

15-D0410
ELECTRO-MECHANICAL
SIEVE SHAKER



MANUALE DI ISTRUZIONI
INSTRUCTION MANUAL

Index

1. INTRODUCTION	1
1.1 Icons appearing in the manual	2
1.2 Manual revision history	3
1.3 Symbols used	4
1.4 Intended use and improper use	5
1.5 Safety information	6
1.6 Environmental risks and disposal	12
1.7 CE declaration	13
2. DESCRIPTION	14
2.1 Identification plate	15
2.2 Commands and controls	16
2.3 Technical specifications	17
3. INSTALLATION	18
3.1 Shipment	19
3.2 Unpacking and inspection	20
3.2.1 How to remove the equipment from the shipping crate	21
3.3 Positioning of the unit and space requirements	23
3.4 Assembling the headframe	25
3.5 Electrical requirements	30
3.6 Electrical connections	31
4. USE OF THE EQUIPMENT	32
4.1 Mounting the sieves	33
4.2 Switching on the equipment and use	38
4.3 Stopping the cycle via the Emergency button	40
4.4 Switching off the unit	41
5. MAINTENANCE	42
5.1 Operator's preventive maintenance	44
5.1.1 Grease the ball of the base plate	45
5.1.2 Lubricate the block of the spherical seat	46
5.2 Authorized service engineer maintenance actions	47
5.2.1 Checking the vertical movement of the sieve plate	48
5.2.2 Checking the play of the upper seating	52

6. DIAGNOSTICS & TROUBLESHOOTING	53
6.1 Troubleshooting	54
7. SPARE PARTS	55
8. SCHEMATICS AND DRAWINGS	59

This instruction manual is an integral part of the machine and should be read before using the machine and be safely kept for future reference.

CONTROLS reserves all rights of this manual, no part or whole can be copied without the written permission of **CONTROLS**.

The proper use of this machine must be strictly adhered to, any other use must be considered as incorrect.

The manufacturer cannot be held responsible for damage caused by incorrect use of the machine.

The machine must not be tampered with for any reason. In case of tampering, the manufacturer declines any responsibility of functioning and safety of the machine.

This Manual is published by **CONTROLS**.

CONTROLS reserves the right to update its manuals without notification in order to correct possible typing errors, mistakes, updating of information and/or updating of programs and/or accessories.

Such changes will be inserted in the latest edition of the current manual.

This present in English is the original version of the manual. Printed in Italy

1. INTRODUCTION



NOTE:

The present manual is updated for the product it is sold with in order to grant an adequate reference in operating and maintaining the equipment.

The manual may not reflect changes to the product not impacting service operations.

This electro-mechanical sieve shaker features efficient sieving action, heavy duty and simple design.

Main features of the equipment are:

- Double-effect electro-mechanical sieve;
- Suitable for up to 12 sieves 200/203 mm dia. or 12 sieves 250 mm dia or 10 sieves 300/315 mm dia;
- Ergonomic and fast clamping system;
- Timer function included.

The series of sieves is held at the top by a rubber spherical seat and rotates eccentrically at the bottom ensuring uniform shaking of the sample across the whole surface of the sieves.

Upon each revolution, a simple mechanical mechanism imparts hits at the base of the sieves so as to re-set the sample material on the sieves and guarantee a very efficient overall sieving action.

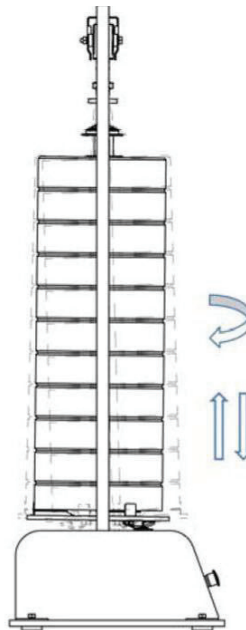
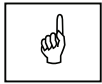


Fig. 1-1

Please read this manual thoroughly before you start using the equipment.

1.1 Icons appearing in the manual



This icon indicates a NOTE; please read thoroughly the items marked by this picture..



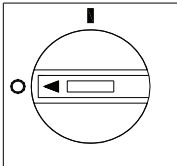





This icon indicates a WARNING message; the items marked by this icon refer to the safety aspects of the operator and/or of the service engineer.

1.2 Manual revision history

Revision/Date	Change description
Rev. 1 27 October 2010	First manual release

1.3 Symbols used

In this manual and on the equipment itself, apart from the symbols indicated on the control panel, also the following icons are used:

Symbol	Description
	<p>Mains switch: O = device not connected to the mains line I = device connected to the mains line</p>
	<p>Emergency stop switch</p>
	<p>Dangerous voltage</p>
	<p>Hand injury</p>
	<p>Warning noisy area</p>
	<p>Conformity to the CE Directive</p>

1.4 Intended use and improper use

The machine can only be used for sieve analysis of aggregates using sieves of the specified diameter and with maximum quantity of aggregates indicated, in order to obtain the particle size distribution.

The equipment is designed to be used by a single operator, who is in charge of loading-unloading the sieves and the material to sieve.

During normal operation the working area of the equipment is the front side where the operator's controls and the display are located.

The operator is responsible for switching on the machine, carrying out the operations for which the machine was designed and manufactured, switching off the machine at the end of the test or in the case of an emergency.

The operator must be trained on the correct use of the machine and the relative safety aspects of its use.

The machine should be used following the procedures described in this manual.

Never use the machine for reasons other than those for which it was designed and manufactured. Any other use of the machine is to be considered improper, not foreseen and hence dangerous.

CONTROLS will not be responsible for improper use of the machine.

1.5 Safety information



WARNING:
Please read this chapter thoroughly.

CONTROLS designs and builds its devices complying with the related safety requirements; furthermore it supplies all information necessary for correct use and the warnings related to use of the equipment.

CONTROLS will not to be held responsible for:

- use of the equipment different than the intended use,
- damages to the unit, to the operator, caused both by installation and maintenance procedures different than those described in this manual supplied with the unit, and by wrong operations,
- mechanical and/or electrical modifications performed during and after the installation, different than those described in this manual

The unit is not designed to be used in an explosive atmosphere.

Any technical intervention must only be performed by qualified technicians authorized by CONTROLS.

Only authorised personnel can remove the covers and/or have access to the components under voltage.

Maintenance and service activities can only be performed by skilled authorized technical personnel that have been properly trained on the residual risks of the equipment.

During normal use, if the operator detects irregularities or damages, he/she should immediately inform the authorized technical personnel.

It is responsibility of the purchaser to make sure that the operators have been properly instructed concerning the safety issues and the residual risks related to the equipment.

The machine is equipped with the following devices to limit the residual risks in using it:

- Emergency button that allows stopping the machine in case anomalous conditions that may jeopardize the operator safety are encountered;



Fig. 1-1

Emergency button

The following table lists those parts of the equipment that may present some residual risks for the safety of the personnel if the instructions provided in this manual are not duly followed.

Personnel	Area with residual risks
Operator	Area between the external frame of the headframe and the shafts of the sieves clamping mechanism during the functioning of the equipment; keep the hands away from this area.
	Noise generated by the material contained into the sieves during the functioning of the equipment; use proper hearing protection devices (e.g. ear plugs or ear muffs).
Technical personnel	Above listed areas
	Areas around compartments closed by removable panels
	Areas around compartments that contain electrical parts
	For continued fire protection, replace fuses with same type and rating. Also, in case of failure, components may only be replaced by using original spare parts. It is in the responsibility of the purchaser to insure that fire prevention policies are properly implemented according to the CE provisions.
Personnel responsible of transportation and moving of the equipment	Raising and moving of the equipment from the wooden crate must be performed by people properly trained and equipped with suitable personal protection devices (e.g. gloves, helmet, etc.). Failure to follow the instructions above may endanger the personnel involved.

Here follows a list of all WARNINGS present in the manual; please see relevant chapters for full details on each related safety issue.



WARNING:

When operating with the covers open/removed and the unit is attached to the mains line, care must be taken as high voltage is present in some parts of the unit (e.g. electrical panel). Only authorized and qualified service technicians are allowed to open /remove covers.



WARNING:

All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.



WARNING:

Raising and moving of the equipment must be performed by people properly trained and equipped with suitable personal protection devices (e.g. gloves, helmet, etc.). Failure to follow the instructions above may endanger the personnel involved.



WARNING:

The wooden crate is high; be careful in balancing while raising it.



WARNING:

If the instructions to remove the equipment from the shipping box are not carefully followed, damages to the equipment cabinet may result. This will void the warranty terms of the equipment.



WARNING:

Do not stand under suspended loads



WARNING:

Considering the weight of the equipment and the footprint (see chapter 2.3), check the maximum allowed floor load before installation.

**WARNING:**

Make sure to use proper fixing bolts according to the type of floor of the installation place. CONTROLS cannot be considered responsible in case of injuries to the operator or damages to the equipment if the above instructions are not duly followed.

**WARNING:**

If the equipment is brought from a cold environment into a heated room, condensation on and in the unit can constitute a danger and lead to malfunctioning of the unit when started. Wait to connect and operate the unit until it is at room temperature.

**WARNING:**

The general grounding must comply with the rules in force; a wrong quality of the grounding could be dangerous for the operator's safety and cause bad function of the electrical devices.

**WARNING:**

Covers/doors can only be removed/opened by maintenance people, by using relevant tools/keys. These tools and keys are for use by maintenance personnel only. Never leave the tools and keys attached to the unit as this may endanger operator safety.

After performing maintenance/repair, make sure that all covers/doors are properly closed and locked.

**WARNING:**

Do not use the sieve shaker when empty.
Ensure that the sieves are correctly placed and blocked in position on the shaker.

**WARNING:**

The noise level will vary depending upon the material being sieved. In some cases, sieving dry aggregates, the noise level may be disturbing; it is therefore recommended the use of personal protection devices (e.g. ear plugs or ear muffs).

**WARNING:**

In the **CONTINUOUS** mode the sieve shaker will continue to function until stopped manually (by pressing **STOP**). We recommend that this mode is only used with the operator present and in any case do not use the machine for more than 30 minutes of continuous use. If longer sieving times are necessary, it is necessary to check the correct blockage of the sieves after 30 minutes of sieving action. (see chapter 4.1).



WARNING:

Failing to perform the recommended maintenance actions or maintenance performed by unauthorized people can void the warranty.

CONTROLS will not be responsible for maintenance and service actions performed by unauthorized people.



WARNING:

Before opening/removing the covers, disconnect the mains supply to the device and wait at least 5 minutes.



WARNING:

For continued fire protection, replace fuses with same type and rating. Also, in case of failure, components may only be replaced by using original spare parts. It is in the responsibility of the purchaser to ensure that fire prevention policies are properly implemented according to the CE provisions.



WARNING:

Avoid pouring water, even accidentally, or other liquids into the device, as this could cause short circuits. Before cleaning the device, disconnect it from the mains line.



WARNING:

Refer to qualified service organization authorized by CONTROLS to carry out the maintenance actions described in the chapter “Authorized service engineer maintenance action”. CONTROLS has not to be held responsible for damages to the equipment and/or injuries to personnel in case the above is not strictly followed.

1.6 Environmental risks and disposal



INFORMATION TO THE OWNER OF THE EQUIPMENT

The above symbol, when attached to the equipment or to the relevant packaging, indicates that the product must be disposed of separately from other rubbish at the end of its useful life.

Therefore, at the end of its useful life, the owner should dispose of the product in a suitable collection point for electrical and electronic products provided by the local authorities.

The correct disposal of this product and the subsequent treatment encourages the manufacture of products using re-cycled materials and limits the environmental impact of the product caused by improper disposal.

Improper disposal of the product is subject to penalties as foreseen by the local regulations.

1.7 CE declaration

This page shows a copy of the CE declaration. The original is supplied with the equipment as a separate document.

DECLARATION OF CONFORMITY DICHIARAZIONE DI CONFORMITÀ Directive 2006/42/CE, Annex II, sub A) - Direttiva 2006/42/CE, Allegato II, parte A)		CE
Manufacturer Fabbricante	CONTROLS srl	
Address Indirizzo	Via Aosta 6, 20063 Cernusco s/N, (MI) Italy	
	Herewith declares that the machine <i>Dichiara che la macchina</i>	
Model Modello	15 - D0410	
Serial number Matricola	Example	
Description Descrizione	Electromechanic sieve shaker for sieves up to 315 mm dia. <i>Setacciatore elettromeccanico per setacci fino a 315 mm dia.</i>	
is in conformity with the provisions of the following EC directives <i>è conforme a quanto previsto dalle seguenti direttive CE</i>		
✓ 2006/42/CE (Machinery Directive - Direttiva macchine)		
✓ 2006/95/CE (Low Voltage Directive - Direttiva Bassa Tensione)		
✓ 2004/108/CE (Electromagnetic Compatibility Directive - Direttiva Compatibilità Elettromagnetica)		
Place and date of issue Luogo e data di emissione	Nicola Lezzerini Technical Director – Person authorized to compile the technical file <i>Direttore tecnico – Persona autorizzata alla costituzione del fascicolo tecnico</i>	
<u>Cernusco S/n, 25-10-10</u>	 Signature Firma	
CONTROLS s.r.l. Via Aosta 6, I-20063 Cernusco s/N (MI) Tel. +39- 02921841 fax +39- 0292103333 e-mail: controls@controls.it www.controls.it		

2. DESCRIPTION

Refer to the following figures for main components identification.

