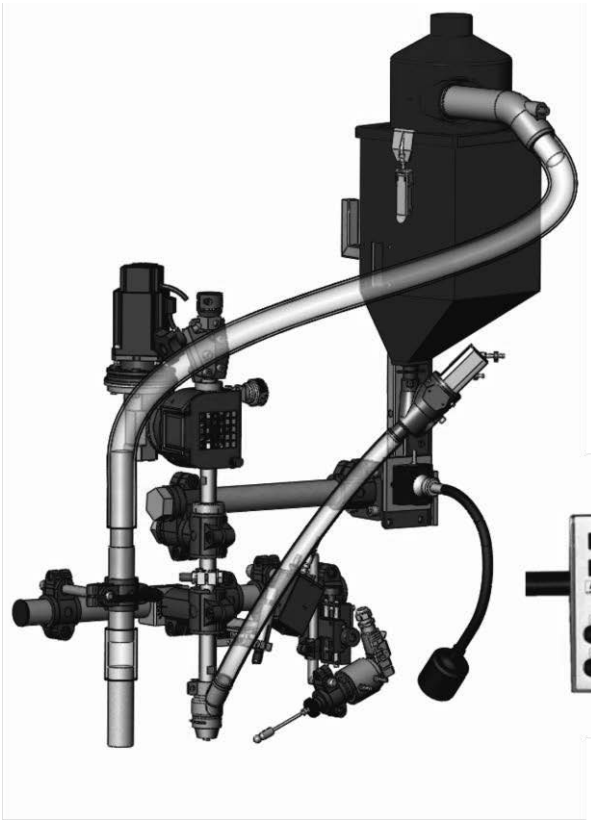
AUTOMATIC RESURFACING AND WELDING INSTALLATION BY SUBMERGED ARC

SUBARC 5 DX7

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE



Version
Subarc 5

Version
D2C SAW

EDITION : EN
REVISION : M
DATE : 11-2018

Instructions for use

REF: **8695 5240**

Original instructions

LINCOLN® ELECTRIC

Thank 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 will not be held responsible where items not recommended by themselves are associated with this product.

For your safety,there follows a non-restrictive list of recommendations or requirements, many of which appear in the employment code.

Finally we would ask you kindly to inform your supplier of any error which you may find in this instruction manual.

CONTENTS

INFORMATIONS

DISPLAYS AND PRESSURE GAUGES

The measuring devices or displays for voltage, current, speed, pressure, etc., whether analog or digital, should be considered as indicators

For operating instructions, adjustments, troubleshooting and spare parts see safety instructions for use and maintenance

ISEE No :	**MOTOVAR MV 20**	**8695 5832**
	STARMATIC 1003-1303 DC	**8695 5220**
	STARMATIC 1003-AC/DC	**8695 5225**
	STARMATIC 650 DC	**8695 9044**
	GMR DX7	**8695 5235**
	FLUX POUSSE	**8695 5900**
	D2C SAW	**8695 6051**

REVISIONS

REVISION B

DESIGNATION	PAGE
Reference change W000315701	13-15-17

REVISION C 05/06

DESIGNATION	PAGE
to change logos	-

REVISION D 02/07

DESIGNATION	PAGE
Complete update	-

REVISION E 10/07

DESIGNATION	PAGE
Update heavy duty	C20-21-22-23

REVISION F 11/08

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Complete update + spareparts newoffer	-

REVISION G 03/10

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Complete update Mise à jour complète	

REVISION H 04/12

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Spare part + Update (DM n°8115)	

REVISION I 04/14

DESIGNATION	PAGE
Update	All

REVISION J 07/14

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Update “D2C SAW”	All

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Update	D-25 ; F-50 ; F-51

REVISION L **09/16**

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Suppression of adaptation board	D - F

