

CUTTING SWITCHING BOX

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

DEVICE NO.

P06942300NG - P06942318NG - P06942322NG - P06942326NG
P06942328NG - P06942335NG - P06942336NG - AS-CM-06942339



EDITION : EN
REVISION : N
DATE : 10-2021

Instructions for use

REF: **8695 4930**

Original instructions

LINCOLN[®]
ELECTRIC

Thank you for the trust you have expressed by purchasing this equipment, which will give you full satisfaction if you follow its instructions for use and maintenance.

Its design, component specifications and workmanship comply with applicable European directives.

Please refer to the enclosed CE declaration to identify the directives applicable to it.

The manufacturer shall not be liable if the product is used in association with items not recommended by the manufacturer.

For your safety, below is a non-limitative list of recommendations or requirements, many of which appear in the labour code.

Lastly, please inform your supplier of any error you may find in this instruction manual.

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Update	D10

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REVISION D 06/01

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Add box 0694 2330 + 0694 2332 for HP125	C4-C5 D7-D9-D10-D11
Add wiring diagram	F16-F17

REVISION E 10/04

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Update	4-5-9-10-16-17

REVISION F 09/05

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Friojet 6 → Friojet 60	5, 8, 9, 11, 15, 17

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To change logos	-

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Update	

REVISION I 10/08

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REVISION L

07/19

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REVISION M

07/19

DESIGNATION	PAGE
Boxes added FLEXCUT 200	

REVISION N

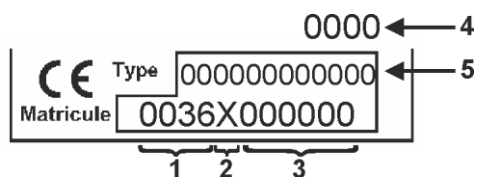
10/21

DESIGNATION	PAGE
Boxes added LINC-CUT S Update FINELINE	

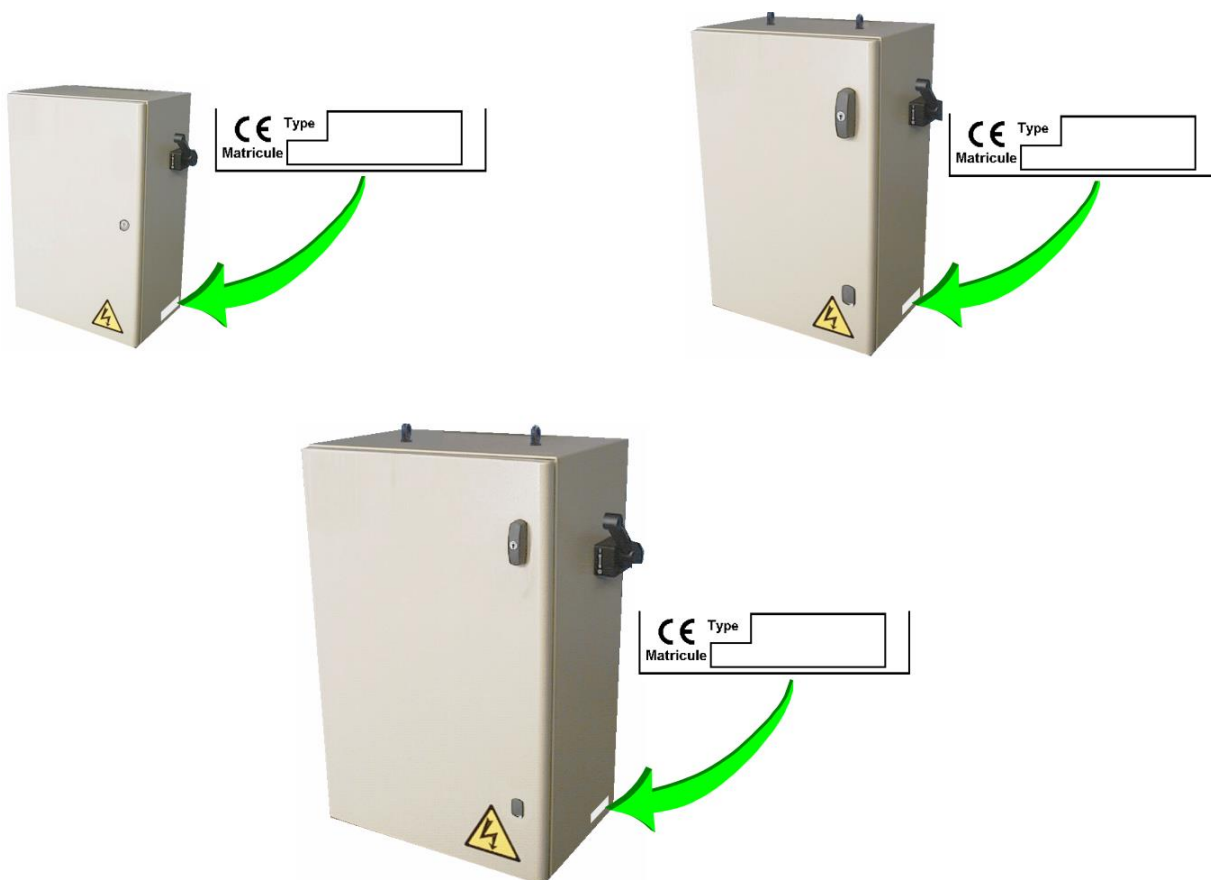
A - IDENTIFICATION

Quote this information in all correspondence.

Please enter the number of your equipment in the following box:



1	Manufacturing factory code	4	Year manufactured
2	Manufacturing year code	5	Product type
3	Product serial no.		



B - SAFETY INSTRUCTIONS

1 - GENERAL SAFETY INSTRUCTIONS



For general safety instructions, please refer to the specific manual supplied with the equipment: reference 8695 7050

2 - PARTICULAR SAFETY INSTRUCTIONS

