONE 12: Informazioni ecologiche

12.1. Tossicità

R51/53: Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.

Dati ecotossicologici:

Componenti pericolosi	N° CAS	metodo	
propan-2-olo; alcool isopropilico	67-63-0	IC50 algae	>100 mg/l
		LC50 fish	>100 mg/l
		EC50 daphnia	>100 mg/l

12.2. Persistenza e degradabilità

Non c'è alcun dato sperimentale

12.3. Potenziale di bioaccumulo

Non c'è alcun dato sperimentale

12.4. Mobilità nel suolo

Insolubile in acqua

12.5. Risultati della valutazione PBT e vPvB

Non si hanno informazioni

12.6. Altri effetti avversi

SEZIONE 13: Considerazioni sullo smaltimento

13.1. Metodi di trattamento dei rifiuti

Prodotto :	Non disfarsi del prodotto e del recipiente se non con le dovute precauzioni. Non scaricare nelle fognature o nell'ambiente; smaltire i residue in un punto di raccolta rifiuti autorizzato.
Contenitori contaminati :	I rifiuti devono essere trattati secondo le leggi locali, statali o nazionali

SEZIONE 14: Informazioni sul trasporto

14.1. Numero ONU

Numero UN :	1950

14.2. Nome di spedizione dell'ONU

Nome di spedizione:	AEROSOLS, flammable(naphtha's)

14.3. Classi di pericolo connesso al trasporto

Classi:	2.1
ADR/RID – Codice di classificazione:	5F

14.4. Gruppo d'imballaggio

Gruppo d imballaggio:	non applicabile

14.5. Pericoli per l'ambiente

ADR/RID – Materia pericolosa dal punto di vista dell'ambiente:	Si
IMDG - Marine pollutant:	Pollutante marino
IATA/ICAO – Materia pericolosa dal punto di vista dell'ambiente:	Si

14.6. Precauzioni speciali per gli utilizzatori

ADR/RID – Codice Tunnel:	(D)
IMDG - Ems:	F-D,S-U
IATA/ICAO - PAX:	203
IATA/ICAO - CAO	203

14.7. Trasporto di rinfuse secondo l'allegato II di MARPOL 73/78 ed il codice IBC

Non pertinente.

SEZIONE 15: Informazioni sulla regolamentazione

15.1. Norme e legislazione su salute, sicurezza e ambiente specifiche per la sostanza o la miscela

La scheda dati di sicurezza è compilata secondo i requisiti europei attualmente applicabili.
Dir. 2008/47/CE, modifica della direttiva 75/324/CEE sui generatori di aerosol.
Directiva 99/45/EU
Regolamento (CE) n. 1907/2006 (REACH)

15.2. Valutazione della sicurezza chimica

Non si hanno informazioni

SEZIONE 16: Altre informazioni

*Termini esplicativi del rischio:	R11: Facilmente infiammabile. R12: Estremamente infiammabile. R36: Irritante per gli occhi. R38: Irritante per la pelle. R65: Nocivo: può causare danni ai polmoni in caso di ingestione. R67: L'inalazione dei vapori può provocare sonnolenza e vertigini. R51/53: Tossico per gli organismi acquatici, può provocare a lungo termine effetti negativi per l'ambiente acquatico.
*Termini esplicativi del indicazione di pericolo:	H225 : Liquido e vapori facilmente infiammabili. H304 : Lenyelve és a légutakba kerülve halálos lehet. H315 : Provoca irritazione cutanea. H319 : Provoca grave irritazione oculare. H336 : Può provocare sonnolenza o vertigini. H411 : Tossico per gli organismi acquatici con effetti di lunga durata.

Questo prodotto deve essere conservato, magneggiato e impiegato secondo le procedure della corretta igiene industriale ed in conformità alle norme legislative.
Le informazioni qua riportate sono basate sull' attuale stato della nostra conoscenza e intendono descrivere i nostri prodotti agli effetti delle esigenze di sicurezza. Esse non costituiscono garanzia di specifiche qualità.