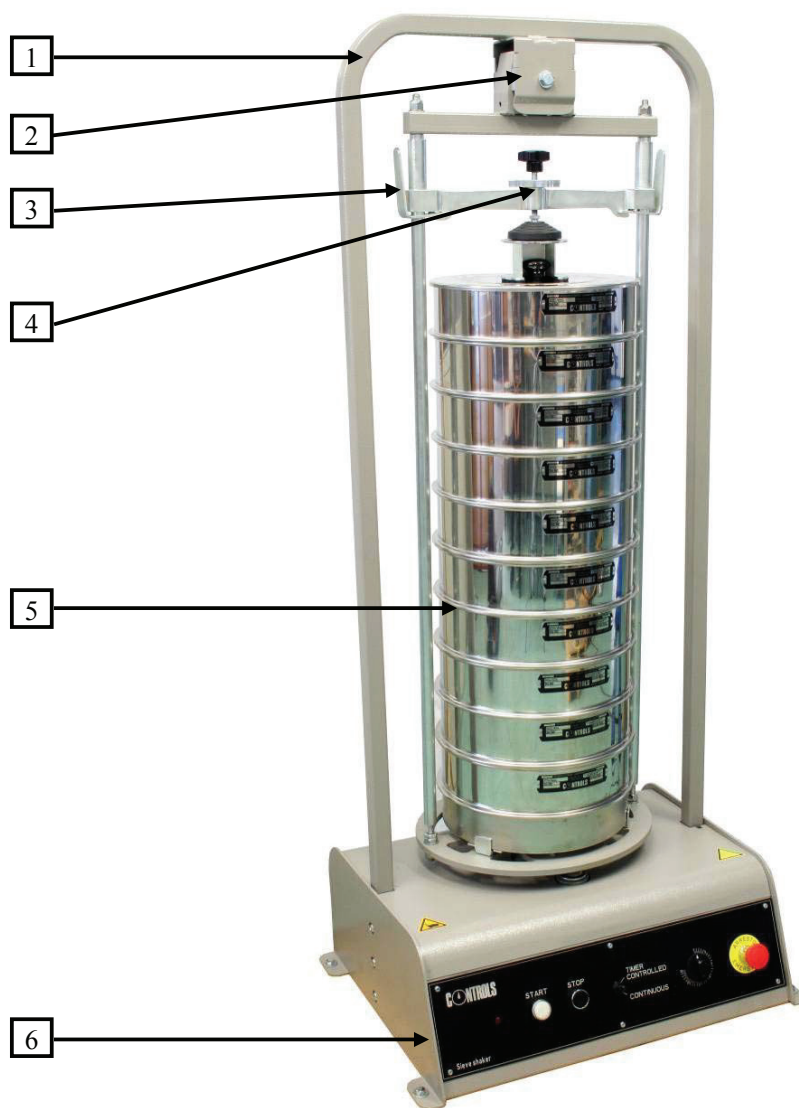


Fig. 2-1

Ref.	Description
1	External frame
2	Rubber spherical seat
3	Fast clamping system for sieves
4	Disk for fine clamping of sieves
5	Sieves
6	Command panel

2.1 Identification plate

The identification plate is located on the rear side of the control panel, near the power cable socket.

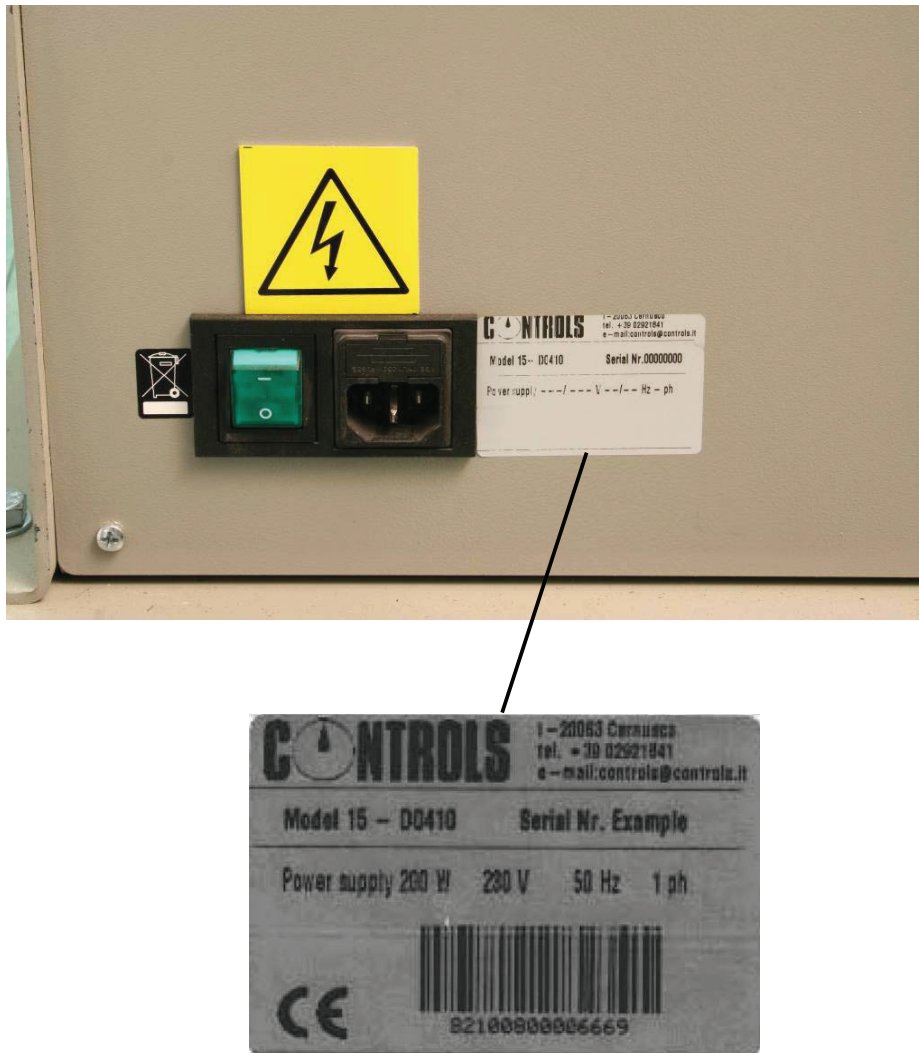


Fig. 2-2

2.2 Commands and controls

This chapter describes the commands and controls of the equipment.

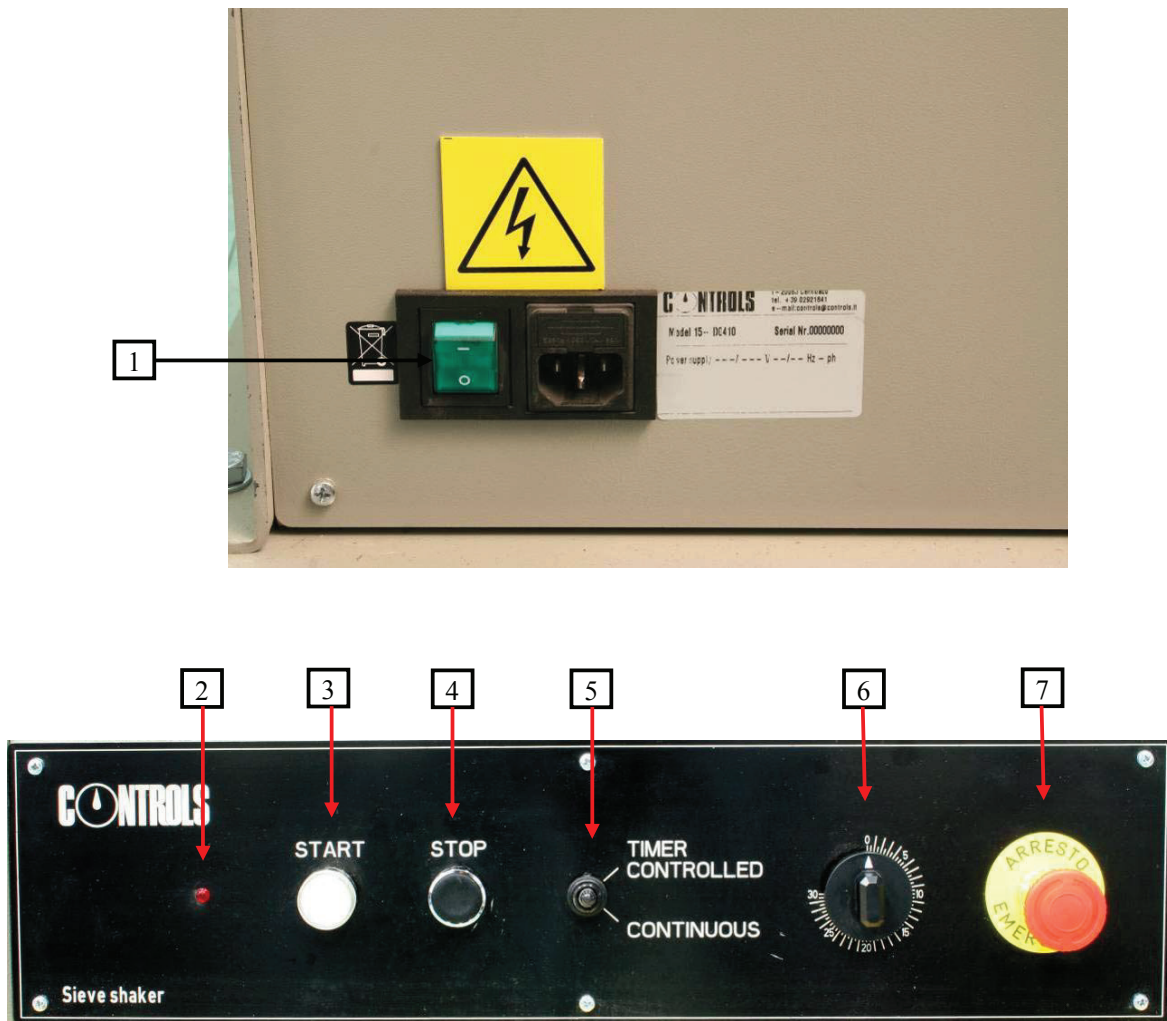


Fig. 2-3

Ref.	Description
1	Mains switch with pilot light (on rear panel)
2	POWER ON pilot light
3	START push button with lamp
4	STOP push button
5	Functioning mode selector
6	Timer knob
7	Emergency button

2.3 Technical specifications

Main characteristics			
Product	Electro-mechanical sieve shaker		
Manufacturer	CONTROLS Cernusco s/N (MI) Italy		
Product code 230VAC/50Hz version	15-D0410		
Product code 220VAC/60Hz version	15-D0410/Y		
Product code 110VAC/60Hz version	15-D0410/Z		
Sieves diameter	Dia. 200/203 mm	Dia. 250 mm	Dia. 300/315 mm
Max. number of sieves	N°12 sieves + bottom + cover	N°12 sieves + bottom + cover	N°10 sieves + bottom + cover
Max. weight of material to sieve	4,5Kg		
Single-phase line voltage	110VAC/230VAC +6%, -10%		
Frequency	50/60 Hz		
Power	200 W		
Method of power entry	Power cable with plug		
Next weight (approx.)	60 Kg		
Overall dimensions	660 x 500 x 1510 mm		

Environmental conditions	
Operating temperature	+ 10 ÷ + 40°C
Operating humidity	≤ 50%RH @ 40°C

3. INSTALLATION

The instructions indicated in this chapter enable you to perform a correct installation and interfacing in order to grant a regular operation of the equipment. Included are initial inspection procedure, power requirements and instructions for installing the unit.

The information in this chapter is intended for authorized service-trained personnel.

CONTROLS can supply the assistance and the necessary technical advice for pre-installation, all the pre-installation phases are at the purchaser's charge and must be performed complying with the indications given below.



WARNING:

When operating with the covers open/removed and the unit is attached to the mains line, care must be taken as high voltage is present in some parts of the unit (e.g. electrical panel). Only authorized and qualified service technicians are allowed to open /remove covers.



WARNING:

All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.

