

CALANDRA 34

Manual of use and maintenance



COMPILED FROM: ICARO SCAFFOLDING
LAST REVISION: April 2009

The builder declares that the machinery is conforming to the laws and Technical Norms of good construction to the state of the art,existing during the present declaration

DECLARATION OF THE MANUFACTURER

The Icaro Scaffolding it declares under the personal responsibility of Mr.Carmine Re, General director and administrator of the society,born in Milan 1969 resident in Milan via degli Alerami n.5 that the CAL 34,register N°CE
It has been realized near the establishment in Trezzo S/Adda and it is conforming to the essential safety of the MACHINES FORESEEN by the followings Laws and Normative:

- DPR 547/55 Norms for the prevention of the accidents on the job
- EUROPEAN NORM CENELEC EN 60204-1(NORM CEI 44-5)ELECTRIC EQUIPEMENTS OF INDUSTRIAL MACHINES.
- DL 15/08/91 N.277 – Workers’ protection against consequential risks from expo sure to lead ASBESTOS,noise and to chemical,physical and biological agents
- Directive EEC 89/392 amended
- DL 626/94

In respect to the prescriptions of which to the enclosure V to the Directive Community 89/392 ECC and 91/368 EEC,it declares that the machinery in object of the present declaration of conformity respect the safety and sanitary essential requisite.

The Icaro in the person of his legal representative identified in precedence,

IT DECLARES BESIDES

That to the technical office of the brand,the followings are available documents:

- Sketches of together of the machinery
- Schemes encircled voters
- Sketches of the particular ones
- Documentation related to the installed components
- Analysis of the conformity of the car to the essencial requisite of the quoted directive
- Norms and use technical specifications

Date

Stamp and signature

IDENTIFICATION OF THE MACHINERY

MANUFACTURER	Icaro Scaffolding srl
ADDRESS	Via S. Agnese
DENOMINATION PLOTS	CALANDRA – SPIRALATRICE
MODEL	CAL 34
REGISTER NUMBERCE
YEAR OF CONSTRUCTION	20.....
TENSION	Three phaseVolts
FREQUENCY Hz.

TECHNICAL ASSISTENCE	SOCIAL REASON
	ADDRESS
	TELEPHONE NUMBER

On the car it is rivetted a plate on which the followings data are recapitulated:

- **Builder**
- **Model**
- **Register number**
- **Year of construction**
- **Marked CE**

To the arrival of the machinery to make sure some presence of the complete nameplate of the data of identification above listed.

In case of lack or incompleteness of the data, to immediately tell the builder or the retailer.

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INDEX

Pag.		
1.0	INTRODUCTION.....	6
1.1	INTRODUCTION.....	6
1.2	FORESEEN AND NOT FORESEEN USE.....	7
1.3	WAY OF CONSULTATION OF THE MANUAL.....	8
2.0	DESCRIPTION OF THE MACHINERY.....	10
2.1	CHARACTERISTIC TECHNIQUES.....	11
3.0	SAFETY PRESCRIPTIONS.....	13
4.0	SAFETY SYMBOLS.....	16
5.0	SAFETY DEVICES.....	18
5.1	PROTECTIONS OF THE ORGANS OF FOLDING.....	18
5.2	EMERGENCY STOP.....	18
5.3	OPENING ELECTRIC PANEL.....	18
5.4	COMMAND PEDAL.....	18
6.0	PREPARATION OF THE INSTALLATION AREA.....	20
7.0	MOVEMENT AND STOCKPILING RECEPTION.....	20
7.1	SAFETY PRESCRIPTIONS FOR THE MOVEMENTS.....	20
7.2	CONTROLS IMPLEMENTATION AT THE RECEPTION.....	21
7.3	DISPOSAL OF PACKAGING MATERIAL.....	21
7.4	STOCKPILING AND MAINTENANCE.....	21
8.0	INSTALLATION.....	22
8.1	ELECTRIC CONNECTION.....	22
8.2	SENSE OF ROTATION CHECKING.....	24
8.3	SAFETY DEVICES CHECKING.....	24
9.0	USE.....	26
9.1	COMMANDS.....	26
9.2	REGULATIONS.....	28
9.2.1	REGULATION SCREW.....	28
9.2.2	REGULATION ROLLS.....	28
9.3	OPERATOR POSITION.....	28
9.4	MACHINERY STARTING.....	29
9.4.1	PRELIMINARY CONTROLS.....	29
9.4.2	STARTING.....	29
9.5	MACHINERY STOP.....	29
9.6	REACTIVATION AFTER A FORCED INTERRUPTION.....	29

10.0 OPERATIONAL PRACTICES.....	30
10.1 EXECUTION OF CIRCLE ARCS.....	30
10.2 EXECUTION OF CIRCLES.....	30
10.3 EXECUTION OF SPIRALS.....	30
11.0 MALFUNCTIONING.....	31
12.0 RESIDUAL RISK.....	32
13.0 MAINTENANCE.....	33
13.1 SAFETY PRESCRIPTIONS.....	33
13.2 DISSECTION DEVICES FORESEEN.....	34
13.3 PROGRAMMED MAINTENANCE CARD.....	35
13.4 PROGRAMMED MAINTENANCE OPERATIONS.....	35
13.5 LONG PERIODS STOP.....	36
14.0 DISPOSAL.....	36
14.1 PRODUCTION REJECTS.....	36
14.2 MACHINERY DEMOLITION.....	36
15.0 ENCLOSURES TECHNICAL.....	36

TABLE INDEX :

Table 1 Technical data.....	11
Table 2 Calandering capacity.....	11
Table 3 Characteristics of the material to be worked.....	12
Table 4 Safety symbols.....	16
Table 5 Maintenance card.....	35

1.0 INTRODUCTION

1.1 INTRODUCTION

This manual is destined to the staff employed to the installation, to the use and to the maintenance of the machinery, and it has been created for allowing the operators a correct and sure job.