Switching boxes are devices with a high electrical power and must therefore be used with extreme care: among other things, avoid being in direct contact with the box's components.



PRIOR TO ACCESSING THE INSTALLATION SITUATED ON THE DOWNSTREAM SIDE OF THE BOX, MAKE SURE YOU PLACE THE DISCONNECTING SWITCH TO THE "0" POSITION AND PADLOCK THE HANDLE.



WARNING!!! EVEN WHEN THE HANDLE IS ON THE "0" POSITION, A VOLTAGE IS STILL PRESENT ON THE UPSTREAM SIDE TERMINALS OF THE DISCONNECTING SWITCH.



The use of Personal Protective Equipment (PPE) is mandatory.



Any work on the cabinet must be carried out by approved personnel . The emergency stop does not cut out the cabinets.



The cabinet is supplied with 230V or 400V power. Risk of electric shock or electrocution. It is locked with a removable key.
After the work, lock the cabinet once again before switching on the power .

C - DESCRIPTION

1 - GENERAL INFORMATION

So as to meet with European safety standards, the cutting or welding installations must be connected to the electrical network via a wall-mounted box equipped with an individual safety disconnecting switch of adequate rating and with a suitable breaking capacity.

In order to satisfy these standards we have developed switching boxes that can adapt to any of its cutting and welding installations.

2 - AVAILABLE BOXES

The reference of the box varies according to on the cutting process, the machine and the client's power supply system.

	NUMBER OF TORCHES	SWITCHING BOX REF
WITHOUT PLASMA	0	P06942300NG
One plasma up to 170A	1	P06942318NG
Two plasmas up to 170A	2	P06942322NG
One plasma FLEXCUT 200 CE	1	P06942335NG
One plasma generator up to 300A	1	P06942326NG
Two power sources FLEXCUT 200 CE	2	P06942336NG
Two plasma generators(2*300A)	2	P06942328NG
Two plasma generators (HP450, HP600)	1	P06942328NG
Four plasma generators (2*HP450, 2*HP600)	2	2 * P06942328NG
LINC-CUT S	1	AS-CS-06942339

3 - COMPOSITION OF THE BOXES

BOX Ref	Machine protection 16AaM max FU1 10x38	Three-phase secondary equipment FU2 22x58	Power source protection N°1 FU3 22x58	Power source protection N°2 FU4 22x58	Upper ventilation system FU7 10x38	Cooling tri 400V N°1 FU8 10x38	Max current isolation switch
P06942300NG	①	40AaM⑤					63A④
P06942318NG	①	40AaM⑤	80AaM②				160A
AS-CM-06942339	①	32AaM⑤	40AaM②				160A
P06942335NG	①	40AaM⑤	80AaM		6AaM		160A
P06942322NG	①	40AaM⑤	80AaM ②	80AaM ②	6AaM		250A
P06942326NG	①	40AaM⑤	125AaM		6AaM		250A
P06942328NG	①	63AaM⑤	125AaM	125AaM⑤	6AaM	8AaM	400A
P06942336NG	①	63AaM⑤	80AaM	80AaM	6AaM		400A

①: fuse rating varies according to the machine (see table on page 7).