3.1 Shipment

The equipment is normally shipped in a wooden crate having the following dimensions and gross weight depending on the model:

Model	Gross weight	Overall dimensions	Minimum fork lift length
D0410-/Y-/Z	150 Kg	900x700x1800 mm	1200 mm

Use a proper fork lift with minimum fork length as above indicated to raise and move the wooden crate (see figure below).



Fig. 3-1



WARNING:

Raising and moving of the equipment must be performed by people properly trained and equipped with suitable personal protection devices (e.g. gloves, helmet, etc.). Failure to follow the instructions above may endanger the personnel involved.



WARNING:

The wooden crate is high; be careful in balancing while raising it.

3.2 Unpacking and inspection

The unit was carefully checked both mechanically and electrically before shipment; it should be inspected for any damage that may have occurred in transit.

**NOTE:**

If the shipping container or packaging material is damaged, it should be kept until the unit has been mechanically and electrically checked.

If there is mechanical damage and/or the contents are incomplete (see the shipping list), please notify the local CONTROLS representative.

If the shipping container is damaged or shows sign of stress, notify the carrier as well as the CONTROLS representative. Save the shipping material for carrier's inspection. Also take some pictures.

Here follows the procedure for the unpacking of the equipment.

3.2.1 How to remove the equipment from the shipping crate

The following table shows the net weight of the different models of the equipment:

Model	Net weight
D0410-/Y-/Z	60 Kg

Follow the instructions below to remove it from the shipping crate:

1. Inspect shipping crate (see NOTES above);
2. Open the shipping crate;
3. Cut and remove vacuum bag (if present) to expose the equipment;
4. If the equipment has been shipped disassembled, first carry out the assembling as described in chapter 3.4, afterward it will be possible to lift it by using the upper point of the external frame as lifting point with ropes (see Fig. 3-2).

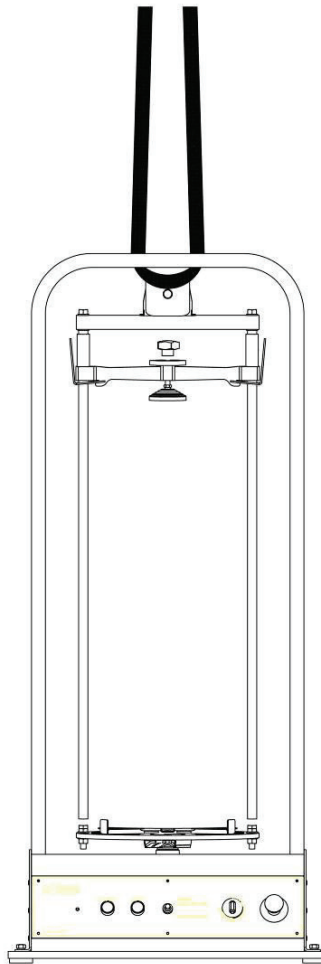


Fig. 3-2

**WARNING:**

If the instructions to remove the equipment from the shipping box are not carefully followed, damages to the equipment cabinet may result. This will void the warranty terms of the equipment.

**WARNING:**

Raising and moving of the equipment must be performed by people properly trained and equipped with suitable personal protection devices (e.g. gloves, helmet, etc.). Failure to follow the instructions above may endanger the personnel involved.

**WARNING:**

Do not stand under suspended loads

5. Before powering on the unit, check for loose connections of cables inside the equipment.

3.3 Positioning of the unit and space requirements



WARNING:

Considering the weight of the equipment and the footprint (see chapter 2.3), check the maximum allowed floor load before installation.

The unit must be placed on a flat and level surface.

The area around the equipment must be kept free from obstacles and from substances that may cause sliding of the personnel.

It is responsibility of the purchaser to provide an installation place with adequate lighting.

Parts used to build the machine and electrical/electronics component are fire-proof. It is anyway the responsibility of the owner of the equipment to make sure that the installation place is equipped with proper fire extinguishing systems and that the operators have been instructed on the relevant procedures.

Use a proper mean to bring the unit to the installation place.

Place the unit in its final location, taking into account the free space around the unit: the equipment requires at least 100 cm of clearance on the front and at least 50 cm on the 3 sides for maintenance and service purposes.

The unit requires adequate air circulation around it to assure proper cooling of the internal devices.

If the unit is not equipped with the optional base plate (code D0410/1) it must be fixed to the floor using expandable fixing bolts as shown in fig. below.

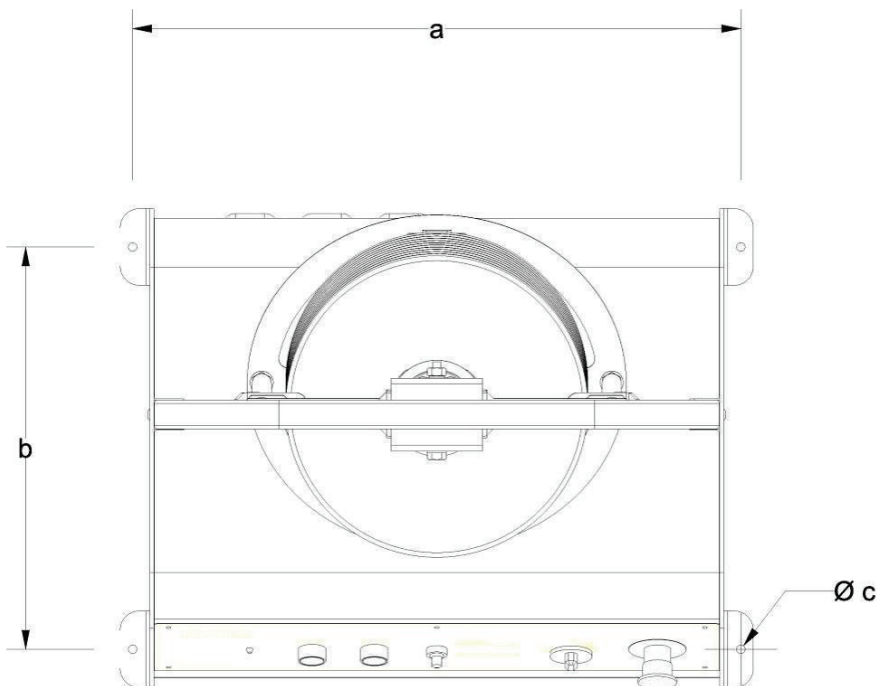


Fig. 3-3

Model	a mm	b mm	c mm
D0410	634	420	11



WARNING:

Make sure to use proper fixing bolts according to the type of floor of the installation place. CONTROLS cannot be considered responsible in case of injuries to the operator or damages to the equipment if the above instructions are not duly followed.

If instead the unit was purchased with the optional base plate (code D0410/1, overall size 530 x 690 mm, weight 43 Kg) the latter must be fixed underneath the equipment by means of 4 M10 bolts.



WARNING:

If the equipment is brought from a cold environment into a heated room, condensation on and in the unit can constitute a danger and lead to malfunctioning of the unit when started. Wait to connect and operate the unit until it is at room temperature.

3.4 Assembling the headframe

The following procedure should be followed if the apparatus has been shipped with the frame dismounted from the base. If the frame is already mounted to the base proceed to chapter 3.5.

1. Remove the headframe from the box;



Fig. 3-4

2. Place the headframe as close as possible to the base and then remove the ties;



Fig. 3-5

3. Check that the pins on the frame shown below are in the correct position to allow the correct assembly and then slide the frame into the two square holes in the base;

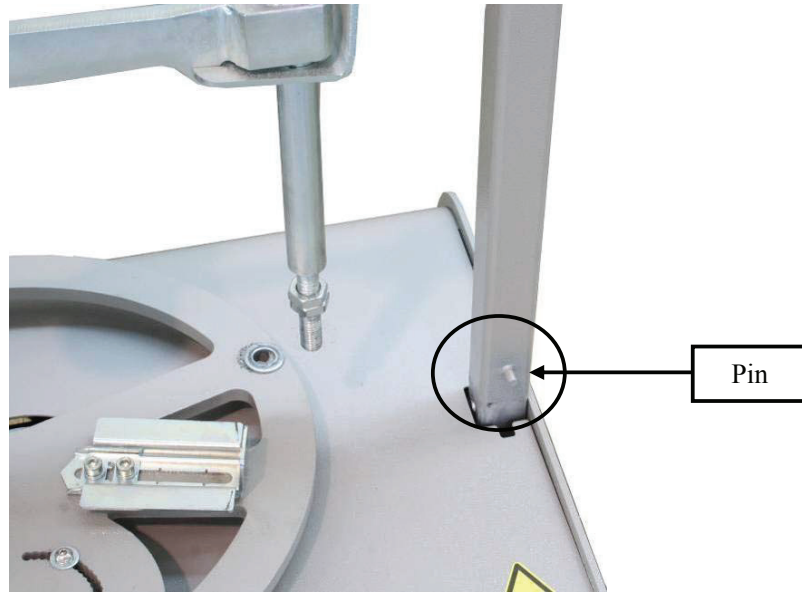


Fig. 3-6

4. Insert the two sides of the frame simultaneously into the base to the full depth;



Fig. 3-7

5. With the headframe completely inserted, align the two threaded rods with the holes in the sieve plate, placing a washer between the nut and the plate on each rod as shown below;