We remember that this document has to be always available at the employees, which, before effecting any operation on the machinery, obligatorily have to read and to assimilate all the contained indications in this manual.

All the operations of installation, use and maintenance must be performed from the qualified and authorized staff.

If some part of this manual doesn't sufficiently result clear, our department of technical support is available to furnish all the information that were held necessary.

In case of necessity ask to:

**Icaro scaffolding srl
Via Sant'Agnese
20148 Milano
Italia**

This manual contains reserved sketches, projected and realized by Icaro.

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1.2 FORESEEN AND NOT FORESEEN USE

The machinery is destined to the calandering of steel bars, smooth or nervate, for armed cement.

It's forbidden to use the machinery for other non foreseen uses.

Particulary it is forbidden to work material with different characteristics from those foreseen in table 2 and table 3.

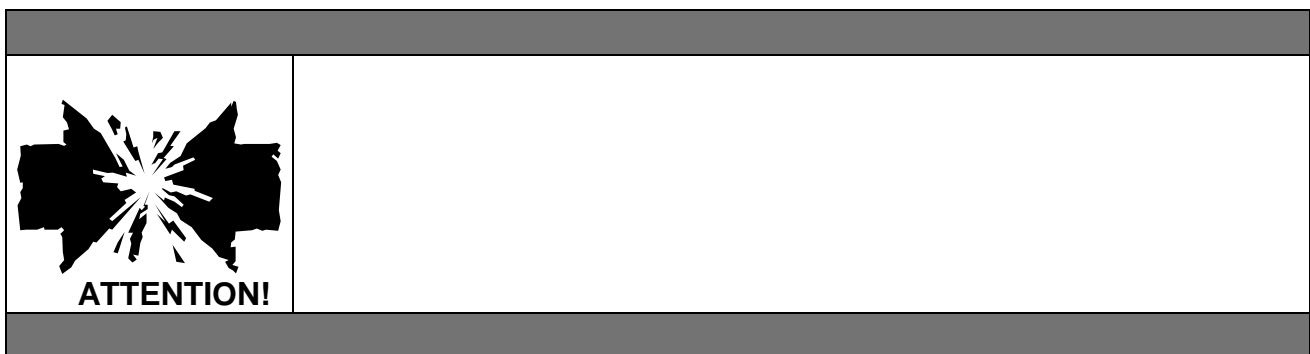
The improper use of the machinery and the missed observance of the procedure of job, of safety and of maintenance, can cause risks for the operators and the staff, as well as damages to the structure of the machinery and its components.

The builder doesn't answer to the possible consequential damages from improper use or from changes brought to the machinery. Responsibility reverts, in this case, on the consumer.

1.3 Way of consultation of the manual

The manual takes in examination all the operations of installation, use and maintenance of the machinery.

To underline the parts concerning operations or situations that can jeopardize the safety of the operators or the functionality of the machinery has been adopted this symbol:



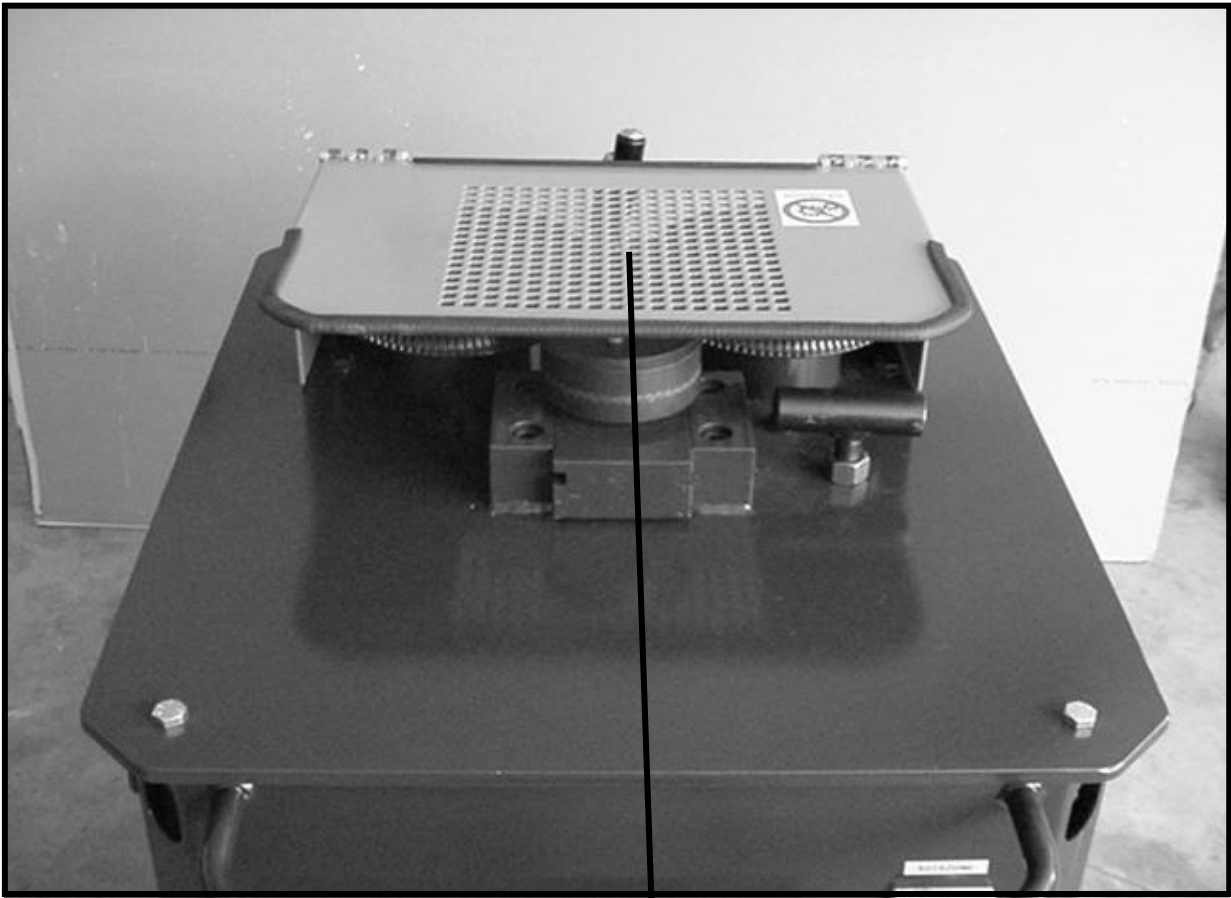
We recommends the maximum attentions in the reading of these parts.