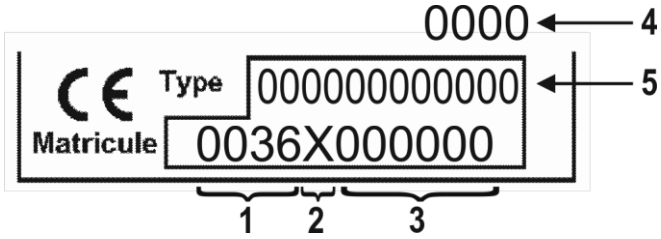
REVISION M **11/18**

DESIGNATION	PAGE
To change logos	

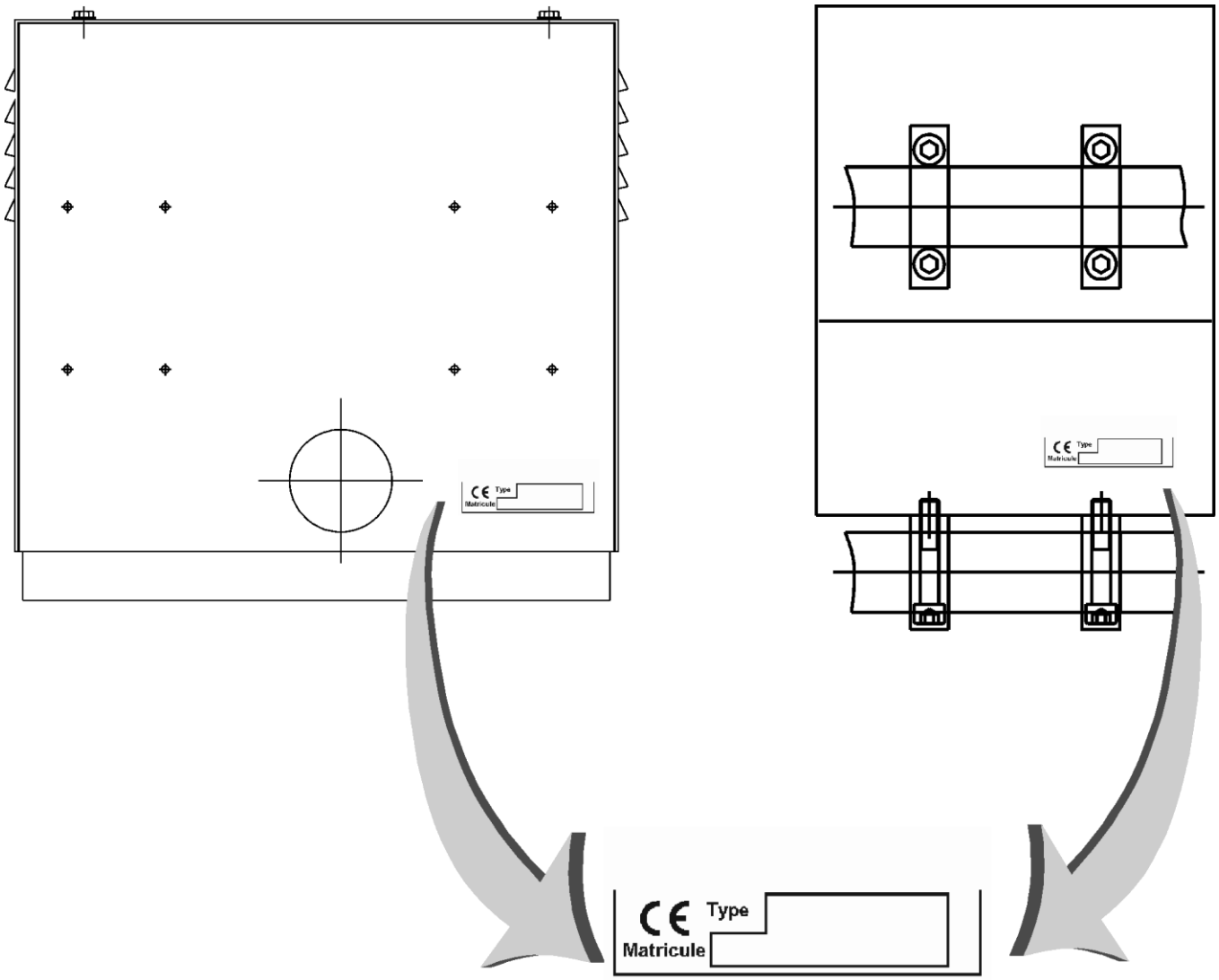
A - IDENTIFICATION

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

Quote this information in all correspondence.



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



B - SAFETY INSTRUCTIONS

For general safety instructions, please refer to the specific manual supplied with the equipment.

AIRBORNE NOISE

Please refer to the specific manual supplied with the equipment.

SPECIAL SAFETY INSTRUCTIONS

- After each intervention, make sure that all protective covers are correctly in place.

- Never remove the insulating plates under welding group and motor supports.

CAUTION : At the end of the spool, the wire may come out brutally (whiplash effect).

Risk of unwinding when changing an unemptied spool.
- BE CAREFUL with the weight of the spool.

- Put the spool spindle arms back in place after each intervention.

It is essential that the flux be changed after a maximum of three recyclings.If left longer than that, there may be serious risks of:.

- fine particles being emitted into the atmosphere, which might be inhaled,
- less effective welding,
- powder distributing devices being blocked

C - DESCRIPTION

1 - DESCRIPTION OF THE SYSTEM

The submerged arc welding installation is made up of the following:

- Welding head assembly
- Connecting bundle
- SA welding control console or
  a **Digital Control Cycle** control console: **D2C SAW**
- Power cabinet
- Power source
- Power cables
- Additional and optional equipment

A - POWER UNIT.

The power unit consists of 3 parts:

- A power part containing the transformers and their primary and secondary protections, connection terminals of the external and power supply safeties.
- An electronic part containing the variable speed unit for wire feed, the cycle board of the process and the connections of the power source, the console and the machine.
- A front panel for adjustments and welding cycle selection.

POWER SOURCE ADAPTATION:

Includ the accessories for power unit fixation on power source and the connections cables