Fig. 3-8

6. Now place a washer and self locking nut on the rods, under the plate, as shown below;

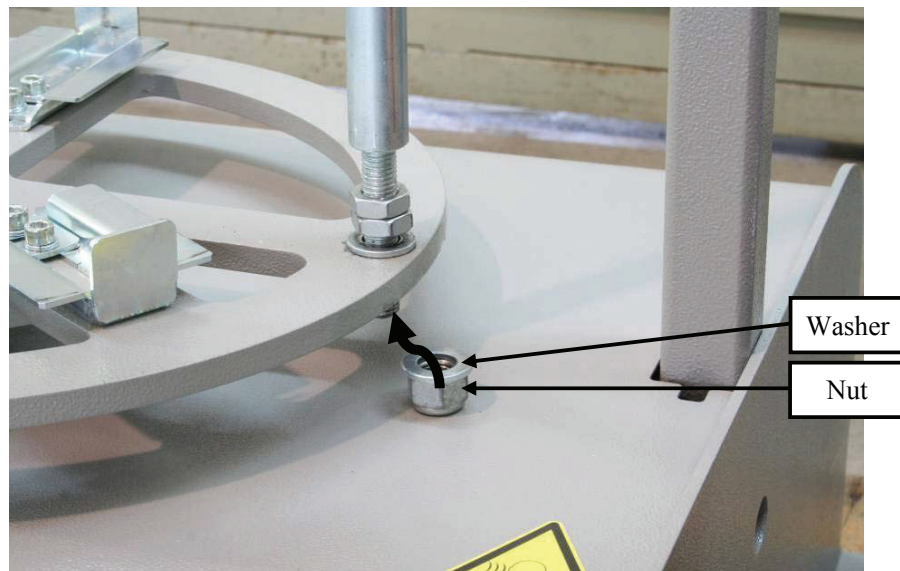


Fig. 3-9

7. Repeat the same procedure on both rods;

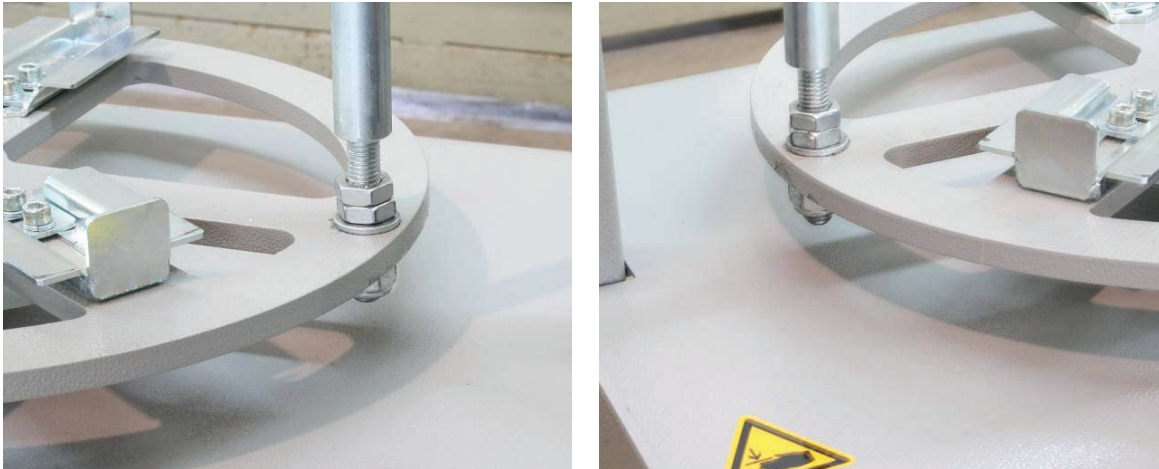


Fig. 3-10

8. Use the 19 mm spanner supplied to tighten the self locking nuts until the plate is firmly held to the rods;

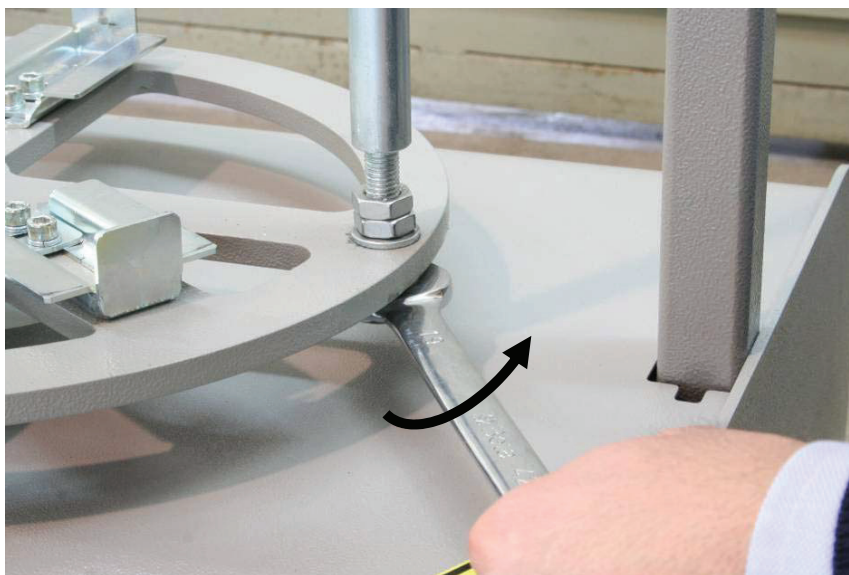


Fig. 3-11

9. Repeat the same operation on the other rod;

- Using the 5 mm Allen key supplied, insert the frame fixing bolts on both sides of the machine;



Fig. 3-12



Fig. 3-13

- If not removed before, lift the machine from the pallet following the procedure given in chapter 3.2.1.

3.5 Electrical requirements

The next table shows the electrical specifications of the equipment:

Parameter	Code D0410	Code D0410/Y	Code D0410/Z
Mono phase voltage	230VAC +6%, -10%	220VAC +6%, -10%	110VAC +6%, -10%
Frequency	50Hz	60Hz	60Hz
Maximum power	200 W	200 W	200 W

The equipment shall be connected to a proper earth system, the efficiency of which shall be checked by qualified personnel. Earth shall be via the power cable, as specified above.

**WARNING:**

The general grounding must comply with the rules in force; a wrong quality of the grounding could be dangerous for the operator's safety and cause bad function of the electrical devices.

The power supply line shall be equipped with a safety device (breaker and ground fault switch) properly sized with respect to the electrical specifications provided above.

3.6 Electrical connections

Connect the mains cable to a suitable single-phase socket/panel (see chapter 3.5).

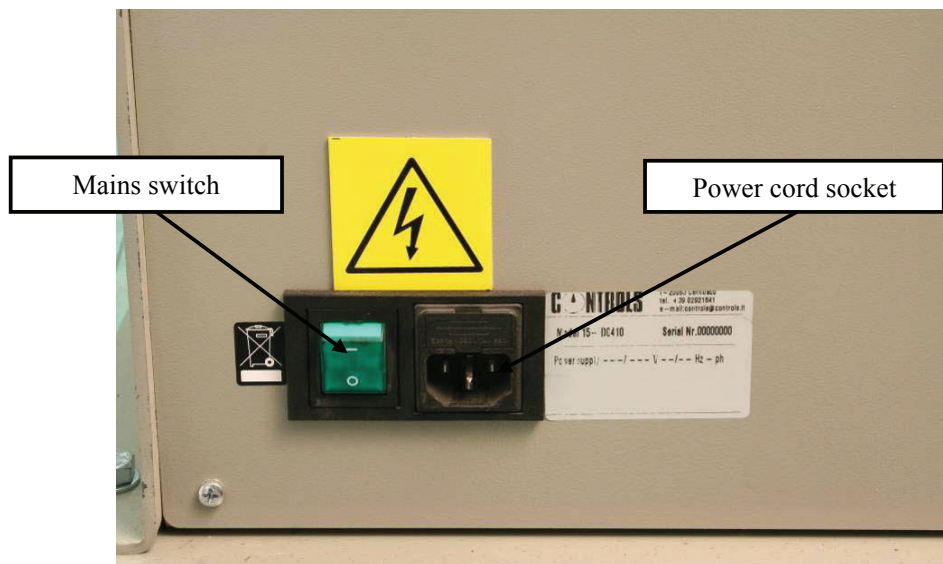


Fig. 3-14

Refer to chapter 4.2 to turn ON the unit.

4. USE OF THE EQUIPMENT

This chapter describes the operator's interface and the execution of a test.



WARNING:

All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.



WARNING:

Covers/doors can only be removed/opened by maintenance people, by using relevant tools/keys. These tools and keys are for use by maintenance personnel only. Never leave the tools and keys attached to the unit as this may endanger operator safety.

After performing maintenance/repair, make sure that all covers/doors are properly closed and locked.

4.1 Mounting the sieves

1. Adjust the slides as per the diameter of the sieves to be used, moving them the same distance from the centre of the plate; use a 5 mm Allen key to loosen the bolts that fix the slides;

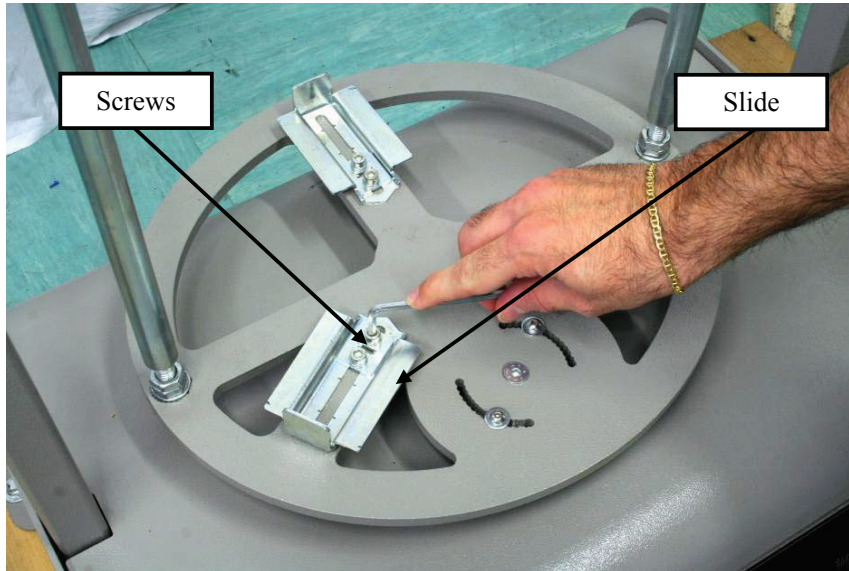


Fig. 4-1



Fig. 4-2

2. To help in the correct adjustment of the slides on the sieve plate, between the plate and the slides some reference notches have been made and these should be the same for all three slides;