The pages containing images, have progressively been marked with the letters of the alphabet (A, B, C..etc.) and they are situated to the LEFT. The initials of the suitable details (A1, A2..etc.) it coincides with the descriptive part that is found on the RIGHT.

NOTE

This manual is delivered to the buyer with the machinery.

It is important that the manual is introduced to the whole staff entrusted of the operations of installation, use and maintenance of the machinery, and that it is available in a defined place.

**A.3**

2.0 DESCRIPTION OF THE MACHINERY

The machinery is destined to the calendering of steel bars, smooth or nervate, for armed cement.

The machinery is constituted by a strong loom in plate, a bench in plate of suitable thickness, two drawing rolls and an idle roll.

Inside the loom it is installed an electric engine that through a reducer it transmits the motion to the rolls of drawing.

The idle roll, that has the function to determine the bending radius, it is adjustable acting on the regulation screw.

The locking lever it maintains the screw in position.


The organs folders are protected from a coverage (A.3) connected to a micro safety interrupter, that prevents the operation of the machinery with the lifted coverage.

The calendaring command is given by the operative one through special pedal. Looking at the machinery of forehead, that is from the part of the selector, the toward of correct job is from left toward right.

This because the drawing rolls are endowed with grooves tilted for making taking on the bar.

Through the rotation selector it is possible to reverse the sense of rotation of the rolls, but this is allowed only phase of return of the calendared bar, and to effect the real calendaring, is incurred not otherwise in the risk to ruin the Teeths of the rolls.

The machinery is endowed with a locking lever that, during the calendaring, it has to be shut.

 <p>ATTENTION!</p>	<p>It's important that during the job phase, the locking lever, it's always shut!</p>
--	--

In the iron exit zone a regulation bench roll has fixed.

Regulating the bench roll in exit, it is possible to get the spiral calendaring.

2.1 Characteristic Techniques

		CAL. 34	
WIDTH		800 mm	
DEPTH'		950 mm	
HEIGHT		960 mm	
MASS		348 kg	
DIAMETERS DRAWING ROLLS		210 mm	
DIAMETERS IDLE ROLL		120 mm	
STANDARD TENSION		380 V	
STANDARD FREQUENCIES		50 Hz	
INFERIOR SONOROUS ISSUE TO		Inferior to 70 dB (A)	
		1° SPEED	2° SPEED
ABSORBED POWER		2.5 Kw	1.8 kW
ROLLS' SPEED		11 giri/min	22 giri/min
TRASCINAMENTO VELOCITA'		7.5 m/min	15 m/min

Table 1 Technical data

CALENDERING CAPACITY	
Breakup load $\sigma_R = 650 \text{ N/mm}^2$	CAL 34
Bar diameter	Da 6 a 34 mm
Bending radius	Da 120 mm to boundless


Table 2 Machinery capacity

NOTE

The machinery can works on two speeds(see table 1)

The choice of the speed is effected by the operator in function of calendaring planned rays and in function of he workmanship bar.

The strenght of calendaring speed is superior in 1° speed

<p>ATTENTION!</p> 	<p>The least calendaring diameter doesn't have to be inferior to how much prescribed by norms in act.</p>
--	---

GENERAL CHARACTERISTICS	
Maximum diameter	<p>See Table 2 In case of nervate bars,the measured diameter on the nervous system doesn't have to overcome of 10% the nominal diameter</p>
Tipo di materiale	<p>Steel bars for construction,smooth or nervate,for armed cement</p>

Table 3 Characteristics of the material to be worked

3.0 SAFETY PRESCRIPTIONS

Before using the machinery, the operator has to read and assimilate this manual (page 5, 7).

This manual constitutes integral part of the machinery and establishes the employment and the way of use it. (page 6)

In this manual the operational functions, the maintenance and the information are described for safety that the operator has to follow.

On the machinery are affixed some safety signs. It represents a violation of the safety prescriptions to remove any of the signs (page 15). Besides it is obligatory to replace in the briefest possible time the labels and the writings of warning, of danger, that for any motive are not legible or interpretable.

Use the machinery for the use which is destined. It's forbidden a different or an improper use (page 6).

The builder doesn't answer any consequential damages from an improper employment of the machinery or from technical changes effected on the machinery. Responsibility reverts, in this case, only on the consumer (page 6).

All the operations for installation, use and maintenance must be performed from authorized and qualified staff, concerning to the prescriptions of this manual, to the norms in force inside the establishment and to the safety norms for your country.