B - CONTROL BOX **VERSION SUBARC 5**

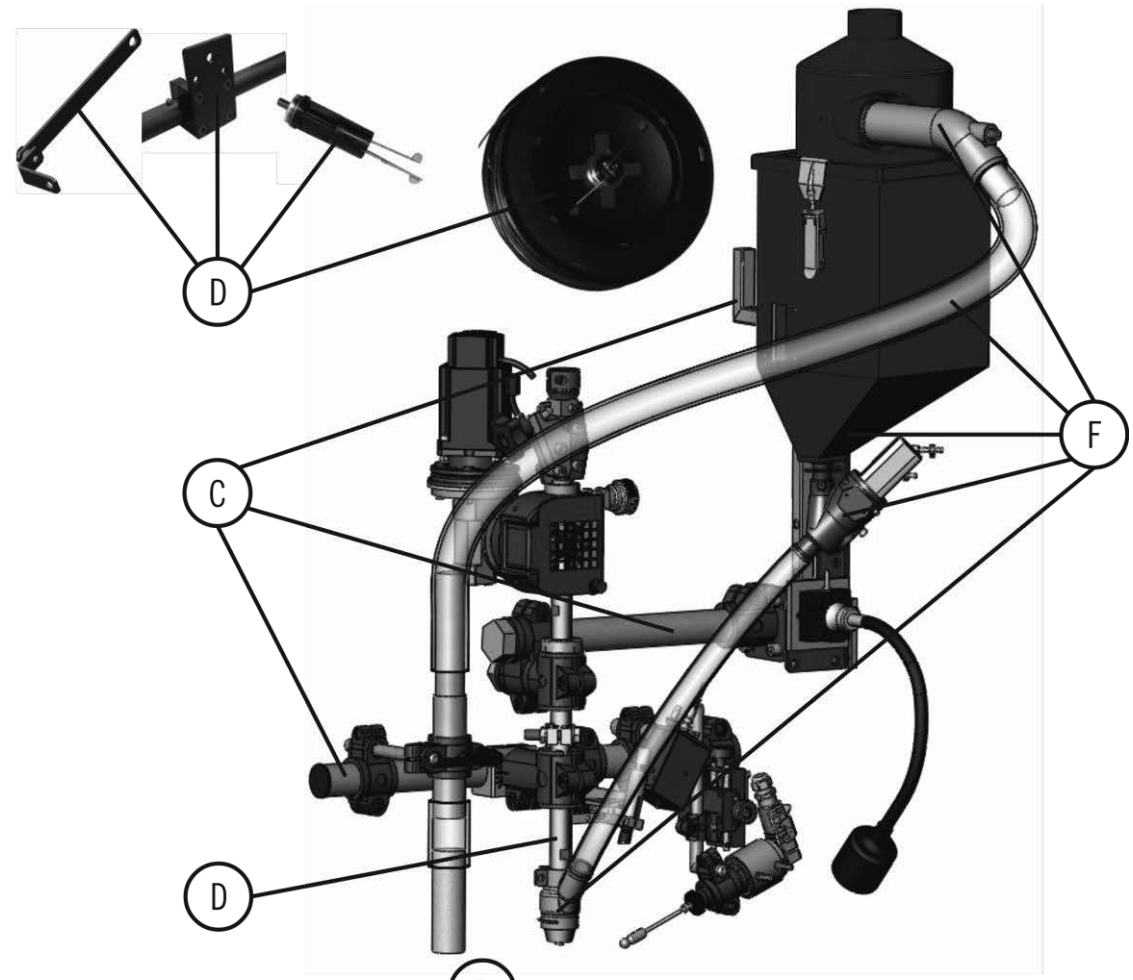
- The control box groups all the controls and visualizations needed by the operator during welding
- This box has a sheet steel casing. It can be attached on the rear or on bottom panel on a tube of diameter 42 mm using plastic collars.
- Front panel made of a screen printed sheet metal.

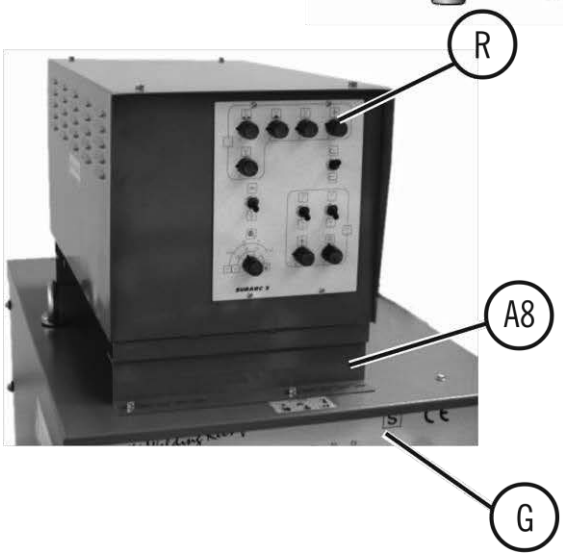
C - CONTROL UNIT, VERSION D2C

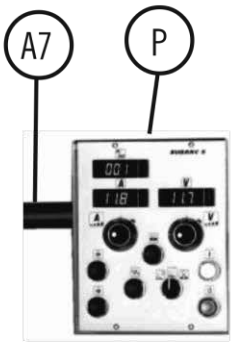
- The **D2C** control unit makes it possible to centralise the data (process and movement) and manage programs
- This unit is a metal box, which can be fixed from behind or below on a 42mm diameter tube using plastic rings.