W4.10 FUCHS - ANTICORIT 2006

(fuchs_anticorit-2006_11-2010)

SCHEDA DI DATI DI SICUREZZA

Documento conforme al Regolamento (CE) n. 1907/2006 del 18 dicembre 2006 – REACH e successive modifiche ed integrazioni, al DL n°65 del 14/03/03 (attuazione direttiva 1999/45/CE) e successive modifiche ed integrazioni, alla Direttiva 67/548/CE del Consiglio, del 27 giugno 1967 e successive modifiche ed integrazioni ed al Regolamento (CE) n.1272/2008 del 16 dicembre 2008 - CLP - e successive modifiche ed integrazioni.

1 Identificazione della sostanza/preparato e della società/impresa

1.1 Identificazione della sostanza o del preparato

Denominazione Commerciale : **ANTICORIT 2006**

1.2 Uso della sostanza/del preparato : *fluido protettivo*

1.3 Identificazione della Società/dell'impresa

Ragione Sociale	:	*Fuchs Lubrificanti S.p.A.*
Indirizzo	:	*Via Riva n°16 – 14021- Buttigliera d'Asti(AT)- Italia*
Telefono	:	*+39 (0) 11 99 22 811*
Fax	:	*+39 (0)11 99 21 670*
e-mail @	:	*maria.montanaro@fuchslubrificanti.it*

1.4 Numero telefonico di chiamata urgente :

Fuchs Lubrificanti : +39 011 99 22 811(ore ufficio)

2 Identificazione dei pericoli

Classificazione della sostanza o del preparato (Direttiva 67/548/CEE e/o 1999/45/CE):

Il preparato è classificato pericoloso per l'ambiente ai sensi della direttiva 99/45/CEE e presenta pericoli derivanti da proprietà chimico – fisiche.

In seguito all'uso del preparato possono emergere i seguenti rischi principali:

- *per la salute dell'uomo:* non presenta rischi particolari nelle normali condizioni di impiego. PERICOLI FISICI E CHIMCI : il preparato comporta rischio di accumulazione elettrostatica; infiammabile (per ulteriori informazioni consultare §11).
- *per l'ambiente:* tossico per gli organismi acquatici; può provocare a lungo termine effetti negativi per l'ambiente acquatico (per ulteriori informazioni consultare §12)

Revisione : 1/10 - del 30/11/10 *1 di 10*

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

3 Composizione/informazione sugli ingredienti

Composizione: miscela a base di olio minerale di alta raffinazione, solventi idrocarburici, additivi.

Componenti che presentano un pericolo per la salute e/o per l'ambiente:

Il preparato contiene sostanze che presentano un pericolo per la salute e/o per l'ambiente

Denominazione	*%*	*CAS n°*	*EINECS n°*	*Simboli*	*Frasi R(*)*	*TLV*
Olio minerale di alta raffinazione (**)	5-15	64742-53-6	265-156-6	-	-	TWA : 5 mg/m³
Nafta (petrolio), pesante idrodesolforata (**)(§)	25-50	64742-82-1	265-185-4	Xn	10-51/53-65-66	TWA : 525 mg/m³

(*) il testo integrale delle frasi di Rischio (R) è riportato al §16.
(**) sostanza con un limite di esposizione sul posto di lavoro
(§) in funzione delle caratteristiche e della provenienza dei componenti, nella composizione chimica finale possono essere identificati vari composti chimici : nonano (isomeri), trimetilbenzeni, alchilbenzeni, naftalene ed altri presenti in quantità variabile e non prevedibile. Tali composti non sono aggiunti deliberatamente. Questo prodotto contiene in ogni caso <1%p di naftalene (CAS 91-20-3/EINECS 202-049-5)

4 Misure di primo soccorso

In caso di incidente consultare il medico, fornendo le indicazioni contenute sull'etichetta e nella presente scheda.