Before connecting the machinery to the supply line, checking that the line tension is that projected for the machinery (page 2, 10).

Before effecting whatever operation on the electric plant or on the components connected to electricity, it is obligatory to remove tension from the machinery disconnecting the supply cable.

It is forbidden the use of the machinery by not authorized staff; besides it is absolutely forbidden to approach the machinery by external or not authorized person.

It is forbidden to autonomously complete operations or manoeuvres that are not of own competence or that can jeopardize the own or others' safety.

The operator can start the machinery only if it is a sure working.

The operator is forced to eliminate or to signal immediately, damages or changes of the machinery that can jeopardize the safety of it.

It is forbidden to clean, to oil and to fatten up by hands the organs and the elements, or to complete on them any operation of maintenance and reparation with the machinery at work.

Every day, before beginning to work at the machinery, check that the safety devices have a correct working following the law dispositions. Don't get off, modify or put out

function, machinery components or safety devices.

Take care of the cleaning, and guarantee the good visibility of the work place of machinery. Dirty traces (for example oil and sawdust on the floor) and obstacles can jeopardize safety.

The operator has to adopt opportune devices of individual protection (D:P:I:), gloves and shoes relating to accidents.

It is forbidden to use on the place of job garments or attires, that, in relationship to the nature of the operations and the machinery characteristics, can constitute a danger for the staff safety.

The personal garments adopted on the job don't have fluttering parts that can hold on to machinery gears.

Don't wear bracelets, chains or other objects that can remain entangled in the machinery.

Maintain picked hair during the job.

For all the interventions to be effected on the machinery, use exclusively utensils and fit equipments and in good conditions.

All the jobs on the electric plant must to be performed only by a qualified electrician.

After every assemblage or reparation of electric parts and before the machinery start, the protection devices and the correct sense rotation must be checked.

Use with care the foreseen protection devices.

When the workmanship is performed for the first time, use the maximum prudence.

The machinery command must be submitted to an only operator.

In case of flood of the work area, remove the supply power and remove the water.

In case of fire, remove the supply power and extinguish the fire with dust or CO2 extinguishers. Don't use in any case water.

Any anomaly found during the job, it must immediately signal to the "Safety responsible".

Definition of "Dangerous Zones", "Exposed Person", "Operator". To the senses of the Directive CEE 89/392:

- DANGEROUS ZONES: any zone in proximity of the machinery in which the presence of an exposed person constitutes a risk for the safety and the health of this person.
- EXPOSED PERSON: any person that is on the center or near of the dangerous zones.
- OPERATOR: the person entrusted of install, start, regulate, perform maintenance, clean, mend and transport the machinery.

In case of accidents or risk situation on the machinery, immediately tell the builder.

In case of necessity, contact the service of technical support telling:

- register number
- model
- purchase date
- detailed informations of the problem.

4.0 SAFETY SYMBOLS

THE FOLLOWING SYMBOLS ARE ON THE MACHINERY:

SYMBOL	POSITION	MEANT
	ELECTRIC PANEL	DANGER.PRESENCE OF TENSION
	PROTECTION COVER	IT IS FORBIDDEN TO REMOVE THE SAFETY DEVICES
	IN CORRESPONDENCE OF CONNECTION SCREW PUT ON THE FLOOR	CONNECTION SCREW ON THE FLOOR

In represents a violation of the safety prescriptions remove one of any safety signs. Besides it is obligatory to replace in the briefest possible time the warnings labels and warning writings, that for any motive are not interpretable.

B.1



B.3


B.2



B.4



5.0 SAFETY DEVICES

 <p>ATTENTION!</p>	<p>Protection of calendering gears Without the cover, the gears don't rotate. It is forbidden to neutralize the end stroke of the lock system.</p> <p>Emergency stop In any danger situation, push the emergency stop button.</p> <p>Opening electric panel The access to the electric panel is exclusively allowed to authorized staff. That will concern the norms and that before intervening on the electric parts it will check that the supply cable of the machinery is physically disconnected from the electric line. In case of repair, the replaced exchanges have to have equal characteristics to the original ones.</p> <p>Command pedal It is forbidden to remove the command pedal protection.</p>
--	--

5.1 CALENDERING GEARS PROTECTION

On the calendering gears there is a protection cover (B.1), that prevents the accidental contact of body parts with the gears.

If the cover is lifted during the job, a micro interrupter that stops the machinery intervenes. In this case the machinery reboot is possible only after the protection has again been lowered, and then repress the command pedal.

5.2 EMERGENCY STOP

The emergency stop buttons (B.2) are situated on front and rear of the machinery.