Refer to the instructions for D2C SAW: 8695 6051

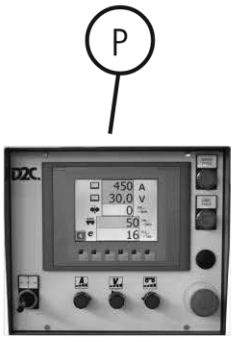
2 - COMPOSITION OF A BASIC SINGLE-WIRE SUBARC 5 INSTALLATION







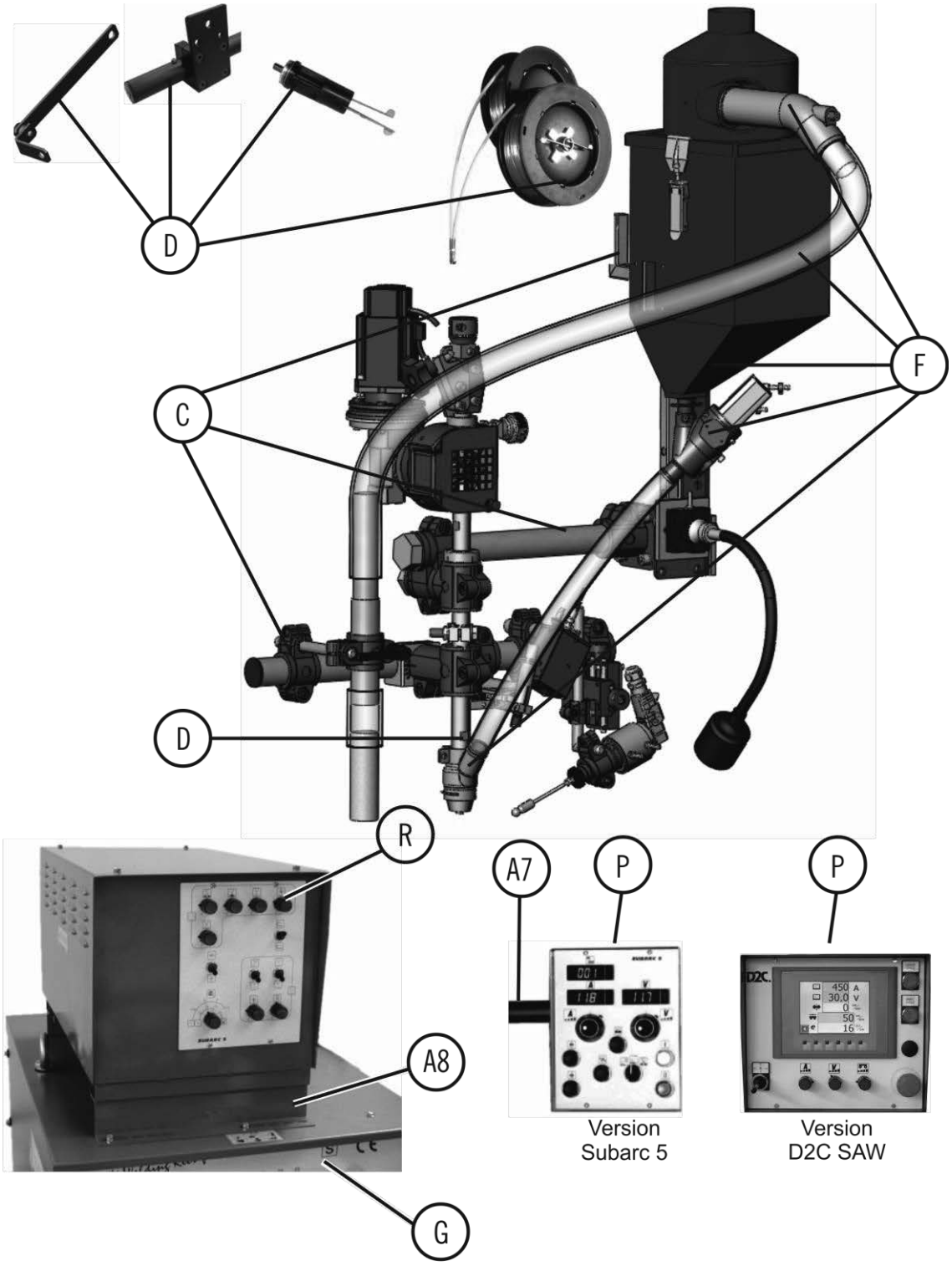
Version
Subarc 5



Version
D2C SAW

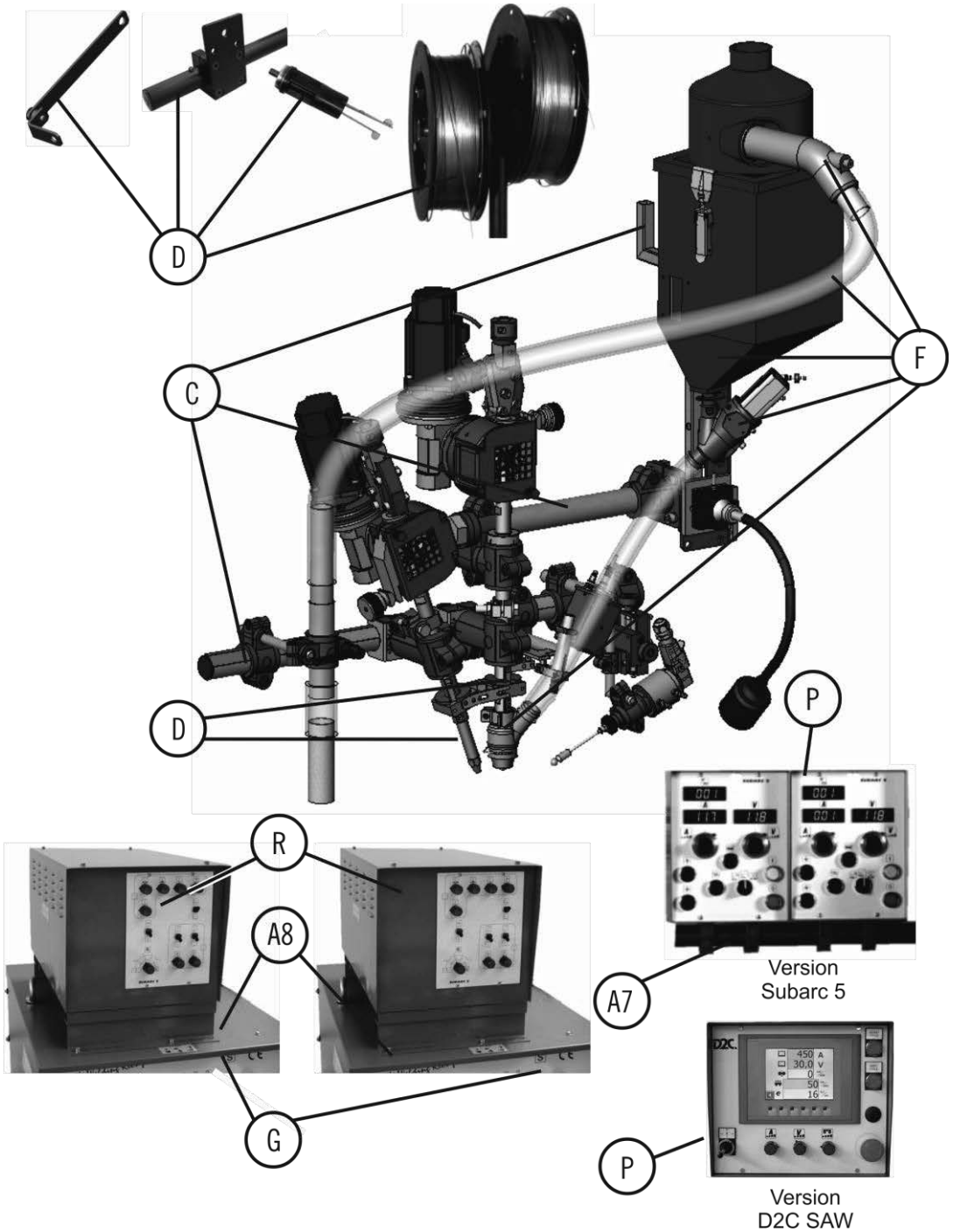
Ref.	Description		Part number
	SUBARC 5 DX7 SINGLE-WIRE BASE INCLUDING/		
R	- 1 **SUBARC 5 DX7** power cabinet		**W000315694**
P	- 1 **SUBARC 5** control panel - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089** **-**
	SUBARC 5 DX 7 control bundle	**length = 17m.**	**W000315696**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	Turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER ELEMENTS		
D	SEE INSTRUCTIONS RELATING TO FEEDER ACCESSORIES - 8695 5242		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION - 8695 5245		