Pronto soccorso in caso di:

- *inalazione* : in caso di esposizioni ad elevate concentrazioni di vapori e nebbie allontanare l'infortunato dalla zona di esposizione e trasportarlo in luogo ben ventilato. Mantenerlo a riposo. In caso di insufficienza respiratoria acuta praticare la respirazione artificiale. Richiedere l'intervento medico se necessario.
- *contatto con la pelle* : togliere gli eventuali indumenti contaminati e lavarsi abbondantemente con acqua e sapone. Chiedere l'intervento del medico in caso di persistenza di dolore e arrossamenti.
- *contatto con gli occhi* : irrigare immediatamente con molta acqua per diversi minuti tenendo le palpebre aperte. Chiedere l'intervento del medico in caso di persistenza di dolore e arrossamenti.
- *ingestione* : non provocare il vomito per evitare il rischio di aspirazione attraverso le vie respiratorie. Richiedere l'immediato intervento medico. Risciacquare la bocca con acqua, ma non bere nulla.

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

5 Misure antincendio

Il prodotto rientra nelle categorie di pericolosità per infiammabilità.
In caso di incendio utilizzare i seguenti:

Mezzi di estinzione appropriati

Incendi di piccola entità : anidride carbonica, polvere chimica secca, schiuma, acqua nebulizzata, sabbia, terra.

Incendi di grande entità : usare acqua nebulizzata o schiuma resistente all'alcool.

Mezzi di estinzione da non utilizzare

Incendi di piccola entità : non usare acqua in getti entro i contenitori di stoccaggio per evitare ribollimenti

Incendi di grande entità : non usare acqua in getti entro i contenitori di stoccaggio per evitare ribollimenti

Rischi fisici derivanti dai prodotti di combustione

In seguito ad incendio formazione di ossidi di carbonio (TLV-TWA: 25 ppm) e ossidi di zolfo /TLV-TWA : 2 ppm)

I fumi che si sprigionano possono causare emicranie, capogiri, irritazioni dell'apparato respiratorio ed al limite collasso respiratorio.

Equipaggiamento speciale di protezione per gli addetti all'estinzione degli incendi

Vestiario protettivo completo di apparecchio di autorespirazione.

6 Misure in caso di rilascio accidentale

Precauzioni individuali : tenere lontano dalle fonti di ignizione; evitare il contatto con la pelle, gli occhi ed il vestiario. Mantenere una adeguata ventilazione.

Precauzioni ambientali : tossico per gli organismi acquatici; può provocare a lungo termine effetti negativi per l'ambiente acquatico; evitare che il prodotto defluisca in fognature o corsi d'acqua. Nel qual caso informare immediatamente le Autorità competenti locali (Vigili del fuoco, Polizia)

Metodi di bonifica : eliminare ogni fonte di ignizione; per perdite di piccola entità evitare l'espandersi del liquido con segatura, sabbia o terra. Lavare l'area contaminata con una grande quantità d'acqua. Per perdite di grande entità impedire al liquido versato di espandersi con sabbia, terra od altri materiali assorbenti idonei. Raccogliere il prodotto con mezzi idonei e trasferire il liquido se possibile in una tanica di salvataggio. Non si richiede l'uso di specifici agenti neutralizzanti. Per ulteriori informazioni consultare §8 e §13.

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

7 Manipolazione e immagazzinamento

7.1 Manipolazione

Precauzioni per una manipolazione sicura ed accorgimenti tecnici : evitare il contatto diretto durante il travaso. Utilizzare solo in locali adeguatamente areati. Non mangiare, bere e fumare durante l'utilizzo. Mantenere una buona ventilazione. Prevenire la formazione di aerosol. Non scaldare a temperature vicine al punto di infiammabilità. Proteggere dalle cariche elettrostatiche e tenere lontano dalle fonti di ignizione-Non fumare.