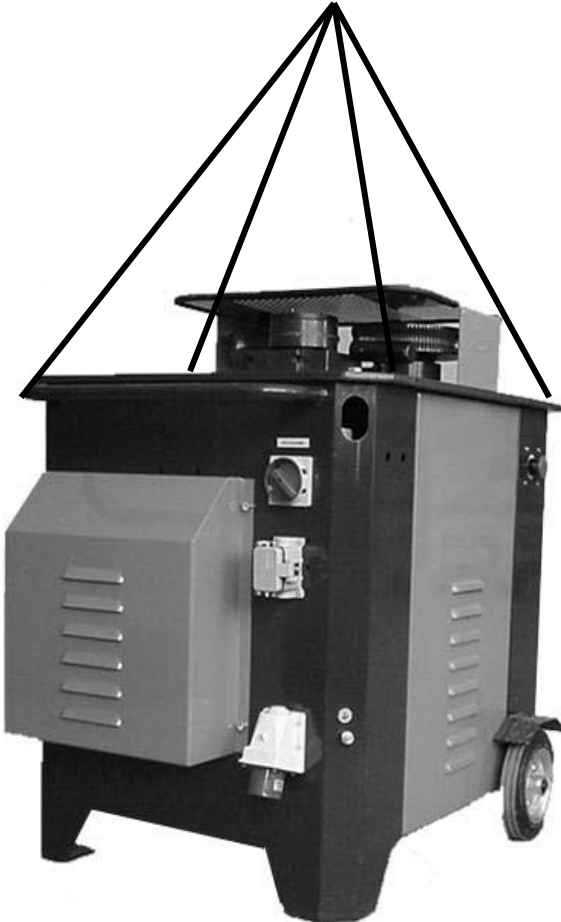
5.3 OPENING ELECTRIC PANEL

The opening of the electric panel is possible, with a special key, only with general interrupter (B.3) on "O".

5.4 COMMAND PEDAL

Command pedal (B.4) is protected by a cover that prevents its accidental starting. The pedal is connected to the machinery through a flexible electric cable, that allows to move this pedal to the position of the operator.

C.1



6.0 PREPARATION OF INSTALLATION AREA

- The structure of the support zone has to be suitable to the machinery weight(see"Technical data")and preferably in cement opportunely smoothed.
- The installation area must sufficiently light for guaranteeing to the operator a job in safety conditions.
- The installation area has to be clear from any material.
- The installation area has to be dry and protected from the atmospheric precipitations.
- The power supply plant has to answer to the norms.
- Foresee a free space in the surrounding perimeter of the machinery,proportional to the maximum dimensions of the bars that will come calendrate.

7.0 RECEPTION,MOVEMENT AND STORAGE

7.1 SAFETY PRESCRIPTIONS

- For the transport operations make sure that the machinery is stable on the plan of load of the vehicle and stare at the plan with ropes of suitable section.
- If the plan is not covered ,protect the machinery from bad weather with an impermeable clothes insured.
- Before effecting the machinery movement operations checking that the area is free from not authorized staff or animals or other things.
- All the staff have to wear the opportune relating to accidents attire prescribed by the rules.
- Don't stop or transit under or near suspending unloadings;keep a proper distance.
- For the machinery movement employ means of lifting whose brought is suitable the load to be lifted.
- Opportunely interdict the zone to not authorized staff to operations of machinery unloading.
- The unloading and movement zone has to be free from obstacles that can constitute danger for people or things.
- For the lifting hook the machinery with ropes of suitable course,using the four holes(C.1)predisposed on the superior part of the machinery.
- Regulate the length of the ropes until get a horizontal lifting.
- Avoid oscillations,tears and abnormal solitations.
- For every move it is necessary lift the machinery,it is absolutely forbidden trai the machinery.
- The builder declines any responsibilities in case of damages caused by harness or lifting operations not similar to the prescriptions.


7.2 CONTROLS IMPLEMENTATION AT THE RECEPTION

The machinery is carefully checked during the posting. In case that, for unexpected causes, during the movement and transport phases, the components have suffered some damages, at the moment of the receipt it's necessary to effect a components checking.

Check the integrity of the followings components:

- Electric plan
- Command
- Emergency stop buttons
- Protection cover of calendering gears

Verify besides that the machinery has the identification name-plate of CE rule.

 <p>ATTENTION!</p>	<p>If during the controls anomalies are noticed to the various described components, it is forbidden to connect the machinery to external energy sources. Immediately tell the technical assistance service.</p>
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7.3 DISPOSAL OF PACKAGING MATERIALS

Once unpacked the machinery, the whole resultant materia (wood, plastics, etc) cannot be throw in the normal garbage, but it must be regularly be sell of following the law rules of your country.


7.4 STORAGE AND MAINTENANCE

In case of not starting, the machinery must have covered with an impermeable tarpauline avoiding the formation of condensates, stored in clean and dry place, with in a temperature among -10 and +50 C° and 80% maximum damp, distant from heat or vibration sources that could jeopardize the delicate components and the instruments on boards machinery. The metallic components not painted are covered with a veil of protective oil.

8.0 INSTALLATION

 <p>ATTENTION!</p>	<p>The installation phases, starting, testing must exclusively be performed by authorized and qualified staff.</p>
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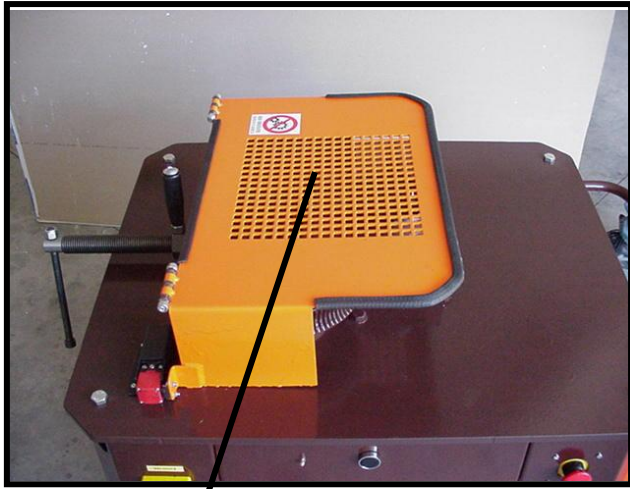
8.1 ELECTRIC CONNECTION

 <p>ATTENTION!</p>	<p>All the electric connection operations must be effected by a qualified electrician.</p> <p>The electric connection of the machinery must be effected following the indications. Checking that the supply power plant is in conformity with rules in force. Before effecting the connection, verify that the voltage for which the machinery is predisposed coincides with the electric line to which the machinery must be connected. Verify besides that all the components are entire.</p> <p>For the electric connection use a proper electric cable for the external and for wet environments, of suitable section, that HAS TO BE PUTTED DOWN AND NOT BE DAMAGED.</p> <p>It's forbidden to use damaged cables or cables with joints or tapes.</p>
--	--

The electric point must be provided of an interrupter tribolare provided of device of locked system, protection fuses and high sensibility interrupter with a threshold of intervention of 30mA.