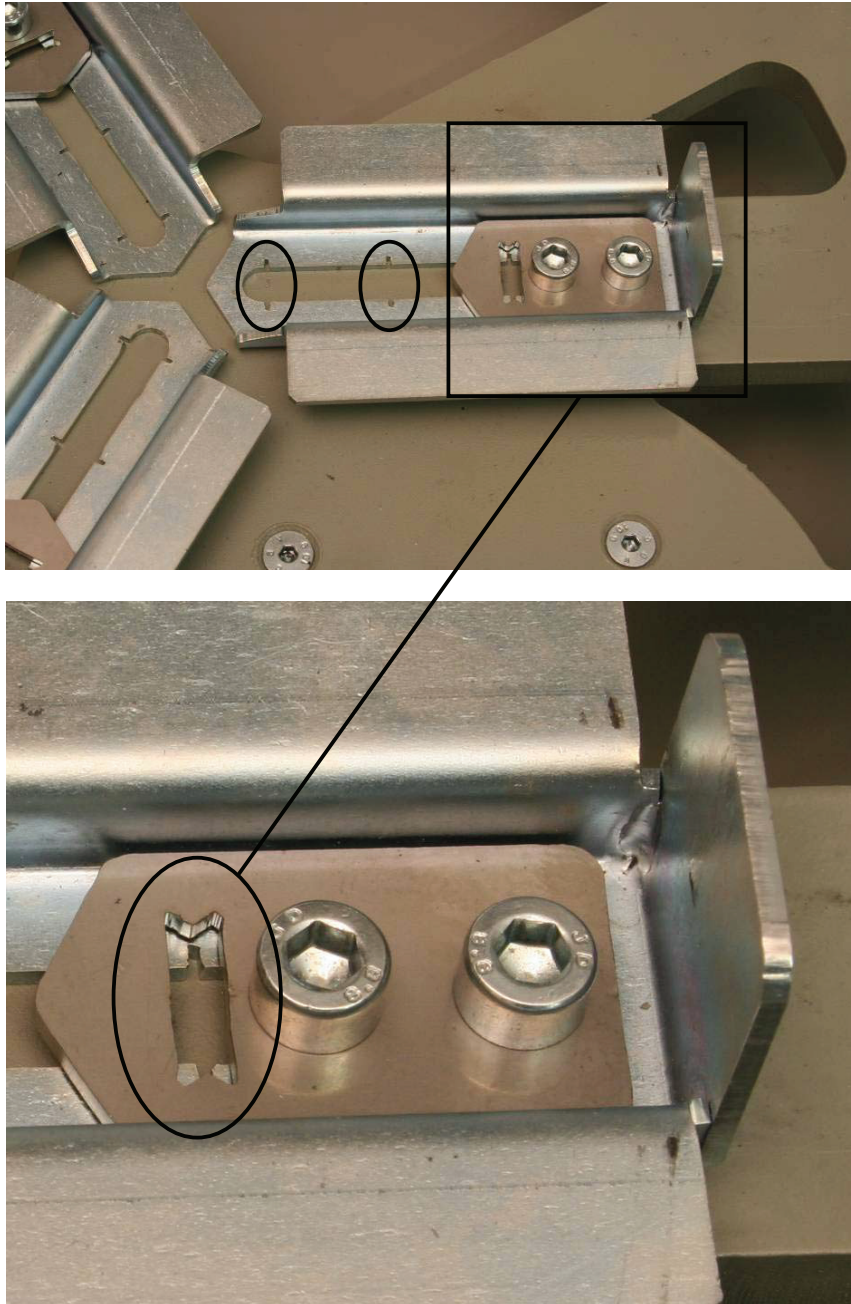


Fig. 4-3

3. When the slides are correctly positioned, tighten the blocking bolts;

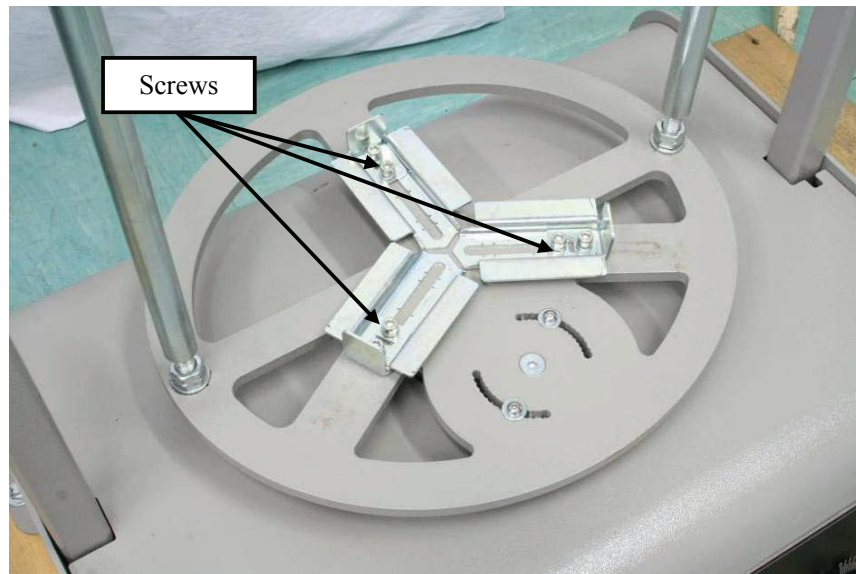


Fig. 4-4

4. Move the upper blocking rod to its upper position by pressing the two side levers simultaneously;

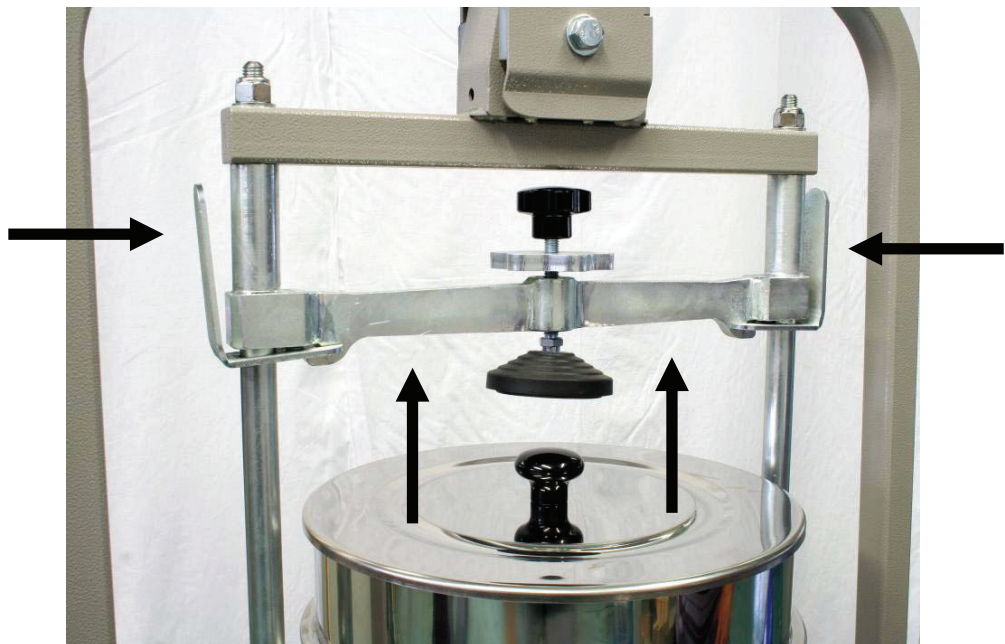


Fig. 4-5

5. Insert the pile of sieves in the correct sequence (largest opening at the top, smallest at the bottom) on the sieve plate using at least enough sieves to ensure their blockage in the sieve shaker;



Fig. 4-6

6. The material to be examined should be placed in the upper sieve and closed with the sieve cover;
7. If the sieve cover has a handle, use the adaptor flange so as to block the sieves in the shaker;

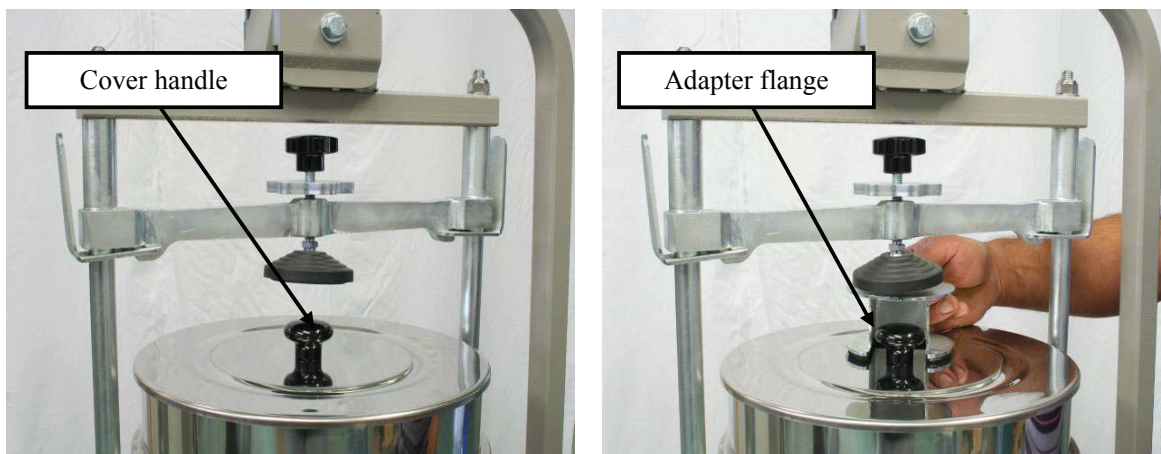


Fig. 4-7

8. Adjust the central knob to block the sieve pile;



Fig. 4-8

9. Then turn the flange against the cross beam so as to lock the central knob.



Fig. 4-9

4.2 Switching on the equipment and use

1. Turn ON the unit by means of its mains switch located on the rear panel of the equipment; the switch itself and the red pilot light located on the front panel will illuminate;

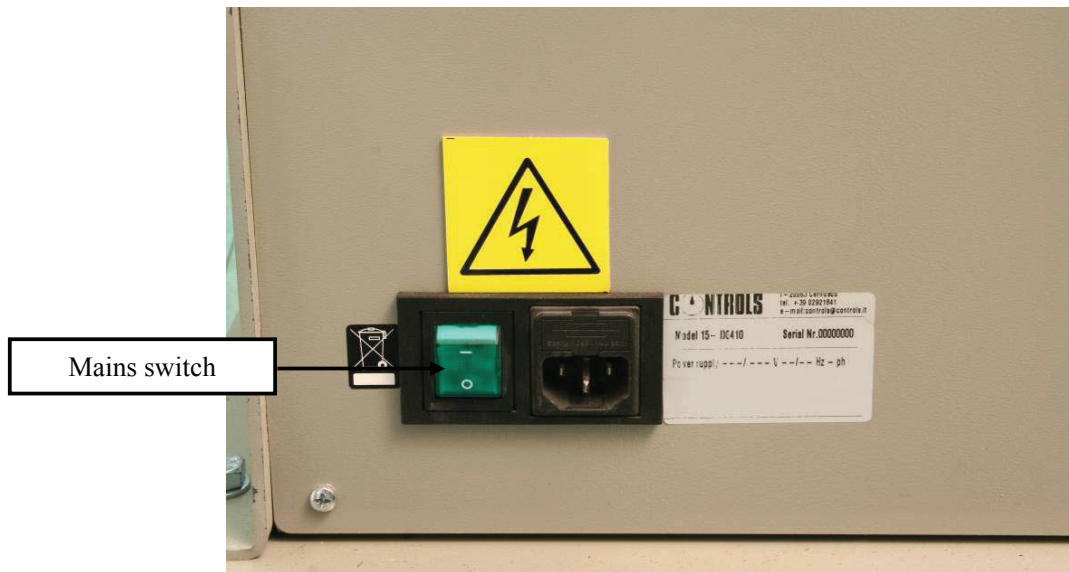


Fig. 4-10

2. Press the **START** push button to activate the power circuits; the relevant lamp will illuminate;

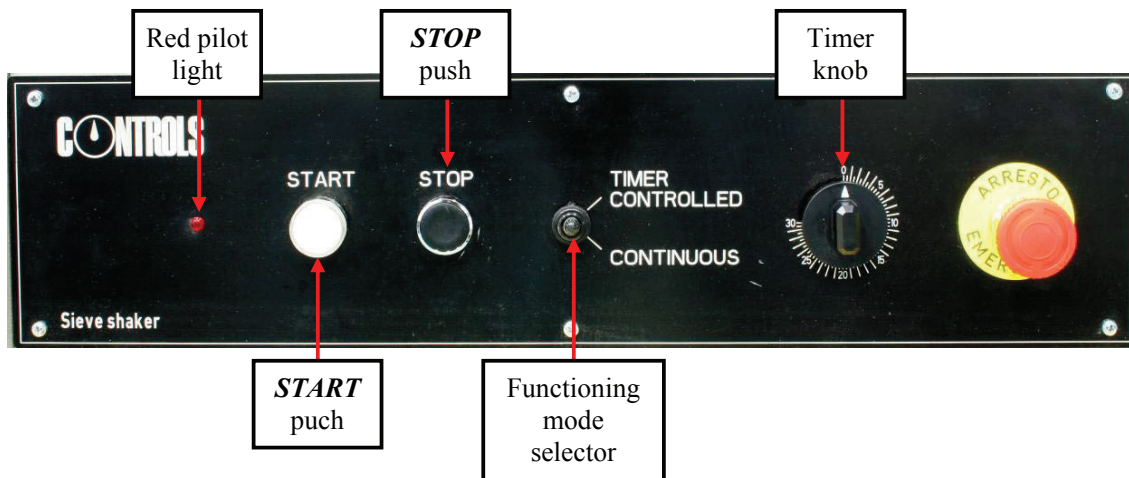


Fig. 4-11

3. Select the type of sieving via the selector:
 - a. In the **CONTINUOUS** mode it will continue to function until manually stopped by pressing **STOP**;
 - b. In the **TIMER CONTROLLED** mode it is possible to set the sieving from 1 to 30 minutes max. after which the shaker will stop automatically;
4. In both cases, at the end of the sieving the **POWER** light on the front panel will turn OFF.



WARNING:

Do not use the sieve shaker when empty.
Ensure that the sieves are correctly placed and blocked in position on the shaker.



WARNING:

The noise level will vary depending upon the material being sieved. In some cases, sieving dry aggregates, the noise level may be disturbing; it is therefore recommended the use of personal protection devices (e.g. ear plugs or ear muffs).



WARNING:

In the **CONTINUOUS** mode the sieve shaker will continue to function until stopped manually (by pressing **STOP**). We recommend that this mode is only used with the operator present and in any case do not use the machine for more than 30 minutes of continuous use. If longer sieving times are necessary, it is necessary to check the correct blockage of the sieves after 30 minutes of sieving action. (see chapter 4.1).

4.3 Stopping the cycle via the Emergency button

In case dangerous conditions are encountered during the use of the equipment, it is possible to stop the machine by pressing the **EMERGENCY BUTTON** located on the front panel.

Pressing the **EMERGENCY BUTTON** will de-activate the power circuits of the equipment thus stopping the motor; the **START** lamp will also turn OFF.

To revert to normal functioning conditions::

1. Release the **EMERGENCY BUTTON** by rotating it clockwise;
2. Press the **START** push button to reactivate the power circuits of the equipment; the relevant lamp will also illuminate.



Fig. 4-12

4.4 Switching off the unit

At the end of the working session, turn OFF the unit by means of its mains switch located on the rear panel of the equipment; the relevant lamp and the **START** lamp located on the front panel will both turn OFF.

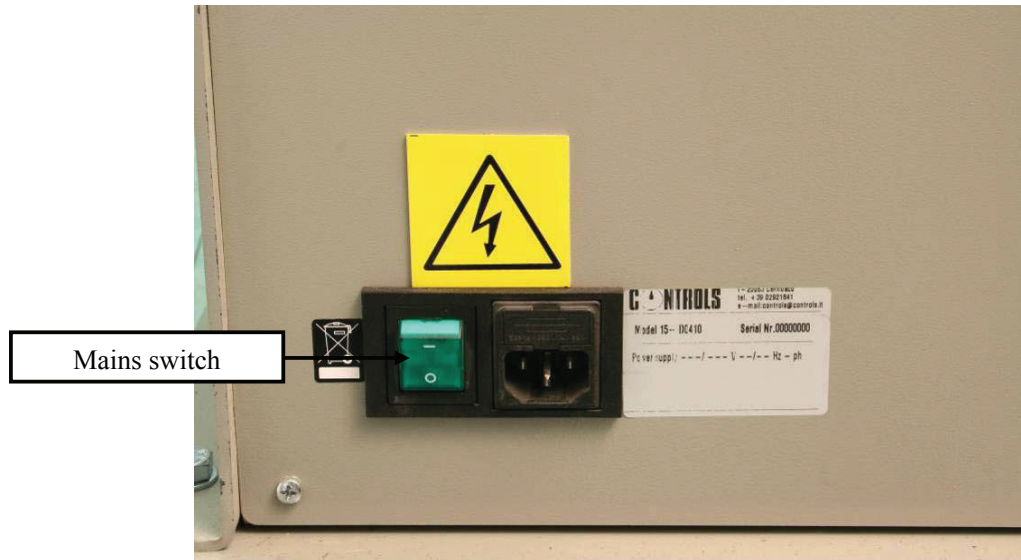


Fig. 4-13

5. MAINTENANCE

As with all electrical equipment, this unit must be used correctly and maintenance and inspections must be performed at regular intervals. Such precautions will guarantee the safe and efficient functioning of the equipment.

Periodic maintenance consists of inspections made directly by the test operator and/or by the authorized service personnel.

Maintenance to the equipment is responsibility of the purchaser and must be performed as stated by this chapter.

Failing to perform the recommended maintenance actions or maintenance performed by unauthorized people can void the warranty.

**WARNING:**

Failing to perform the recommended maintenance actions or maintenance performed by unauthorized people can void the warranty.

CONTROLS will not be responsible for maintenance and service actions performed by unauthorized people.

**WARNING:**

Before opening/removing the covers, disconnect the mains supply to the device and wait at least 5 minutes.