②: 63AaM for **NERTAJET 50, HP150** - 40AaM for **FLEXCUT 125** - 80AaM for **FINELINE 170**

③: 63AaM for an **HP150**, 125AaM for an **HP300** or **FINELINE 300**

④: Fusible switch

⑤: 32AaM for **DIGIFILTER 4CD, DIGIFILTER 8CD** filter, 40AaM between **DIGIFILTER 10CD** and **DIGIFILTER 16CD**, 63AaM + **DIGIFILTER 16CD**

D - ASSEMBLY - INSTALLATION

1 - INSTALLATION

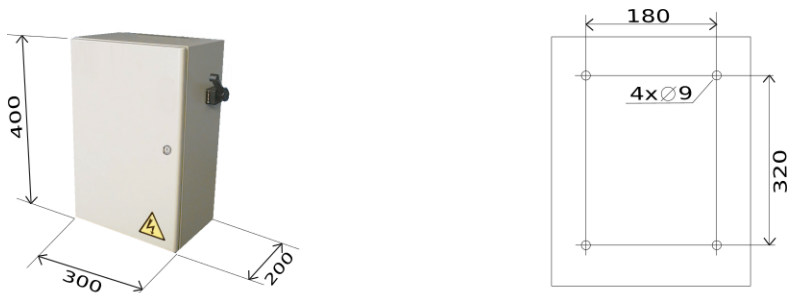
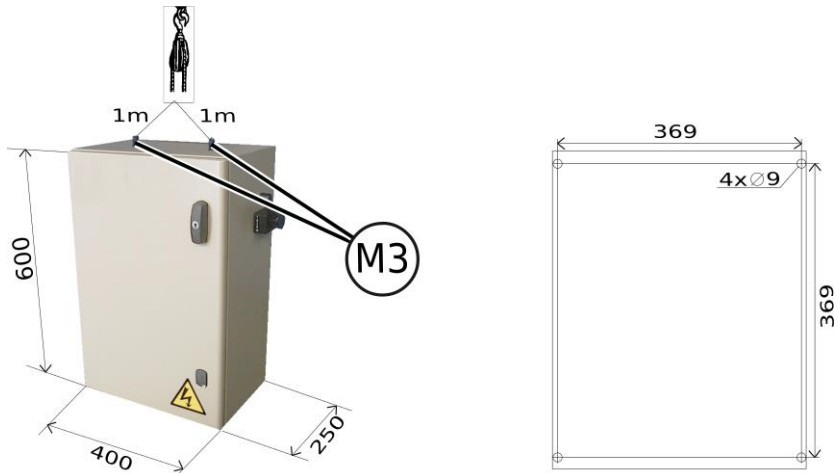
This box must be fixed to a wall near the installation it protects.