7.2 Immagazzinamento

Precauzioni per un immagazzinamento sicuro : immagazzinare la miscela fornita imballata in posizione verticale, in locali coperti, ventilati e rispondenti a quanto previsto dalla normativa vigente. Conservare preferibilmente nel recipiente originale; nel caso di travaso riportare tutte le indicazioni delle etichette sul nuovo imballo. Travasare la miscela se fornita sfusa in serbatoi progettati e a norma di legge e costruiti con materiali e rivestimenti idonei.

7.3 Usi particolari:

Raccomandazioni per usi particolari : non evidenziate

8 Controllo dell'esposizione/protezione individuale

8.1 Valori limiti d'esposizione

Nome chimico	Norma di riferimento	TWA/VLEBh		STEL/VLE 15'		Ceiling/ MAK	
		mg/m3	ppm	mg/m3	ppm	mg/m3	ppm
Ragia minerale	ACGIH	525	100	-	-	-	-
Cherosene	ACGIH	200	-	-	-	-	-
Naftalene	ACGIH	55	10	-	-	-	-
Olio minerale	ACGIH	5	-	10	-	-	-

8.2 Controlli dell'esposizione

Utilizzare il prodotto in aree adeguatamente aerate e solo per gli utilizzi previsti dalla scheda di sicurezza e/o tecnica. I D.P.I. (dispositivi di protezione individuale) devono essere conformi alle norme di cui al D.L. 4 dicembre 1992, n°475 e successive modifiche ed integrazioni.

8.2.1 Controlli dell'esposizione professionale

a) Protezione respiratoria : non respirare i vapori/aerosoli; dove la concentrazione del prodotto in aria dovesse superare i limiti esposti in questa sezione e se gli impianti, le modalità operative ed altri mezzi per limitare l'esposizione dei lavoratori non risultassero adeguati, sono necessari altri mezzi di protezione delle vie respiratorie (ad es: maschere con cartuccia per vapori organici e per polveri/nebbie).
b) Protezione delle mani : indossare guanti da lavoro in materiale idoneo resistente agli idrocarburi.
c) Protezione per gli occhi : dove si potesse venire a contatto con il prodotto indossare occhiali di sicurezza/visiere/schermo facciale.
d) Protezione della pelle : tuta da lavoro e grembiule in materiale idoneo; cambiare immediatamente gli indumenti contaminati e lavarli accuratamente prima di riutilizzarli. È opportuno mantenere una buona igiene personale e dell'abbigliamento da lavoro.

8.2.2 Controlli dell'esposizione ambientale

Evitare di disperdere il prodotto nell'ambiente.

FUCHS

SCHEDA DI DATI DI SICUREZZA
ANTICORIT 2006

9 Proprietà fisiche e chimiche

9.1 Informazioni generali(*)

Stato fisico	Omogeneo
Colore	Beige
Odore	Caratteristico

9.2 Informazioni importanti relative alla salute, alla sicurezza e all'ambiente(*)

pH	Non applicabile
Punto/intervallo di ebollizione	150-200°C (solvente)
Punto di infiammabilità V.C.	40°C
Proprietà esplosive	Non evidenziate
Limite inferiore	1.0% Vol (solvente)
Limite superiore	6.0 % Vol (solvente)
Densità a 20°C	Non disponibile
Solubilità in acqua	Insolubile
Viscosità Brookfield 25°C	2000-6000 mPa.s
Velocità di evaporazione	Non disponibile (n-butilacetato = 1)
Coefficiente di ripartizione(n-ottanolo/acqua)	Non disponibile

9.3 Altre informazioni(*)

Punto/intervallo di fusione/scorrimento	Non disponibile
Miscibilità	Principali solventi organici
Conducibilità	Non applicabile
Temperatura di accensione	> 200°C (solvente)
% VOC (dir. 1999/13/CE e successive modifiche)	c.a.50%