**WARNING:**

All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.

**WARNING:**

Covers/doors can only be removed/opened by maintenance people, by using relevant tools/keys. These tools and keys are for the use of maintenance people only. Never leave them attached to the unit as this may endanger operator safety.

After performing maintenance/repair, make sure that all covers/doors are properly closed and locked.



WARNING:

For continued fire protection, replace fuses with same type and rating. Also, in case of failure, components may only be replaced by using original spare parts. It is in the responsibility of the purchaser to ensure that fire prevention policies are properly implemented according to the CE provisions.



WARNING:

Avoid pouring water, even accidentally, or other liquids into the device, as this could cause short circuits. Before cleaning the device, disconnect it from the mains line.

5.1 Operator's preventive maintenance

The inspections made directly by the operator are the following:

Action	Who	When
Check to ensure that there is no external damage to the equipment, which could jeopardise the safety of use	Operator	Before every working session
Clean the equipment and the sieves from residuals of aggregates	Operator	At the end of each working session
General inspection	Operator	Weekly
Check status of the emergency button	Operator	Weekly
Check status and functioning of the operator's command	Operator	Weekly
Check that all label and rating plates are intact and properly attached	Operator	Monthly
Grease the ball located below the base plate (see chapter 5.1.1)	Operator	Every 6 months
Lubricate the blocks of the rubber spherical seat (seechapter 5.1.2)	Operator	Every 6 months

5.1.1 Grease the ball of the base plate

With a little brush grease the ball located below the base plate by using standard ball-bearing grease.



Fig. 5-1

5.1.2 Lubricate the block of the spherical seat

Use a silicon spray to lubricate the contact area between the teflon blocks and the metal walls indicated below.

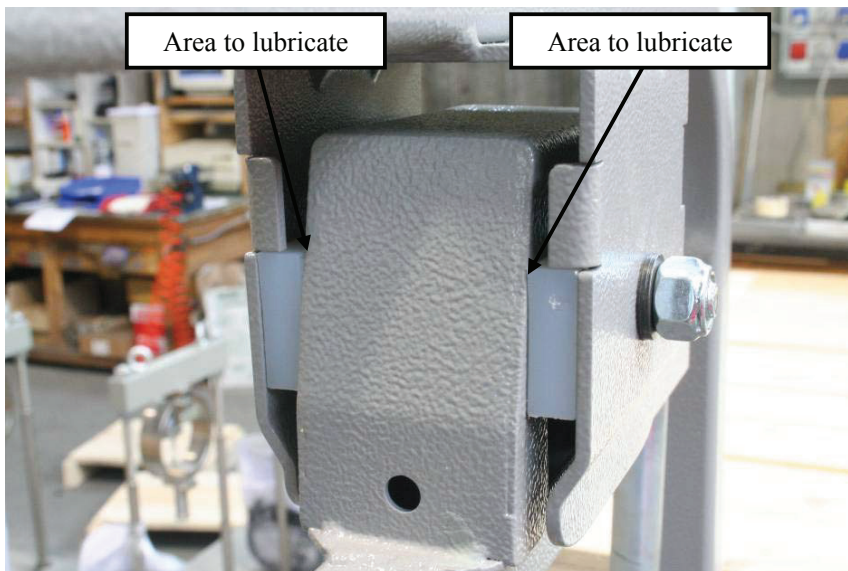


Fig. 5-2

5.2 Authorized service engineer maintenance actions

In addition to the maintenance actions performed by the operator, the performance of the equipment is checked and, if necessary corrected, during the maintenance activities performed by the authorized service engineer, in accordance with the indications provided in the present manual.

The following table lists the maintenance actions and the relevant timing:

Action	Who	When
Checking the vertical movement of the sive plate (see chapter 5.2.1)	Authorized service engineer	Yearly
Checking the play of the upper seating (see chapter 5.2.2)	Authorized service engineer	Yearly
Status of the internal and external cables wear and tear and fastenings	Authorized service engineer	Yearly
Grounding of all the accessible conductive parts	Authorized service engineer	Yearly



WARNING:

Refer to qualified service organization authorized by CONTROLS to carry out the maintenance actions described in the chapter “Authorized service engineer maintenance action”. CONTROLS has not to be held responsible for damages to the equipment and/or injuries to personnel in case the above is not strictly followed.

5.2.1 Checking the vertical movement of the sieve plate

The size of the vertical movement of the sieve plate will affect the correct sieving action. Therefore this movement should be checked periodically and corrected if necessary as described below with the use of a dial gauge.

1. Place a dial gauge as shown below so that it is held on the frame (fixed part) and its stem rests on the cross beam (moving part);

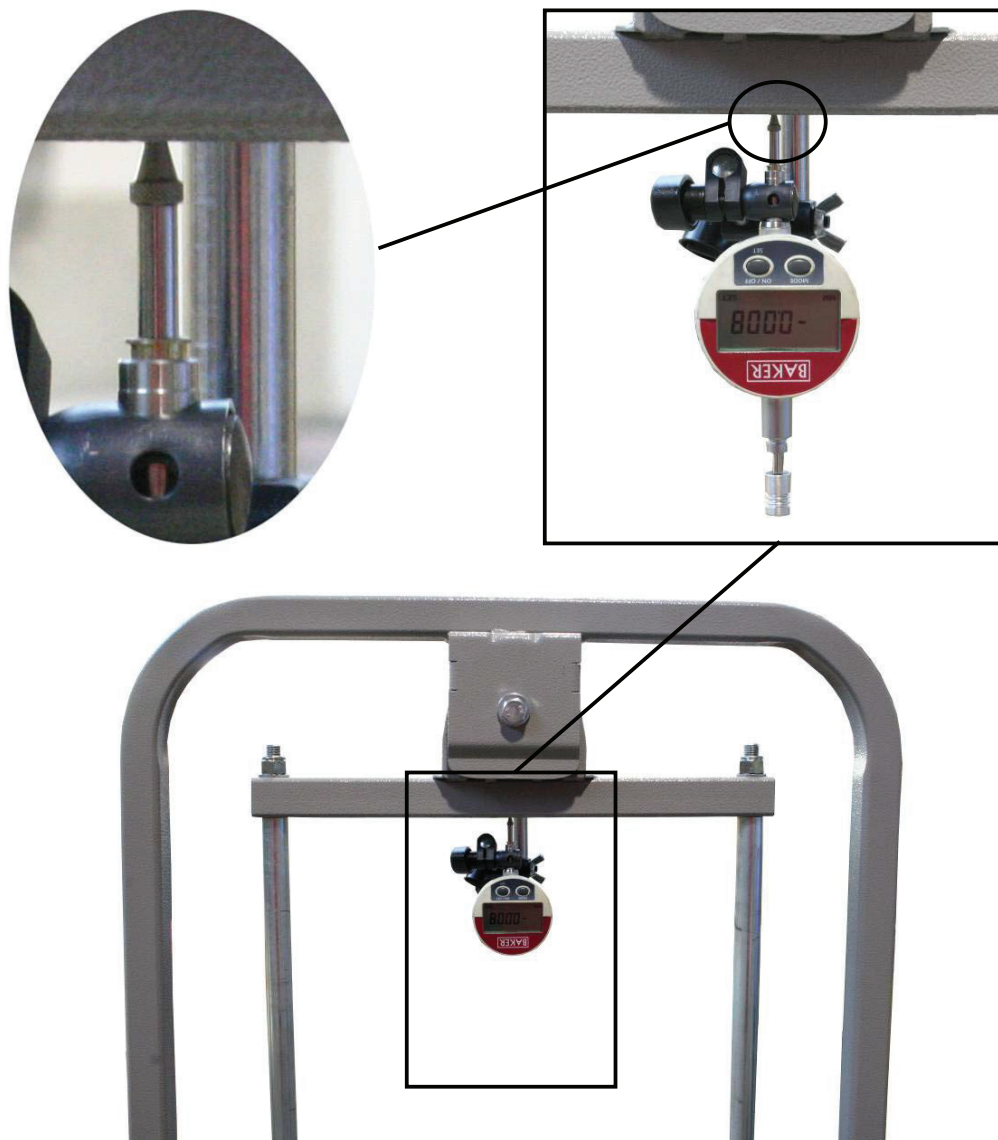


Fig. 5-3

2. Eccentrically rotate the sieve plate (simulating the sieving movement) so as to reach fully the front position;

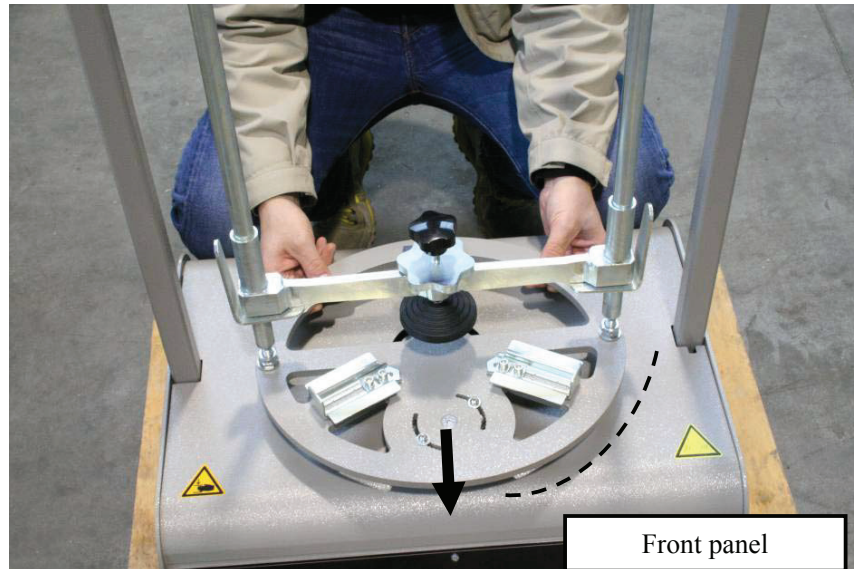


Fig. 5-4

3. Zero the dial gauge;

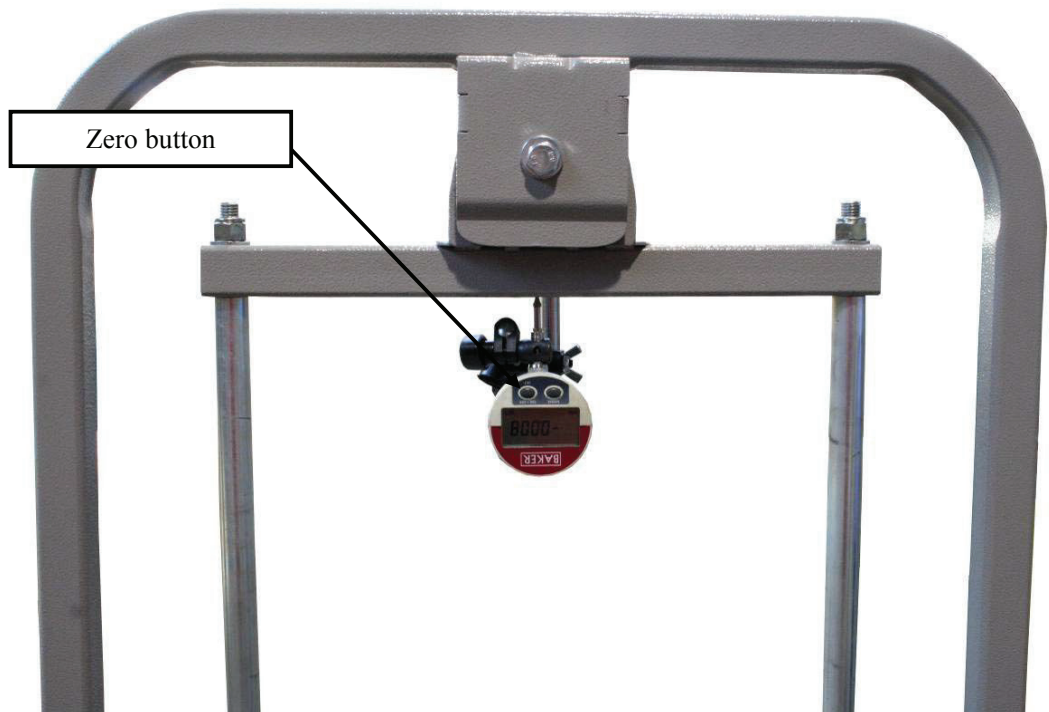


Fig. 5-5

4. Move the sieve plate clockwise until a resistance is felt to impede the rotation. This resistance is produced by the cam which produces the vertical movement of the plate, continue the movement until reaching the maximum height of the cam;



Fig. 5-6

5. Continue the rotation for approximately 180° until reaching the maximum height of the second cam;
6. Read the displacement on the dial gauge: it should be 2mm \pm 0,3mm with respect to the zero position;
7. If the displacement read on the dial gauge is out of these limits it will be necessary to adjust the rods of the plate as follows:
 - a. Reading less than that specified (vertical movement less than that required): lower the plate;
 - b. Reading more than that specified (vertical movement more than the required): raise the plate;

8. To adjust the vertical position of the sieve plate act on the lower nuts: the adjustment must be made by turning the nuts on either side the same number of times; after adjustment check that distance shown in the diagram below are the same.