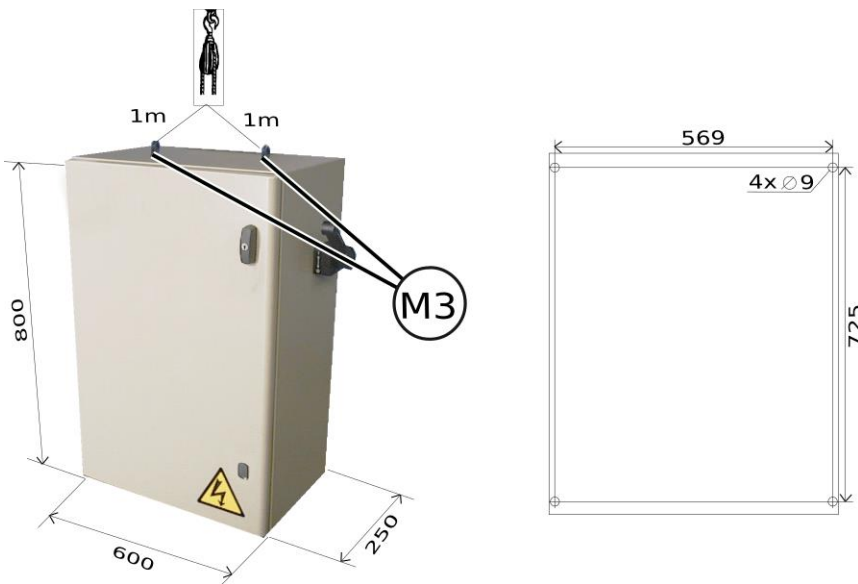
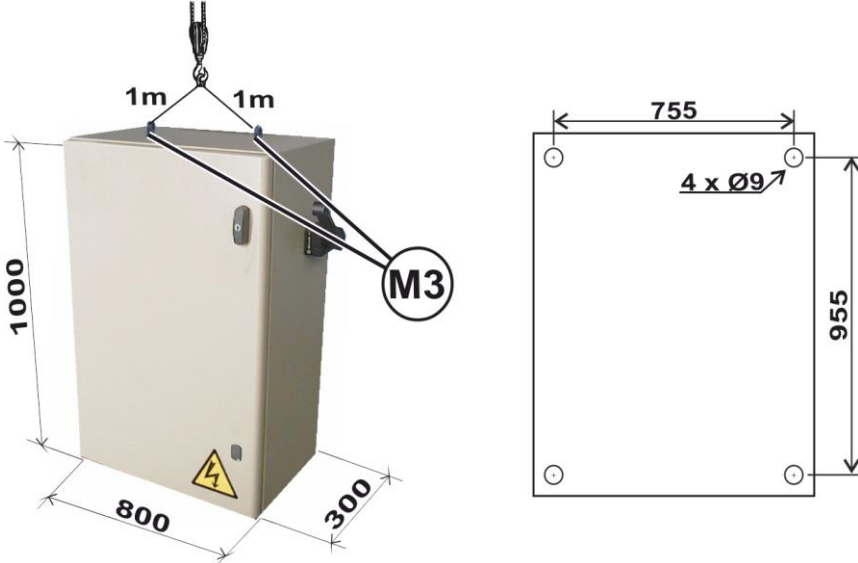
The client must make sure the cables going from the box to the installation can be supported and protected from any mechanical, chemical or thermal damage.

The box can be handled using the slinging rings placed in the specially designed holes (**M3**)

The box's supply cable and supply earth lead (provided by the client) must have a section and protection corresponding to the box's power (see page 9). However, this section and protection can be modified according to the standards in force.

The box can be mounted using four M8 screws.

REFERENCE	WEIGHT - DIMENSIONS - FIXATION CENTRE DISTANCES
P06942300NG	<p>Weight : 20Kg</p> 
P06942318NG AS-CS-06942339	<p>Weight : 40kg</p> 

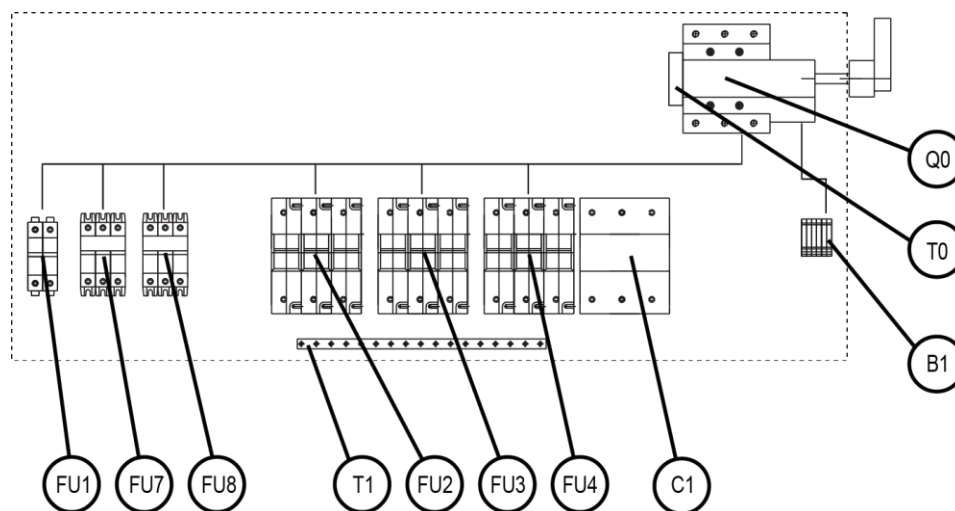
REFERENCE	WEIGHT - DIMENSIONS - FIXATION CENTRE DISTANCES
<p>P06942322NG P06942326NG P06942335NG</p>	<p>Weight : 80kg</p> 
<p>P06942328NG P06942336NG</p>	<p>Weight : 80kg</p> 