3 - COMPOSITION OF A BASIC TWO-WIRE SUBARC 5 INSTALLATION



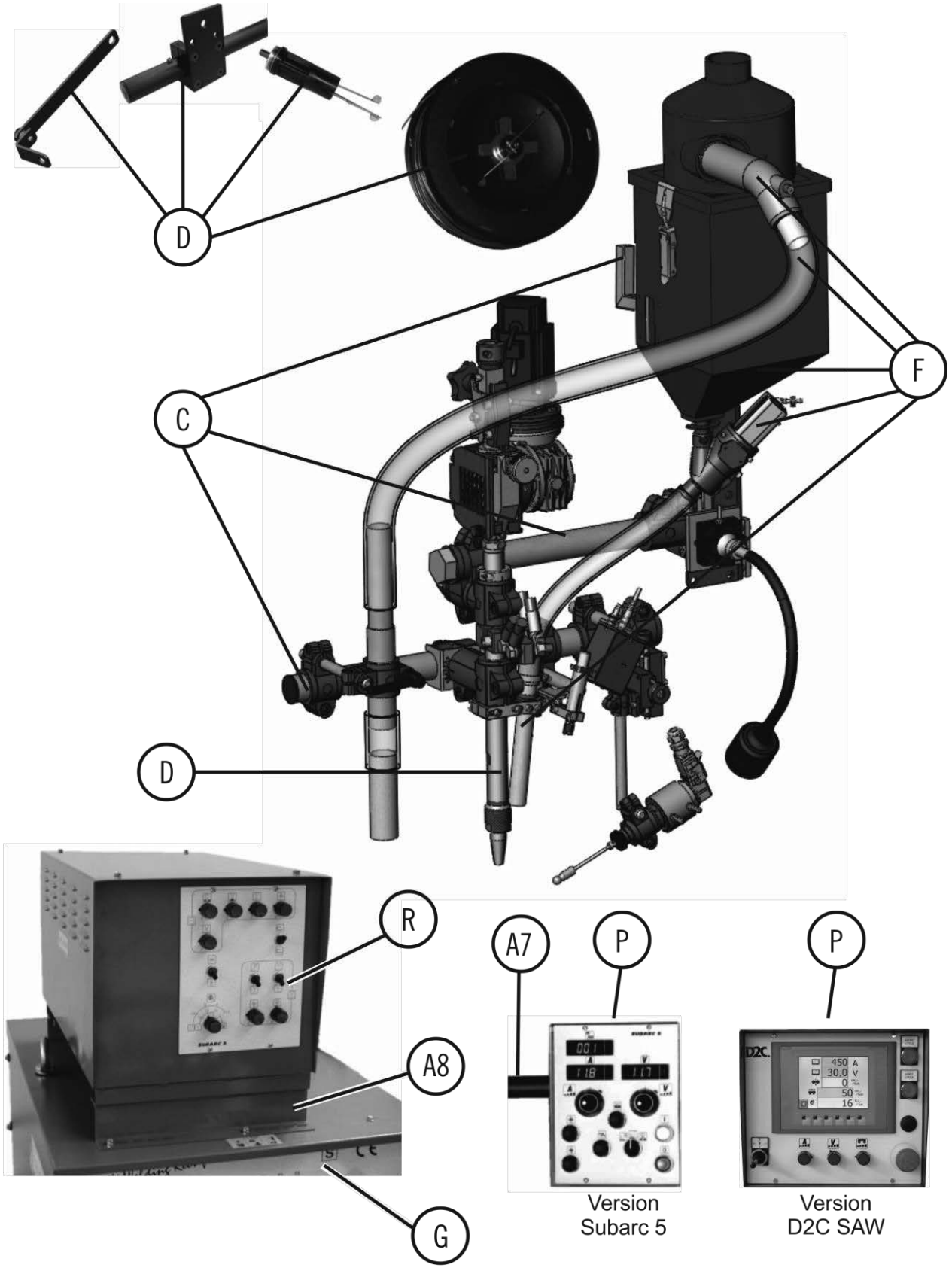
Ref.	Description		Part number
	SUBARC 5 DX7 TWIN-WIRE BASE INCLUDING:		
R	- 1 **SUBARC 5 DX7** power cabinet		**W000315694**
P	- 1 **SUBARC 5** control panel - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089** **-**
	SUBARC 5 DX 7 control bundle	**length = 17m.**	**W000237678**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	Turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER ELEMENTS		
D	SEE INSTRUCTIONS RELATING TO FEEDER ACCESSORIES 8695 5242		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION 8695 5245		