For the electric connection use the plug on the machinery side.

For greater safety in the yard, firmly connect on the floor's conductor provided of cable-end to the screw predisposed on the machinery side



D.2



D.4



D.1

D.3

8.2 SENSE OF ROTATION CHECKING

Once performed the electric connection, proceed to the checking of the correct rotation sense, as following described:

A	Give tension through the general interrupter (D.1).
B	Turn the sense of rotation selector(D.4) on the right, and press the command pedal.
C	If the drawing rolls rotate in counterlockwise direction, the connection has correctly been effected, in contrary case it is necessary to reverse the selector.

NOTE: When the car is moved and connected to another electric plug, always effect the correct rotation sense checking, proceeding as above described.

8.3 SAFETY DEVICES CHECKING

Before beginning use the machinery, perform the functionality of the micro interrupter of the protection cover of the calendaring gears, and of the emergency stop buttons. In case of malfunction of such devices it is forbidden to use the machinery. Immediately contact the technical support service.

DEVICE		ACTION TO BE COMPLETED	EFFECT	RESTORATION
1	Micro interrupter protection cover	With the machinery at work, lift the protection cover(D.2)	Machinery stop	Put down the protection. To restart push the march pedal
2	Emergency stop buttons	With the machinery at work push the emergency stop buttons(D.3)	Machinery stop	Unlock the rotating buttons