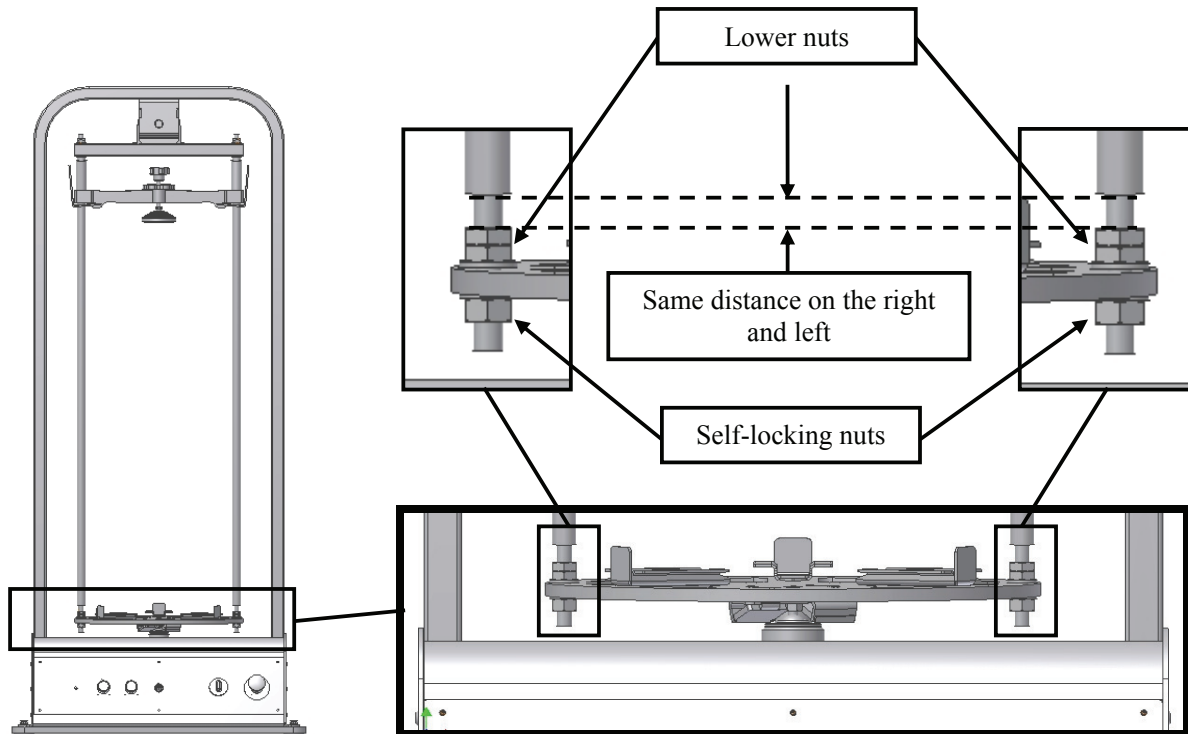


Fig. 5-7



NOTE:
Do not alter the position of the bolts in the two slots shown below



Fig. 5-8

5.2.2 Checking the play of the upper seating

The movement of the sieves is determined by the eccentric movement of the sieve plate and is limited by the play of the upper seating.

With continued use, this play may increase due to the wear of the two teflon pieces in the seating.

To check this play:

1. Rotate the sieve plate to its fully forward position and fully backward position with respect to the machine base;
2. Check when the sieve plate is in its extreme positions that there is no play between the teflon pieces and the internal walls of the seating, if there is tighten the nut shown below to remove this play. Only tighten the nut to cancel the play, do not tighten further.

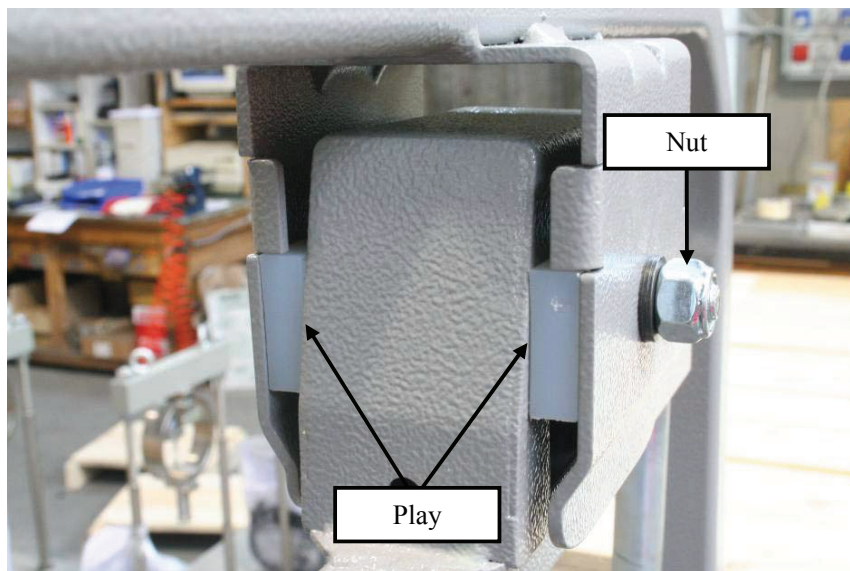


Fig. 5-9

6. DIAGNOSTICS & TROUBLESHOOTING

The present chapter provides information on the troubleshooting of the most common problems.



WARNING:

Before opening/removing the covers, disconnect the mains supply to the device and wait at least 5 minute.



WARNING:

Covers/doors can only be removed/opened by maintenance people, by using relevant tools/keys. These tools and keys are for the use of maintenance people only. Never leave them attached to the unit as this may endanger operator safety. After performing maintenance/repair, make sure that all covers/doors are properly closed and locked.



WARNING:

All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.



WARNING:

Refer to qualified service organization authorized by CONTROLS to carry out the service maintenance actions described in the chapter “Diagnostic and Troubleshooting”. CONTROLS has not to be held responsible for damages to the equipment and/or injuries to personnel in case the above is not strictly followed.

6.1 Troubleshooting

The following table provides a list of possible causes and checks in case a faulty condition is encountered:

difetto riscontrato:

Type of fault	Actions
The equipment does not turn ON (red pilot light OFF)	<ul style="list-style-type: none"> • Check that mains supply voltage matches the functioning mains voltage of the equipment (see data on the machine plate); • Check mains power supply line and proper plugging of mains power cable • Check the status of the line fuses FU1 and replace if necessary (item 14 of chapter 7); • Check the status of the mains switch QF1 and replace if (item 13 of chapter 7); • Check the status of the red pilot light HL3 and replace if necessary (item 1 of chapter 7).
The equipment turns ON (red pilot light ON) but, pressing the START pushbutton the power circuits do not activate	<ul style="list-style-type: none"> • The EMERGENCY BUTTON has been pressed; release it; • Check the status of the EMERGENCY BUTTON and of its contact SB1 and replace if necessary (items 11 and/or 12 of chapter 7); • Check the status of the START push button and relevant contact SB3 and replace if necessary (items 2 and/or 4 of chapter 7); • Check the status of the STOP push button and relevant contact SB2 and replace if necessary (items 6 or 7 of chapter 7); • Check the status of the functioning mode selector SB4 and replace if necessary (item 8 of chapter 7); • Check the status of the timer TR1 and replace if necessary (item 10 of chapter 7); • Check the status of relay KA1 and replace if necessary (item 9 of chapter 7).
The power circuits of the equipment activate but the START lamp remains OFF	<ul style="list-style-type: none"> • Check the status of the bulb of the START push button HL1 and replace if necessary (item 3 of chapter 7).
The power circuits of the equipment activate (START lamp ON) but the motor does not activate	<ul style="list-style-type: none"> • Check the status of relay KA1 and replace if necessary (item 9 of chapter 7); • Check the status of the motor MF1 and replace if necessary (item 17 of chapter 7).
Selecting the TIMER CONTROLLED functioning mode the seiving does not start and does not stop at the end of the preset time	<ul style="list-style-type: none"> • Check the status of the timer TR1 and replace if necessary (item 10 of chapter 7).

7. SPARE PARTS

This chapter contains the list of spare parts. For each item, the following information is provided:

- CONTROLS order code
- Item description
- Quantity in the unit

Orders for spare parts have to be addressed to CONTROLS representatives. When ordering spare parts, please provide code number, serial number, year of manufacture and any other useful information of the unit involved.



WARNING:

Before opening/removing the covers, disconnect the mains supply to the device and wait at least 5 minute.



WARNING:

Covers/doors can only be removed/opened by maintenance people, by using relevant tools/keys. These tools and keys are for the use of maintenance people only. Never leave them attached to the unit as this may endanger operator safety.

After performing maintenance/repair, make sure that all covers/doors are properly closed and locked.



WARNING:

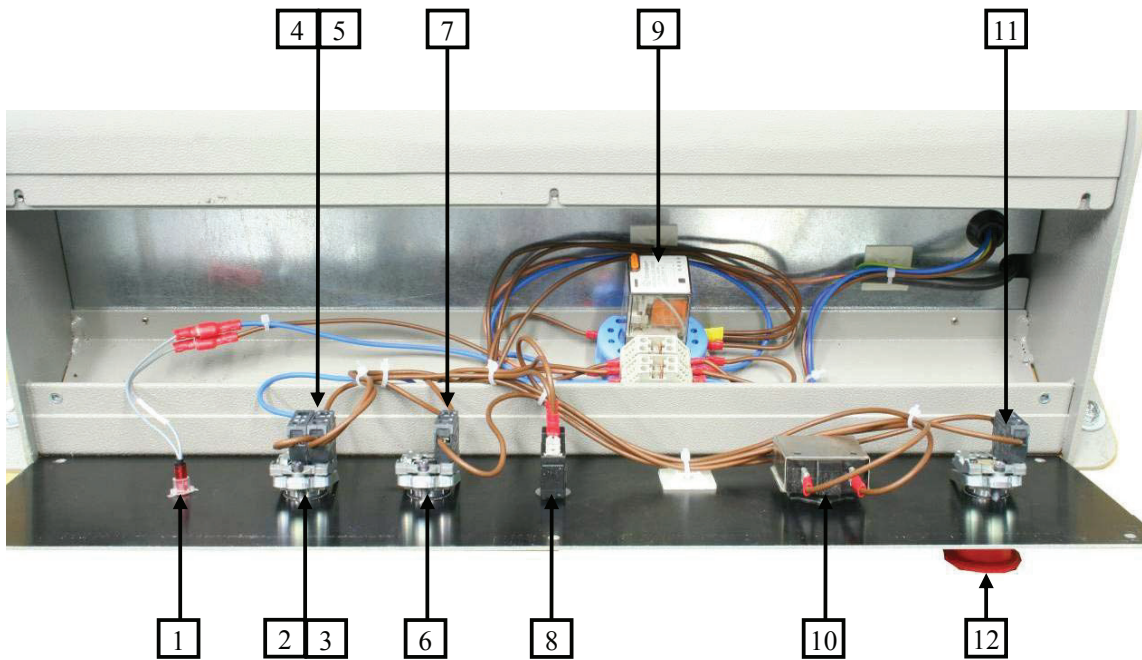
All safety devices must be functional at all times. Damaged protective covers or devices must be replaced immediately. When safety components are replaced, the protective devices are to be properly attached and tested. Any manipulation of the safety devices endangers the operating personnel.



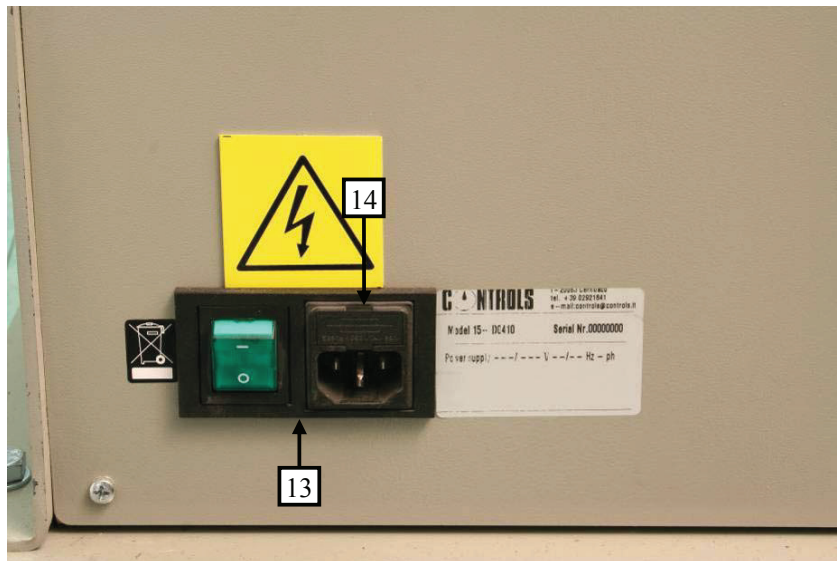
WARNING:

For continued fire protection, replace fuses with same type and rating. Also, in case of failure, components may only be replaced by using original spare parts.