Operator protection:
Helmet - Gloves - Safety shoes

2 - CONNECTION

The indications given in the table below correspond to the indications shown on the electrical diagram and on the inscriptions found on the box's components.



General block diagram for the connection of the switching boxes

The box is connected in accordance with the circuit breakers available in your box (see table on page 3).

- CUSTOMER CABLE CONNECTION.

Connect the 3 phases to **Q0**.
Connect the ground to **T0**.

-CONNECTION OF THE MACHINE:

The supply cable must be connected to the lower terminals of the **FU1** fuse holders (place the appropriate fuses for the machine inside the fuse holders: see table on page 7)

-CONNECTION OF THE THREE-PHASE SECONDARY EQUIPMENT:

The supply cable must be connected to the lower terminals of the **FU2** fuse holders (place the appropriate fuses for the three-phase secondary equipment inside the fuse holders ((32Aam corresponding to a suction of 9kW max, 40AaM, corresponding to a suction of 15kW max, or 63Aam, corresponding to a suction of 30kW max.).

-PRE-CUTOFF CONTACT (except for AS-CM-06942339)

The box's pre-cutoff contact is available on the **B1** terminal block to be connected in series within the emergency stop circuit of the machine.

-CONNECTION OF THE CUTTING POWER SOURCES

The supply cable must be connected to the lower terminals of the fuse holders
FU3 for the 1st power source
FU4 for the 2nd power source
(place the appropriate fuses for the generator inside the fuse holders: see table on page 3)

-CONNECTION OF THE COOLER

The supply cable must be connected to the lower terminals of the fuse holders (three-phase) **FU8**

-CONNECTION OF THE UPPER VENTILATION SYSTEM

The supply cable must be connected to the lower terminals of the **FU7** fuse holders

-POWER SOURCE SWITCH FLEXCUT 200 CE

The cable **P1-W69** (and **P2-W69** for the second plasma) must be connected to the terminal block **B1**. The shielding must be connected to the earth; connection under the terminal block. It controls the switch **C1**.



ALL THE EARTH LEADS MUST BE CONNECTED TO THE T1 BAR

3 - FUSE RATING

The fuse rating is shown on page 3 (composition), except for fuses in the machine:

MACHINE (FU1)	POWER SUPPLY	
	2x230V	2x400V
EUROTOME II	16AaM (10x38)	10AaM (10x38)
OPTITOME II		10AaM (10x38)
OXYTOME/PLASMATOME	16AaM (10x38)	10AaM (10x38)
ALPHATOME II		10AaM (10x38)
CYBERTOME		16AaM (10x38)
LINC-CUT S	6 AgG (10x38)	

The boxes are powered with 400V, except box P06942300NG, which can also be powered with 230VAC.