4 - COMPOSITION OF A BASIC TWINNED-ARC SUBARC 5 INSTALLATION



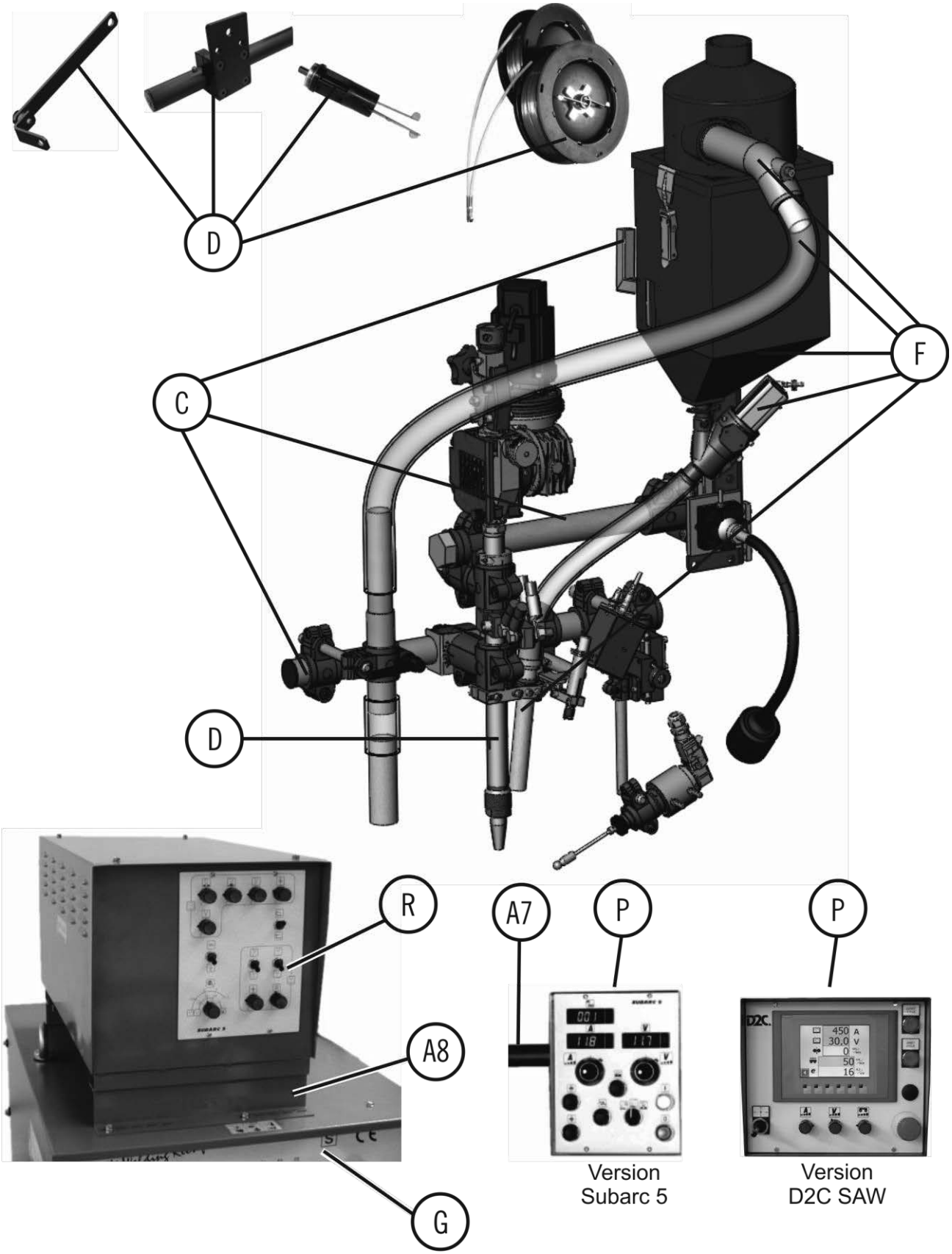
Ref.	Description		Part number
	SUBARC 5 DX7 TWINNED ARC BASE INCLUDING:		
R	- 2 **SUBARC 5 DX7** power cabinets		**W000315694**
P	- 2 **SUBARC 5** control panels - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089**
	- 2 SUBARC 5 DX7 control bundles	**length = 17m.**	**W000237678**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	- 1 turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER ELEMENTS		
D	SEE INSTRUCTIONS RELATING TO FEEDER ACCESSORIES 8695 5242		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION 8695 5245		