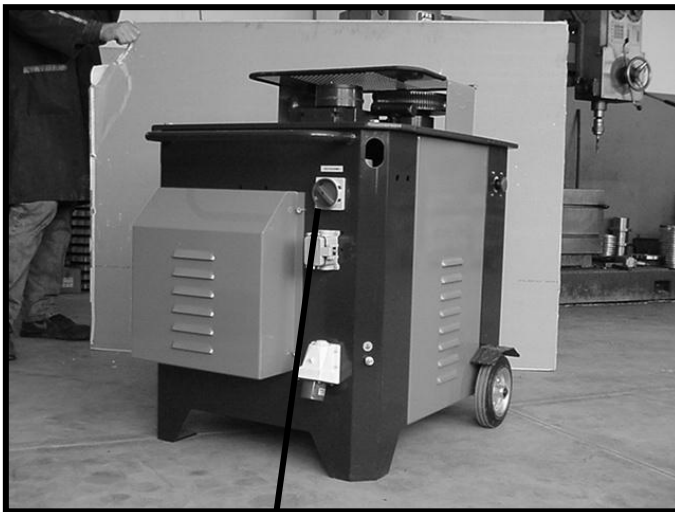


E.2

E.1

E.6

E.3



E.4



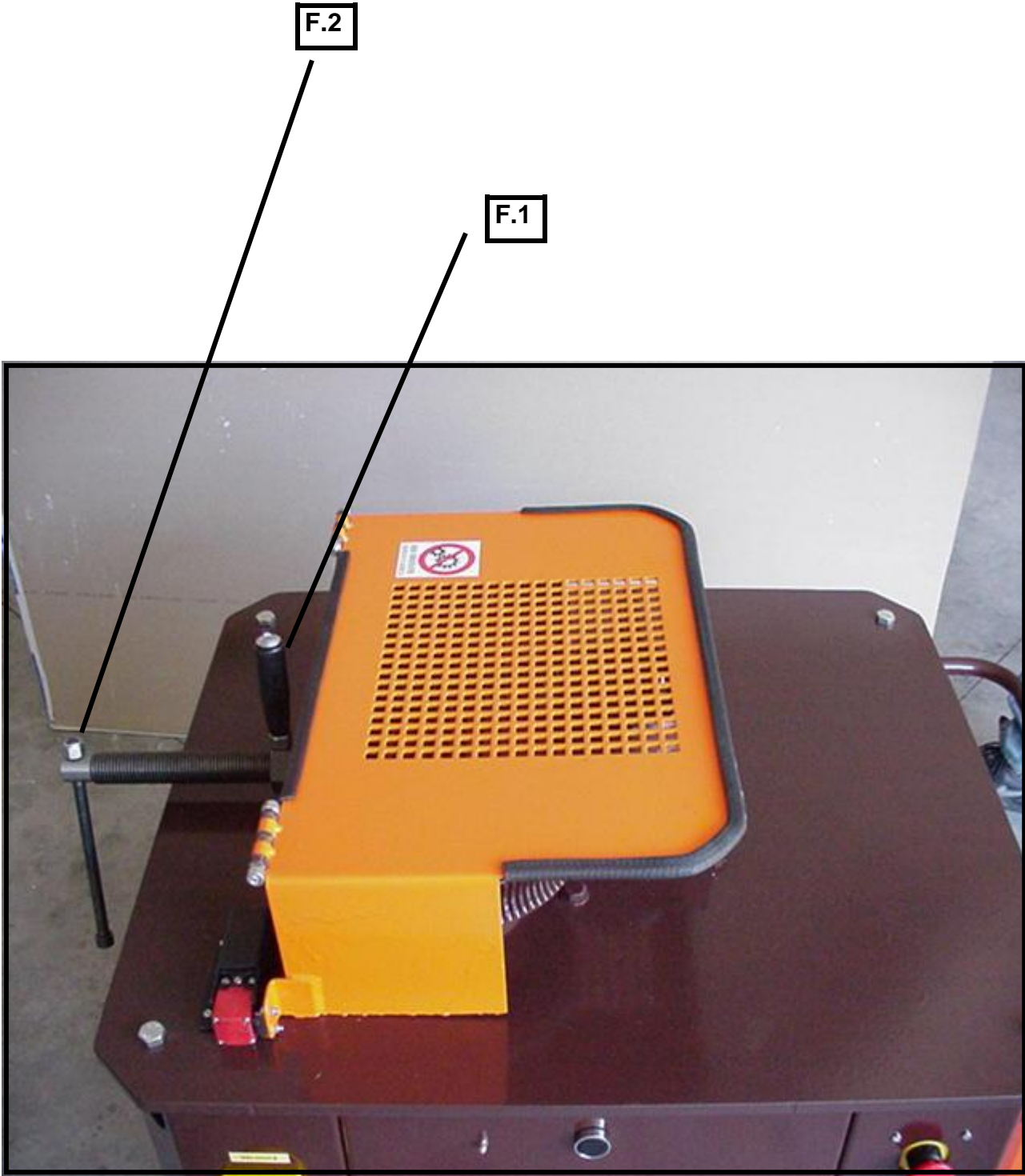
E.5

9.0 USE

9.1 COMMANDS

Machinery commands are brought with the relative functions.

COMMAND	FUNCTION
□	General interrupter(E.1)
	3 position selector for the choice of calendering speed - Left: slow - Center: no speed - Right: fast (E.2)
	Emergency stop buttons (E.3)
	3 position selector for the choice of rotation sense -Left: counterclockwise rotation sense -Center: no rotation -Right: hourly sense rotation (E.4)
	Command pedal to maintained action (E.5)
	Restoration operation buttons for an emergency (E.6)



9.2 REGULATIONS

9.2.1 REGULATION SCREW

The register screw (F.2)it has the function to approach or to geet the further the idle roll in comparison to the training rolls ,determinating the calendering radius.

It is endowed with a lever(F.1)to stop it in the desidered position.

9.2.2 REGULATION ROLLS

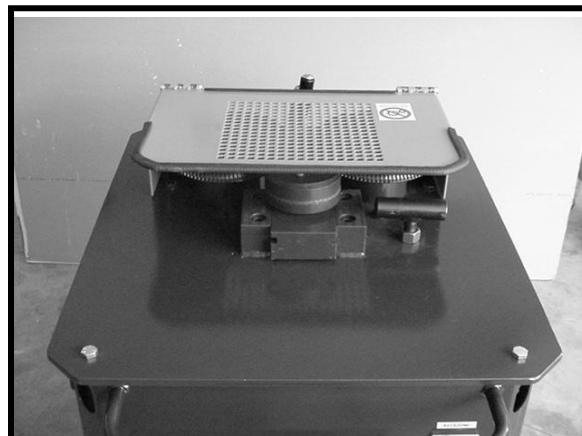
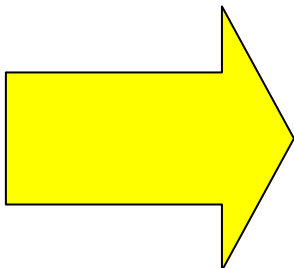
The regulation roll is set in the exit zone of the iron,it has the function to drive the bar at work maintaining it to the center of the drawing rolls.

It is normally regulated to the same height,while lifting the regulation roll in exit is possible to the get the calendering spiral.

9.3 OPERATOR POSITION

Looking at the machinery,the correct verse of the job is from left to right.
The position of the operator has to be in point pointed out by the arrow,and the introduction of the material has to be pointed out by the arrow.

In the operation to the diameter and of the length of the bar it can be necessary to foresee a support for the bar in exit,or the help of an other operator.



9.4 MACHINERY STARTING

9.4.1 PRELIMINARY CONTROLS

Before using the machinery perform the following operations and preliminary controls:

A	Verify that the surrounding zone the machinery is free
B	Verify if it is necessary to predispose a support for the bar in exit
C	Start the general interrupter and check the correct operation of the safety devices(see paragraph "Safety devices checking)


9.4.2 STARTING

A	Rotate the rotation sense selector toward right,checking the correct rotation sense
B	For performing the calendering,press the pedal and maintain pressed it for all the calendering cycle.If thepedal is released the machinery stop it.Pressing again the machinery starts again from the point in which was stopped

9.5 MACHINERY STOP

At the end of job,remove tension bringing to "O" the general interrupter.

9.6 REACTIVATION AFTER A FORCED INTERRUPTION

ATTENTION! 	Before restoring the machinery operation checking that the emergency situation has been eliminated and that the machinery is under conditions to be able to take back the work.
--	--

In case of forced interruption,following tension net lack or the emergency intervention,for the correct restoration process as following described:

A	Unlock the emergency button or attend the return of the electric energy
B	Push the pedal.The machinery continues the interrupted work

10.0 OPERATIONAL PRACTICES

10.1 EXECUTION OF CIRCLE ARCS

In the bar diameter operation ,depart with an ampler ray and perform past gradually tightening the regulation screw up to the attainment of the bending ray desired.

In case of bending rays of small dimensions with round of elvated diameter ,the machinery can have difficulty to haul the material to the calendering beginning.Insofar perform past with ray as decreasing up to the attainment of the wanted bending.

10.2 EXECUTION OF CIRCLES

The procedure is the same one of the preceding paragraph.

10.3 EXECUTION OF SPIRALS

The roll of regulation must be positions in way that the calandrare material, both in entrance and in exit, supports correctly on the same.