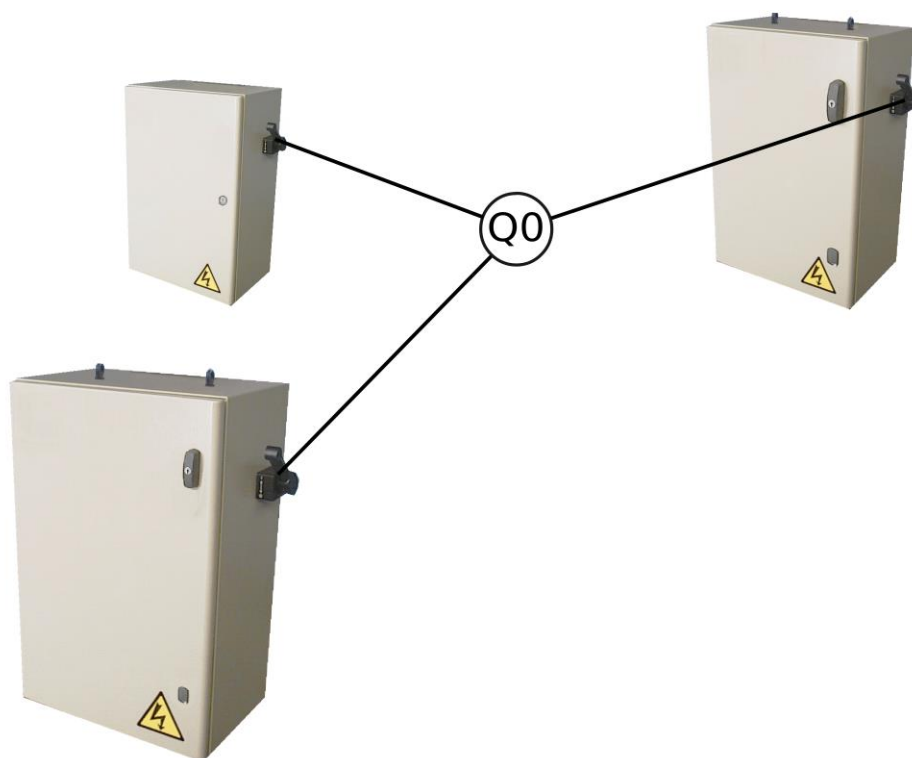
4 - CHOOSING THE SUPPLY CABLES FOR THE BOX AND FOR THE EQUIPMENT ON THE DOWNSTREAM SIDE

Depending on the box's reference, it must be powered with either one or several appropriate cables (not provided). The section of the cables depends on the environment, the length, and the installation method you have chosen. We market sells the cables with the following references:

Ref (H07RN-F)	W000010099	W000010100	W000010101	W000010102	W000010103	W000010104	W000010105	W000010106		
Section	3x2,5mm ²	4x2,5mm ²	4x4mm ²	4x6mm ²	4x10mm ²	4x16mm ²	4x25mm ²	4x35mm ²		
BOX REFERENCE	Max consumption (A)	Box power supply			Machine	Secondary equipment	Generators		SDV	FRIO
		Minimum cable	Minimum earth lead	Recommended cable mini	Downstream cable FU1 (min)	Downstream cable FU2 (min)	FU3	FU4	FU7	FU8
AS-CM-06942339	60	3x16mm ²	16mm ²	W000010104						
P06942300NG	63	3x16mm ²	16mm ²	W000010104	W000010099	W000010102 Or W000010101				
P06942318NG	136	3x35mm ²	16mm ²	W000010106	W000010099	W000010102 Or W000010101	W000010103 W000010104			
P06942335NG	136	3x35mm ²	16 mm ²	W000010106	W000010099	W000010102 Or W000010101	W000010104		W000010100	
P06942326NG	187	3x70mm ²	35 mm ²	4x70mm ²	W000010099	W000010102 Or W000010101	W000010106		W000010100	
P06942322NG	253	3x70mm ² Or 6x50mm ² (2xFLEXCUT 170)	35 mm ² Or 50 mm ² (2xFLEXCUT 170)	4x50mm ² x2 (2xFLEXCUT 170)	W000010099	W000010102 Or W000010103	W000010103 Or W000010104	W000010103 Or W000010104	W000010100	
P06942336NG	253	6x50mm ²	50 mm ²	4x50mm ² x2	W000010099	W000010102 Or W000010103	W000010104	W000010104	W000010100	
P06942328NG	353	6x70mm ²	70 mm ²	4x70mm ² x2	W000010099	W000010102 Or W000010103	W000010106 Or W000010103	W000010106 Or W000010103	W000010100	W000010100

x2: 2 cables are required for the primary supply of the boxes

E - OPERATOR'S MANUAL



Q0	position "1":	Switching box power on
	position "0":	Switching box power off

For the boxes P06942335NG and P06942336NG, one switch controlled by an output of the numerical control manages the power supply of the power source. It allows the power source to be started up/shut down remotely.

F - MAINTENANCE

1 - SERVICING

- So that the machine continues to provide good service for as long as possible, a certain minimum of care and maintenance is necessary
- The frequency of this maintenance work is given on the basis of the production of one work station per day. Maintenance should be more frequent if production is greater.