5 - COMPOSITION OF A BASIC HEAVY-DUTY SINGLE-WIRE SUBARC 5 INSTALLATION



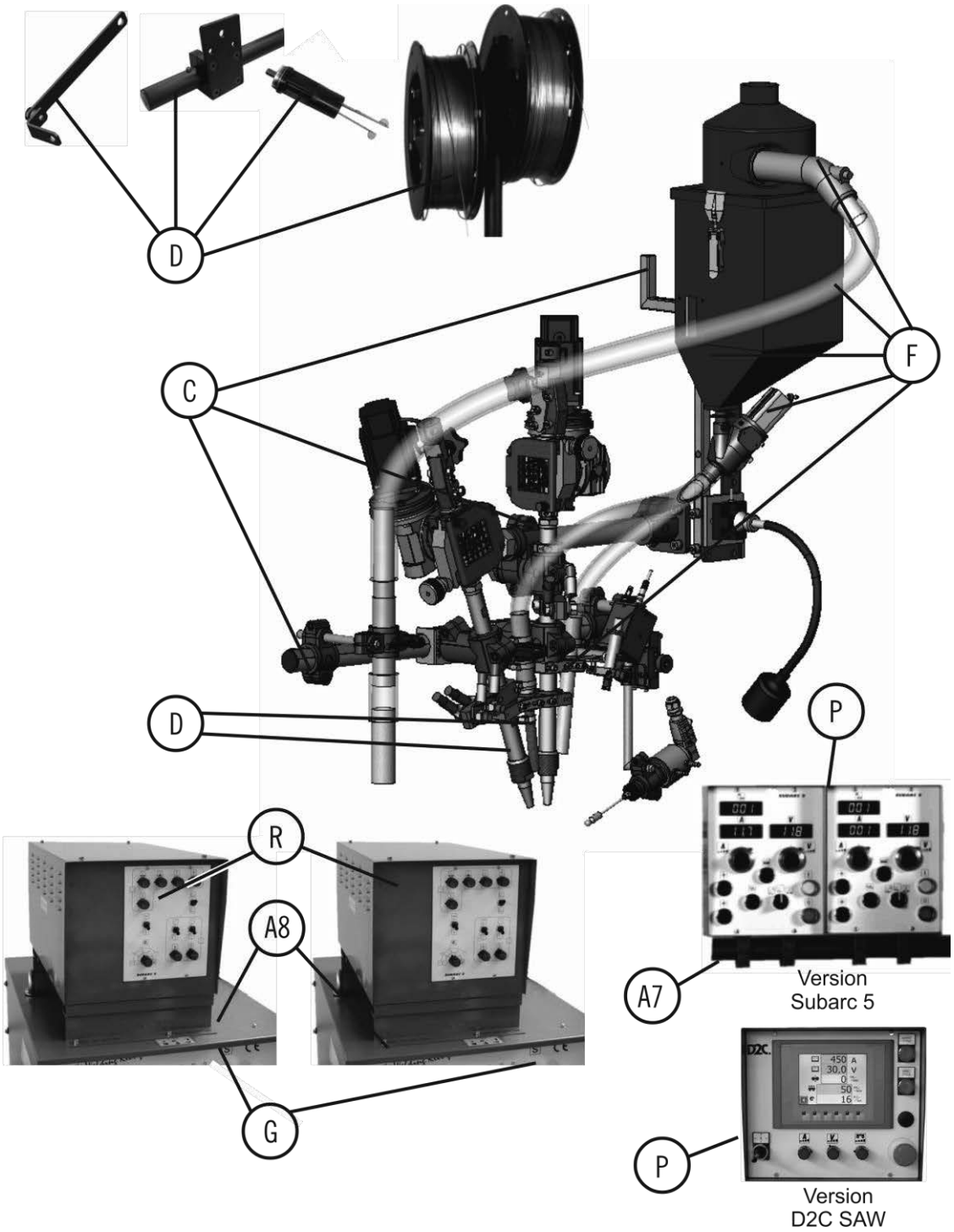
Ref.	Description		Part number
	HEAVY-DUTY SUBARC 5 DX7 SINGLE-WIRE BASE INCLUDING:		**length = 400 mm**
R	- 1 **SUBARC 5 DX7** power cabinet		**W000315694**
P	- 2 **SUBARC 5** control panels - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089** **-**
	SUBARC 5 DX 7 control bundle	**length = 17m.**	**W000315696**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	- 1 Turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER, DISTRIBUTION AND FLUX RECYCLING ELEMENTS		
D	SEE INSTRUCTIONS FOR HEAVY-DUTY ACCESSORIES, NO. 8695 5248		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION 8695 5245		

6 - COMPOSITION OF A BASIC HEAVY-DUTY TWO-WIRE SUBARC 5 INSTALLATION



Ref.	Description		Part number
	HEAVY-DUTY SUBARC 5 DX7 TWIN-WIRE BASE INCLUDING:		**length = 400 mm**
R	- 1 **SUBARC 5 DX7** power cabinet		**W000315694**
P	- 2 **SUBARC 5** control panels - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089** **-**
	SUBARC 5 DX 7 control bundle	**length = 17m.**	**W000315696**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	- 1 Turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER, DISTRIBUTION AND FLUX RECYCLING ELEMENTS		
D	SEE INSTRUCTIONS FOR HEAVY DUTY ACCESSORIES N°. 8695 5248		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION 8695 5245		