(*)*Per maggiori informazioni consultare la Scheda Tecnica*

10 Stabilità e reattività

10.1 Condizioni da evitare : alte temperature, fiamme libere, scintille.

10.2 Materie da evitare : agenti ossidanti forti

10.3 Prodotti di decomposizione pericolosi : non evidenziate

- Stabilizzanti : non richiesti; stabile a temperatura ambiente e nelle normali condizioni di utilizzo
- Reazioni esotermiche : non evidenziate
- Mutamento aspetto della sostanza/prodotto : una leggera variazione di colore nel tempo non pregiudica le caratteristiche e la funzionalità del prodotto.
- Prodotti di decomposizione in seguito a contatto con l'acqua : non evidenziata
- Degradazione con formazione di prodotti instabili : non evidenziata

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

11 Informazioni tossicologiche

- LD 50 (ingestione ratto) mg/Kg : dati sul preparato non disponibili
- LC 50 (inalazione ratto) mg/l/4ore : dati sul preparato non disponibili
- LD 50 (assorbimento cutaneo ratto) mg/Kg : dati sul preparato non disponibili

Effetti nocivi derivanti dall'esposizione al prebarato.

- *Per inalazione* : esposizioni prolungate a vapori o nebbie di prodotto possono causare irritazione alle vie respiratorie, mal di testa e capogiri.
- *Per ingestione* : il preparato ingerito può causare irritazione dell'apparato digerente con vomito, nausea e diarrea
- *Per contatto con la pelle* : generalmente non irritante; contatti frequenti e prolungati possono sgrassare ed irritare la pelle causando dermatiti.
- *Per contatto con gli occhi*: potrebbe provocare una leggera irritazione, ma non lesioni oculari.

Effetti ritardanti o immediati in seguito a esposizione breve o prolungata.

- *Sensibilizzanti* : nessuno, al meglio delle attuali conoscenze
- *Cancerogeni* : nessuno, al meglio delle attuali conoscenze
- *Mutageni* : nessuno, al meglio delle attuali conoscenze
- *Tossici per la riproduzione* : nessuno, al meglio delle attuali conoscenze
- *Teratogeni* : nessuno, al meglio delle attuali conoscenze
- *Narcotizzanti* : nessuno, al meglio delle attuali conoscenze

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

12 Informazioni ecologiche

Degradabilità (relativa al preparato)

Dati non disponibili.

Tossico per gli organismi acquatici; può provocare a lungo termine effetti negativi per l'ambiente acquatico.

In caso di contaminazione con le acque di scarico l'utilizzatore deve attenersi a quanto previsto dal Dlgs 152/2006 e successive modifiche ed integrazioni. In caso di contaminazioni maggiori provvedere prima dello scarico delle acque alla disoleazione mediante opportuni processi chimico fisici.

Le informazioni qui di seguito riportate sono fornite per le sostanze presenti nel preparato classificate pericolose per l'ambiente. Il preparato contiene sostanze classificate pericolose per l'ambiente : nafta (petrolio) pesante idrodesolforata 25-50%

12.1 Ecotossicità

- *organismi acquatici* : Dati non disponibili
- *della Daphnia* : Dati non disponibili
- *piante ed animali terrestri* : Dati non disponibili

12.2 Mobilità

Dati non disponibili

12.3 Persistenza e degradabilità

Dati non disponibili

12.4 Potenziale di bioaccumulo

Dati non disponibili

12.5 Risultati della valutazione PBT

Nessun dato attualmente disponibile

12.6 Altri effetti nocivi

Effetti sugli impianti per il trattamento delle acque reflue : Dati non disponibili

13 Considerazioni sullo smaltimento

Lo smaltimento dei rifiuti deve avvenire in luogo autorizzato attenendosi alle disposizioni contenute nel DPR 691/82 (Consorzio Obbligatorio degli Oli Usati) ed in osservanza scrupolosa delle leggi vigenti (Dlgs 152/2006 e successive modifiche ed integrazioni). Pericoloso per gli organismi acquatici. Si raccomanda di rispettare per lo smaltimento quanto previsto al §7.