Your maintenance department may photocopy these pages so that it can follow up maintenance dates and operations (tick as appropriate)



Before working on the machine, it is **MANDATORY** to lock out all the supplies of utilities to the machine (electricity, air, gas etc.).
Locking an emergency stop button is not sufficient.

Monthly

Date of maintenance: / /



In order to prevent the inside of the box from getting clogged up, clean it with an air gun.

2 - TROUBLESHOOTING



PRIOR TO ACCESSING THE INSIDE OF THE BOX, PLACE THE DISCONNECTING SWITCH TO THE "0" POSITION AND PADLOCK THE HANDLE.

Possible symptoms	Probable causes	Possible remedies
One or several element(s) of the installation is not powered	The disconnecting switch handle is on "0".	Place the disconnecting switch handle to 1 and activate by pressing the green push button.
	The fuses protecting the concerned elements are blown	Replace the fuses in question
The power source FLEXCUT 200 is not supplied with power	The power source switch is not supplied with power	Check the power supply of the switch
	The switch has failed	Replace the switch

For further details, refer to the electrical diagram provided with the box.

3 - SPARE PARTS

How to order

The photos or sketches identify nearly every part in a machine or an installation

The descriptive tables include 3 kinds of items:

- those normally held in stock: ✓
- articles not held in stock: ✗
- those available on request:

(For these, we recommend that you send us a copy of the page with the list of parts duly completed. Please specify in the Order column the number of parts desired and indicate the type and the serial number of your equipment.)

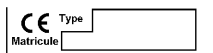
For items noted on the photos or sketches but not in the tables, send a copy of the page concerned, highlighting the particular mark.

For example:

Ref.	Ref.	Stock	Order	Designation
E1	W000XXXXXX	✓		Machine interface board
G2	W000XXXXXX	✗		Flowmeter
A3	9357 XXXX			Silk-screen printed front panel

✓	normally in stock
✗	not in stock
	on request

➤ For parts order, give the quantity required and put the number of your machine in the box below.

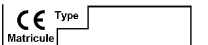
	TYPE :
	Number :

Les repères du tableau ci-dessous correspondent aux repères

- du schéma électrique.
- des inscriptions sur les composants du coffret.

Item	Ref.	Stock	Order	Designation
		✓		normally in stock
		✗		not in stock
				on request.
FU0	AS-CS-0020044	✗		Fuses 10x38 protecting the machine 6AaG
FU1	AS-CS-0020059	✗		Fuses 10x38 protecting T1 4AaM
FU1	PC5705038			Fuses 10x38 protecting the machine 10AaM
FU1	W000366058	✗		Fuses 10x38 protecting the machine 16AaM
FU2	W000366072	✗		Fuses 22x58 protecting the three-phase secondary equipment 32AaM
FU2	W000366073	✗		Fuses 22x58 protecting the three-phase secondary equipment 40AaM
FU2	W000366075	✗		Fuses 22x58 protecting the three-phase secondary equipment 63AaM
FU3	W000366075	✗		Fuses 22x58 protecting the No. 1 power source 63AaM
FU3	PC5705146			22x58 fuses protecting the power source 1 80AaM
FU3	W000366079	✗		Fuses 22x58 protecting the No. 1 power source 125AaM
FU4	W000366075	✗		Fuses 22x58 protecting the No. 2 power source 63AaM
FU4	PC5705146			22x58 fuses protecting the power source 2 80AaM
FU4	W000366079	✗		Fuses 22x58 protecting the No. 2 power source 125AaM
FU7	PC5705037			Fuses 10x38 6AaM protecting the ventilation system
FU8	PC5705002			Fuse 10x38 8AaM protecting the cooling system
Q0	AS-CS-5702527	✓		Disconnecting switch 63A
	AS-CS-5702566	✓		Disconnecting switch 160A
	AS-CS-5702567	✓		Disconnecting switch 250A
	W000366542	✓		Disconnecting switch 400A
	PC5702570			Handle of disconnecting switch
KM1	AS-CS-5701746	✓		80A switch for power source 1
KM2	AS-CS-5701746	✓		80A switch for power source 2
T1	PC5706170	✗		Transformer COM230+400V/230V+24V - 1KVA

➤ For parts order, give the quantity required and put the number of your machine in the box below.

	TYPE :
	Number :