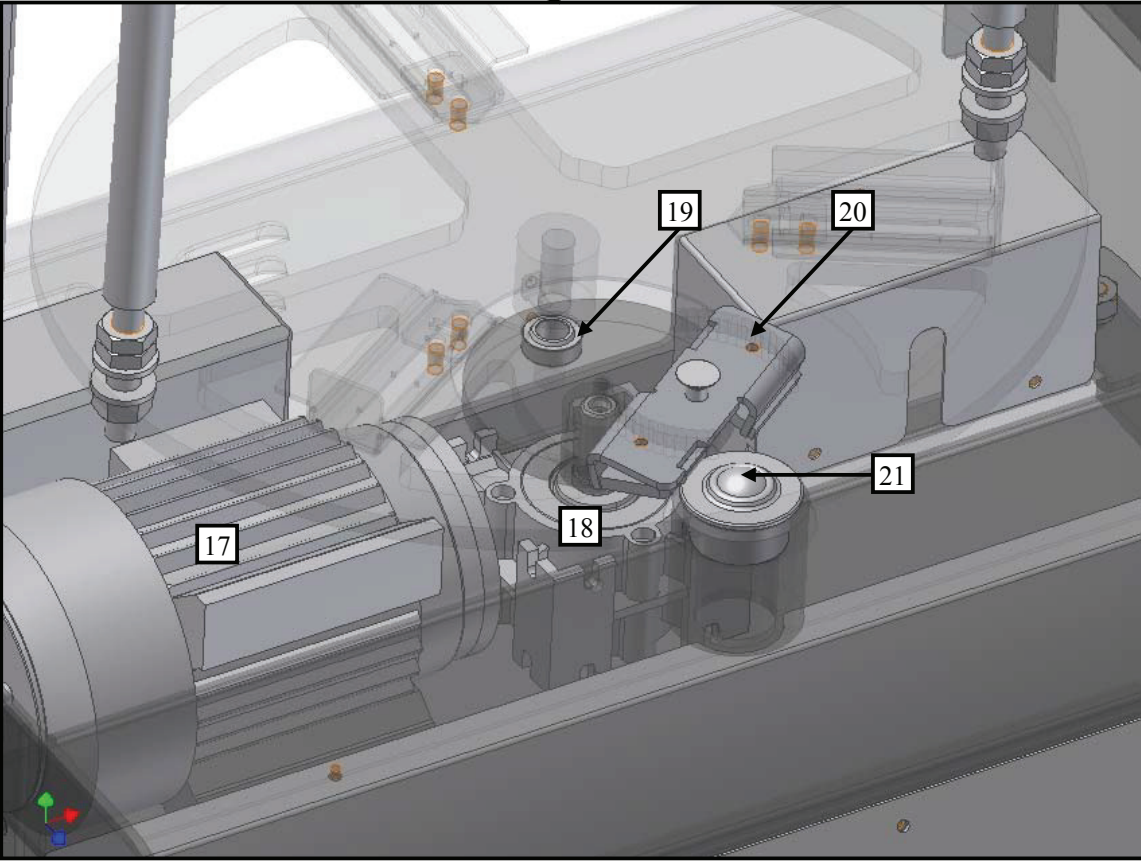
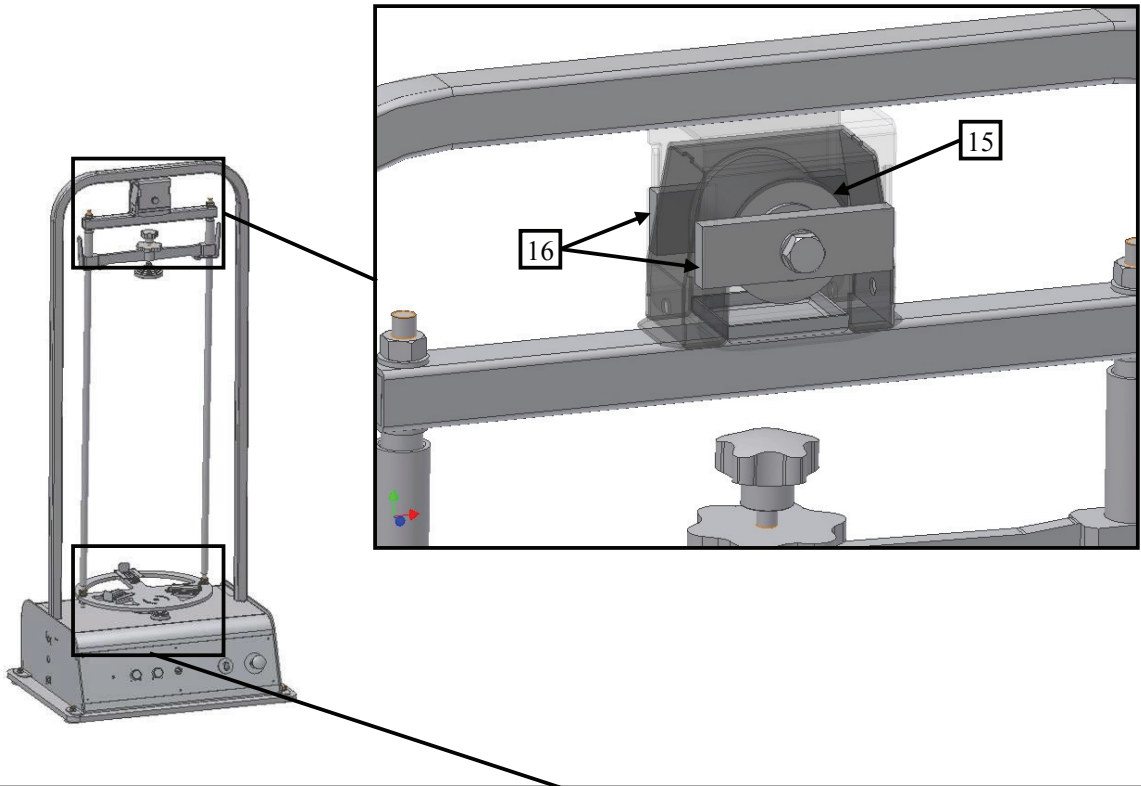
Ref.	Codice ricambio/ Spare part code	Descrizione	Description	Q.tà in una macchina/ Q.ty in one unit
1	D0410/R01	Spia rossa	Pilot lamp red	1
2	D0410/R02	Pulsante START	START push button	1
3	D0410/R03	Lampadina START	START bulb	1
4	D0410/R04	Contatto N.A.	N.O. contact	1
5	D0410/R05	Portalampada	Lamp holder	1
6	D0410/R06	Pulsante STOP	STOP push button	1
7	D0410/R07	Contatto N.C.	N.C. contact	1
8	D0410/R08	Selettore 2 posizioni	Two-position selector	1
9	D0410/R09	Relay	Realy	1
10	D0410/R10	Timer	Timer	1
11	D0410/R11	Pulsante di emergenza	Emergency button	1
12	D0410/R12	Contatto N.C.	N.C. contact	1
13	D0410/R13	Blocchetto interruttore generale	Mains switch block	1
14	D0410/R14	Fusibile 2AT	Fuse 2AT	2
15	D0410/R15	Snodo in gomma	Rubber seat	1
16	D0410/R16	Pattino teflon	Teflon block	2
17	D0410/R17	Motore versione 230VAC/50Hz	Motor 230VAC/50Hz version	1
18	D0410/R18	Riduttore	Gearbox	1
19	D0410/R19	Cuscinetto	Ballbearing	1
20	D0410/R20	Camme	Camme	1
21	D0410/R21	Perno sfera	Spherical pin	1



7-1

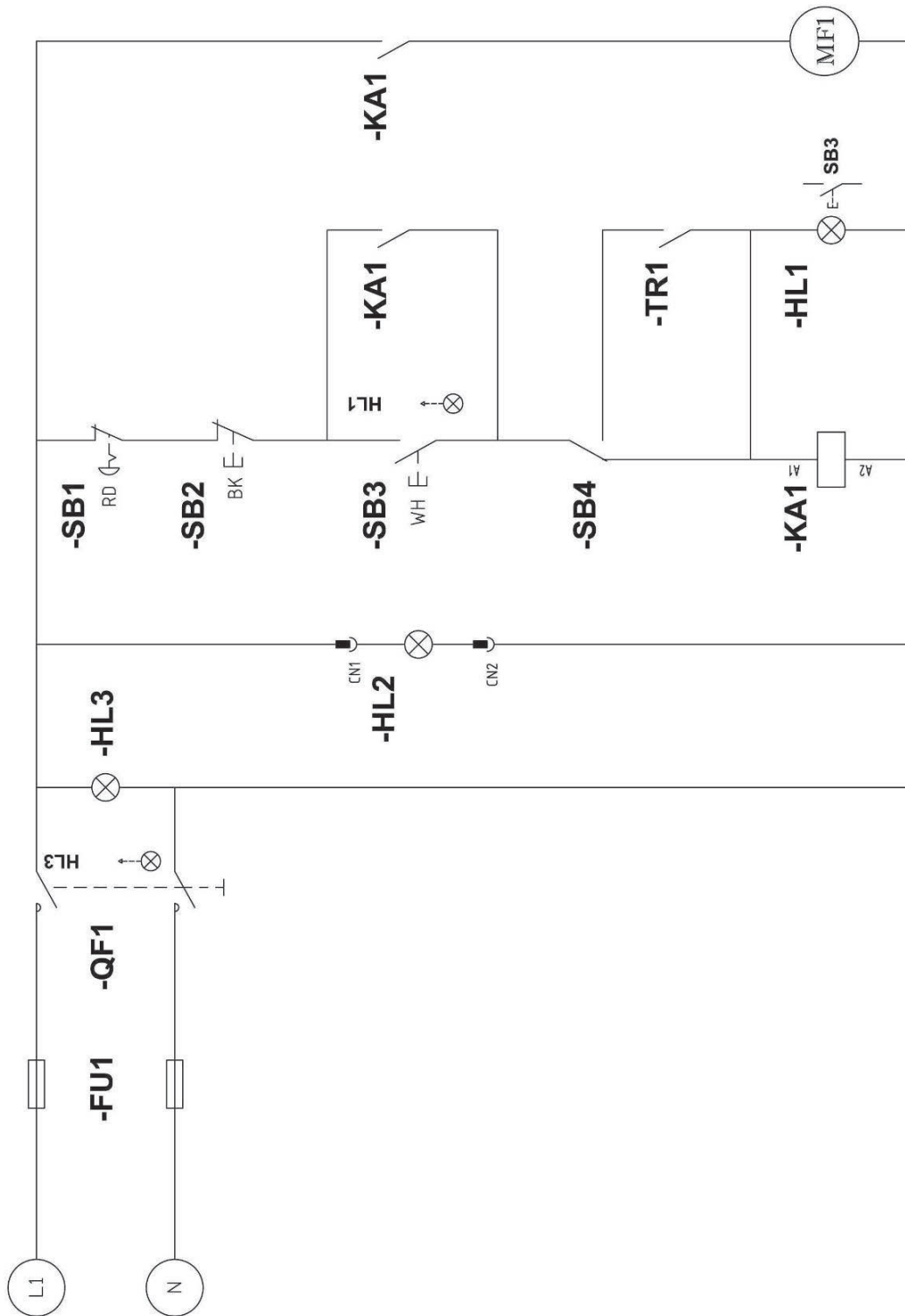


7-2



8. SCHEMATICS AND DRAWINGS

1. Electrical panel schematics



ELECTRICAL COMPONENTS IDENTIFICATION

COMPONENT NAME	COMPONENT DESCRIPTION
FU1	LINE FUSES 2AT
QF1	MAINS SWITCH
HL3	MAINS ON PILOT LIGHT (INSIDE THE MAINS SWITCH)
HL2	MAINS ON PILOT LIGHT ON FONT PANEL
SB1	EMERGENCY BUTTON
SB2	STOP PUSH BUTTON
SB3	START PUSHBUTTON
SB4	FUNCTIONING MODE SELECTOR
TR1	TIMER
KA1	RELAY
HL1	START LAMP
MF1	MOTOR