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

14 Informazioni sul trasporto

Il preparato presenta rischi per il trasporto.

- **TERRESTRE (Ferrovia/strada, come RID-Dir.96/49/CE-ADR - Dir. 94/55/CE)**

CLASSE RID/ADR	:	3 (F1)
N°IDENTIFICATIVO DEL RISCHIO	:	30
ETICHETTATURA DI PERICOLO	:	3
MAX KG ESENTI	:	LQ7
DOCUMENTO DI TRASPORTO	:	1993-liquidi infiammabili, n.a.s. (contiene nafta-petrolio-pesante idrodesolforata
TREMCARD DEL PRODOTTO	:	liquidi infiammabili, n.a.s. (contiene nafta-petrolio-pesante idrodesolforata
GRUPPO di IMBALLAGGIO	:	III
N°IDENTIFICATIVO DELLA SOSTANZA	:	1993
TREMCARD (STRADA)	:	FLI 5/00

- **TRASPORTO IN ACQUE INTERNE (come ADN/)**

CLASSE ADN/R	:	3

- **TRASPORTO MARITTIMO (IMO/codice IMDG)**

CLASSE IMDG	:	3
NUMERO UN	:	1993
NUMERO EMS	:	-
CODICE IMDF	:	-
NUMERO MFAG	:	311
INQUINANTE MARINO	:	si
ETICHETTATURA DI RISCHIO	:	3
GRUPPO DI IMBALLAGGIO	:	III
RISCHIO SECONDARIO	:	-
ADEGUAMENTO NOME DI SPEDIZIONE	:	liquidi infiammabili, n.a.s. (contiene nafta-petrolio-pesante idrodesolforata

- **TRASPORTO AEREO (ICAO/IATA)**

CLASSE ICAO/IATA	:	3
NUMERO ONU	:	1993
Etichetta	:	3
Gruppo di imballaggio	:	III
Nome	:	liquidi infiammabili, n.a.s. (contiene nafta-petrolio-pesante idrodesolforata

FUCHS

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

15 Informazioni sulla regolamentazione

Classificazione ed etichettatura secondo le direttive CEE 67/548 e/o 1999/45.

Contiene	:	-
Classificazione simbolo	:	*N* = pericoloso per l'ambiente
Frasi di rischio	:	*R10* = infiammabile. *R51/53* = tossico per gli organismi acquatici; può provocare a lungo termine effetti negativi per l'ambiente acquatico
Consigli di prudenza	:	*S16* = conservare lontano da fiamme e scintille – non fumare *S29* = non gettare i residui nelle fognature *S43* = in caso di incendio usare schiuma chimica. Non usare getti d'acqua *S61* = non disperdere nell'ambiente. Riferirsi alle istruzioni speciali/schede informative in materia di sicurezza

16 Altre informazioni

- Le basi utilizzate contengono meno dello 0.1% peso di benzene (nota P) ed un valore di estratto in DMSO determinato con il metodo IP346 inferiore al 3% (nota L). Esse non sono quindi classificate cancerogene secondo la normativa vigente.
- Le informazioni riportate nella Scheda Tossicologica sono redatte al meglio delle nostre attuali conoscenze, intendono descrivere il prodotto dal punto di vista della sicurezza. Conservare, trasportare ed utilizzare secondo le norme di igiene e sicurezza di buona pratica industriale ed in conformità alle vigenti norme di legge.
- Testo integrale di ogni frase (R) pertinente citata al §3:
  - R10 = infiammabile
  - R51/53= tossico per gli organismi acquatici; può provocare a lungo termine effetti negativi per l'ambiente acquatico
  - R65 = può causare danni polmonari se ingerito
  - R66 = l'esposizione ripetuta può provocare secchezza e screpolature alla pelle
- Questa scheda annulla e sostituisce ogni altra edizione precedente
- Capitoli modificati : Rif. Normativi Pag. 1 e Pag. 10