During the execution of the spiral, the lever of I unhook it is it always supports to the clash.

11.0 MALFUNCTIONNING


SPOIL		CAUSE	ACTION
1	Pushing the pedal the rotation rolls don't work	Protection cover open	Checking that the protection cover is correctly closed
		Emergency button pressed	Checking that the emergency button is not pressed
2	The roll don't trail the bar	The bending radius too little for the diameter bar	Start the work with a wider bending
		The trailer rolls serration is wear and tear	Replace the trailer rolls
3	Pushing the general interrupter the machinery doesn't work?	Magneto-thermic interrupter disconnect	Connect the interrupter

12.0 RESIDUAL RISK

The machinery has been projected and built in relation of the rules in force, to guarantee a sure job for all the people that operate on the same machinery.

The operation principles of the machinery are such for which in some phases of job a situation of risk remains caused by the gears' movements, and to the staff it is in demand a particular attention to avoid danger situations.

The operator will have to check that the bars to be worked are of good quality and don't have superficial malformations, sharp terminal cuts and drivels that could hurt the hands or, entangling in the gloves, drag to the rolls.


 <p>ATTENTION!</p>	<p>During the phases of job the operator has to grasp the bar holding out the hands from the protected area by the protection of the gears.</p> <p>Remember that the same protection prevents the access to the dangerous zone exclusively from the high one and not from the sides.</p>
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THE OPERATOR HAS TO ADOPT SUITABLE INDIVIDUAL PROTECTION DEVICES, GLOVES AND SHOES RELATING TO ACCIDENTS.

13.0 MAINTENANCE

13.1 SAFETY PRESCRIPTIONS

It's forbidden to remove the machinery protections with the machinery in tension.

 <p>ATTENTION!</p>	<p>Before effecting any maintenance intervention, set the general interrupter on "O" and disconnect the supply cable from the electric energy source.</p>
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The competences for the dismantlement, the assemblage, the maintenance, must clearly be defined and observed.

Ordinary and extraordinary maintenance operations of the machinery must be effect only from authorized staff, qualified and trained. These people have to be informed in detail on the possible predictable dangers.

Big reparations must be perform only by the builder or from skilled workers.

To avert the danger of accidental starting, that could damage staff and the machinery, lock the general interrupter and to affix a warning name-plate with the wording: **"ATTENTION MACHINERY IN MAINTENANCE"**.

In case of substitution of malfunctioning components, always verify that the exchange is conformable to the foreseen technical characteristics.

Always use original exchanges; eventually contact the technical support service of the retailer or of the builder.

All the operations connected with the electric plant must be performed by qualified electrician.

The electric engine can develop temperatures high to 100°C. So it is necessary to adopt measures of protection against the contact. It's besides forbidden to lean components on these sensitive areas(ex. electric components).

After every maintenance intervention, reassemble the safety protections that have eventually been removed and verify their efficiency.

It's forbidden to oil or to fatten up the machinery in work.

It's forbidden to exclude the safety devices.

Finished the maintenance intervention, restore the electric connection to the supply line checking and observing things showing in paragraphs 8.1 - 8.2 - 8.3.

13.2 DISSECTION DEVICES FORESEEN

GENERAL INTERRUPTER

The general interrupter is set on the electric plan and, once setted on "0" it sections completely all gears and the electric circuits.

GENERAL INTERRUPTER BLOCK

The general interrupter is predisposed for block in position "0" with a padlock (not furnished).

ACCESS TO ELECTRIC PLAN

The access to electric plan is allowed, only with the general interrupter setted on "0", through a special key furnished.

13.3 PROGRAMMED MAINTENANCE CARD

ELEMENT		INTERVENTION INTERVALS		
		DAY	MONTH	YEAR
1	CLEANING	X		
2	SAFETIES CONTROL	X		
3	ROLLS' ROTATION SENSE	X		
4	ELECTRIC PLANT CONTROL			X

Table 5 maintenance card**13.4 PROGRAMMED MAINTENANCE OPERATIONS**

OPERATIONS		DESCRIPTION
1	CLEANING	Perform every day the machinery general cleaning keeping particular attention to the calendering zones.make free the zone of job removing possible unused iron pieces
2	SAFETIES CONTROL	Perform every day the check of good work of safety devices: -emergency buttons -Micro interrupter of coverture of calendering gears See par 8.3
3	ROTATION SENSE	Check every day the correct rotation sense of rolls,see par 8.2.
4	ELECTRIC PLANT CONTROL	Check every year the isolation of the electric plant and replace the defective elements.

13.5 LONG PERIOS STOP

If the car is inactive for long periods(over 2 month) effect some provisions,for an efficiency machinery:

- Clean the machinery
- Protect the metallic parts not painted with a veil of protective oil
- Protect the machinery with an impermeable tarpauline avoiding condensens.

In case of storage,enliven the machinery as showing in par 7.1

The disconnecting of the supply power line must be performed by qualified staff. Storage the machinery in a clean and dry place.

14.0 DISPOSAL**14.1 PRODUCTION REJECTS**

During the workmanship,it can be created some iron cinders that detach them from the surface

on the calendered bar.These cinders must be sell off following rules in force.

14.2 MACHINERY DEMOLITION



ATTENTION!

The demolition operation must be performed from authorized staff. Contact the technical support service.

In case of demolition of the machinery, all the components must be sold off in observance to rules in force.

In case of disposal, we recommend to submit the machinery to an authorized recovery society, that will sell off the machinery in the respect of rules in force.

For information in detail contact the ecology office of your country.

ENCLOSURES TECHNICAL:

- Electric schemes