SCHEDA DI DATI DI SICUREZZA

ANTICORIT 2006

Riferimenti normativi principali

• *Direttiva 67/548/CE del 27 giugno 1967 e successive modifiche e integrazioni ;*	relativa alla classificazione, all'imballaggio ed all'etichettatura delle sostanze pericolose
• *Circolare del ministero del Lavoro n°7RL/20797/RL-5-960 del 10/12/1994 :*	relativa all'etichettatura "oli minerali" per i preparati destinati al taglio metalli
• *DL n°52 del 3 febbraio 1997 :*	attuazione delle direttive CEE concernenti classificazione imballaggio ed etichettatura delle sostanze pericolose e successive modifiche ed integrazioni
• *DL n°10/1997 : e successive modifiche ed integrazioni*	attuazione delle direttive CEE relative ai dispositivi di protezione individuali
• *Direttiva 98/8/CEE -16/02/98 e successive modifiche ed integrazioni:*	relativa all'immissione sul mercato dei biocidi
• *DM 28/04/1997 :*	attuazione art.37 del DL n°52/1997 concernete classificazione imballaggio ed etichettatura delle sostanze pericolose
• *D.L. 17/8/99 n°334 e successive modifiche ed integrazioni :*	attuazione della direttiva 96/82/CE relativa al controllo dei pericoli di incidenti rilevanti connessi con determinate sostanze pericolose
• *Direttiva 1999/45/CE e successive modifiche ed integrazioni recepita dal DL n°65 del 14/03/03 :*	ravvicinamento alle disposizioni legislative, regolamentari ed amministrative degli stati membri relative alla classificazione, all'imballaggio ed all'etichettatura delle sostanze pericolose.
• *Dlgs 02/02/02 n°25 :*	attuazione della direttiva 98/24/CE sulla protezione della salute e della sicurezza dei lavoratori contro i rischi derivanti da agenti chimici durante il lavoro.
• *D.Lgs. 81/08 e successive modifiche ed integrazioni:*	Testo unico in materia di salute e sicurezza nei luoghi di lavoro
• *DLgs 152/2006 e successive modifiche ed integrazioni:*	Norme in materia ambientale
• *Regolamento (CE) n.1907/2006 del 18 dicembre 2006 - REACH-*	Regolamento relativo alla registrazione, alla valutazione, all'autorizzazione ed alla restrizione delle sostanze chimiche (modifica 99/45/CE per Schede di sicurezza)
• *Direttiva 2006/212/CE del 18 dicembre 2006*	ravvicinamento delle disposizioni legislative, regolamentari ed amministrative relative alla classificazione, all'imballaggio e all'etichettatura delle sostanze pericolose per adattarla al regolamento (CE) n. 1907/2006
• *Regolamento 440/2008 del 30 maggio 2008*	metodi di prova ai sensi del regolamento (CE) n. 1907/2006
• *Regolamento (CE) n.1272/2008 del 16 dicembre 2008 - CLP -*	Regolamento relativo alla classificazione, all'etichettatura ed all'imballaggio delle sostane e delle miscele.
• *Accordo A.D.R.:*	norme complementari per il trasporto delle merci pericolose(Legge n°1839 del 12/08/62, DM 04/09/96 e DM 15/05/97 e successive modifiche ed integrazioni).
• *Allegato XXXVIII Dlgs 81/08 e successive modifiche ed integrazioni*	Valori limite di esposizione professionale
• *TLV's and BEI's:*	Based on Documentation for Threshold Limit Values for Chemicals Substances and Physical Agents Biological Exposure Indices.(ACGIH)

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