7 - COMPOSITION OF A BASIC HEAVY-DUTY TWINNED-ARC SUBARC 5 INSTALLATION



Ref.	Description		Part number
	HEAVY-DUTY TWINNED ARCS SUBARC 5 DX7 BASE MADE UP OF:		
R	- 1 **SUBARC 5 DX7** power cabinet		**W000315694**
P	- 2 **SUBARC 5** control panels - 1 control console, **D2C SAW** (see instructions 8695 6051)		**W000315089** **-**
	SUBARC 5 DX 7 control bundle	**length = 17m.**	**W000315696**
		length = 22m.	**W000315693**
	FASTENING OF THE WELDING HEAD ASSEMBLY TO THE MACHINE		
A7	- 1 Turning support tube assembly		**W000315104**
	DETAILS OF COMPONENTS OF THE TUBULAR HEAD		
C	SEE INSTRUCTIONS FOR SA TUBULAR HEAD NO. 8695 5260		
	DETAIL OF FEEDER, DISTRIBUTION AND FLUX RECYCLING ELEMENTS		
D	SEE INSTRUCTIONS FOR HEAVY DUTY ACCESSORIES N°. 8695 5248		
	DETAIL OF FLUX DISTRIBUTION AND RECOVERY ELEMENTS		
F	SEE INSTRUCTIONS RELATING TO FLUX DISTRIBUTION 8695 5245		

650A OPERATION - 100% DC		
G	**STARMATIC 650 DC**-400/440V power source	**W000315877**
A5	Adaptation for **SUBARC/STARMATIC 650 DC** - **1003 AC/DC** unit	**W000315069**
	4c x 25 mm² cable (power source supply)	**W000010105**
	d10 16-25 mm² universal lug	**W000010095**
	Secondary 1x95 mm² cable (3x17m or 2x22m) to be coupled in parallel for wire feeder + 2x10m to be coupled in parallel for the ground	**W000010142**
	d18 50-100mm² universal lug	**W000010640**

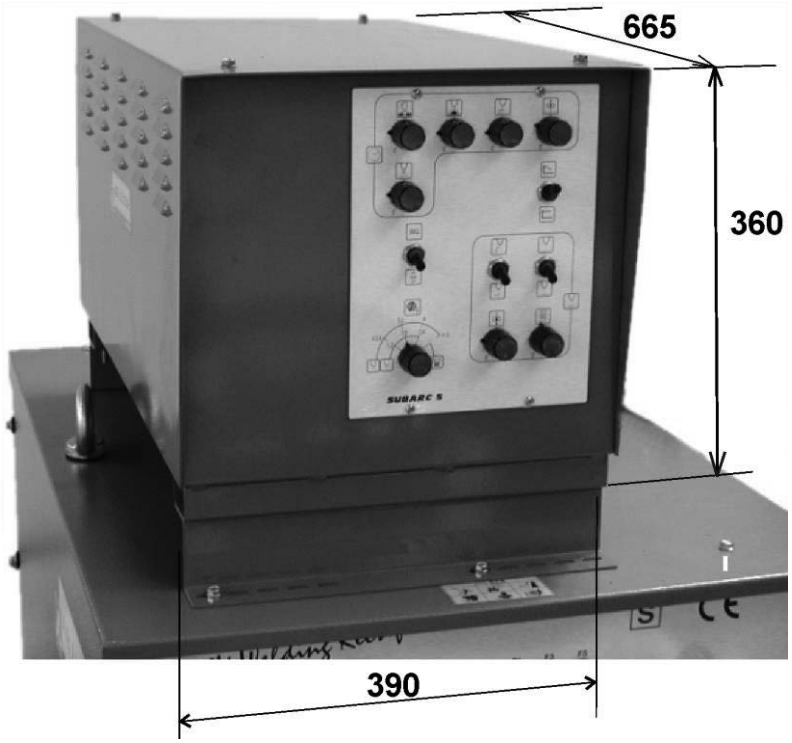
1000A OPERATION - 100% DC		
G	**STARMATIC 1003 DC**-400/440V power source	**W000315019**
A8	Adaptation for **SUBARC/STARMATIC 1003-1303DC** unit	**W000315070**
	4c x 25 mm² cable (power source supply)	**W000010105**
	d10 16-25 mm² universal lug	**W000010095**
	Secondary 1x95 mm² cable (3x17m or 2x22m) to be coupled in parallel for wire feeder + 2x10m to be coupled in parallel for the ground	**W000101142**
	d18 50-100mm² universal lug	**W000010640**

1300A OPERATION - 100% DC		
G	**STARMATIC 1303 DC**-400/440v power source	**W000315021**
A8	Adaptation for **SUBARC/STARMATIC 1303DC** unit	**W000315070**
	4c x 25 mm² cable (power source supply)	**W000010106**
	d18 50-100 mm² universal lug	**W000010095**
	Secondary 1x95 mm² cable (3x17m or 2x22m) to be coupled in parallel for wire feeder + 2x10m to be coupled in parallel for the ground	**W000010142**
	d18 50-100mm² universal lug	**W000010640**

DIRECT AND ALTERNATING CURRENT OPERATION - 100% - AC/DC		
G	**STARMATIC 1003 AC/DC**-400/440v power source	**W000315677**
A8	Adaptation for **SUBARC/STARMATIC 1003 AC/DC** unit	**W000315069**
	4c x 35 mm² cable (power source supply)	**W000010106**
	d10 16-25 mm² universal lug	**W000010095**
	Secondary 1x95 mm² cable (3x17m or 2x22m) to be coupled in parallel for wire feeder + 2x10m to be coupled in parallel for the ground	**W000010142**
	d18 50-100mm² universal lug	**W000010640**

8 - DIMENSIONS

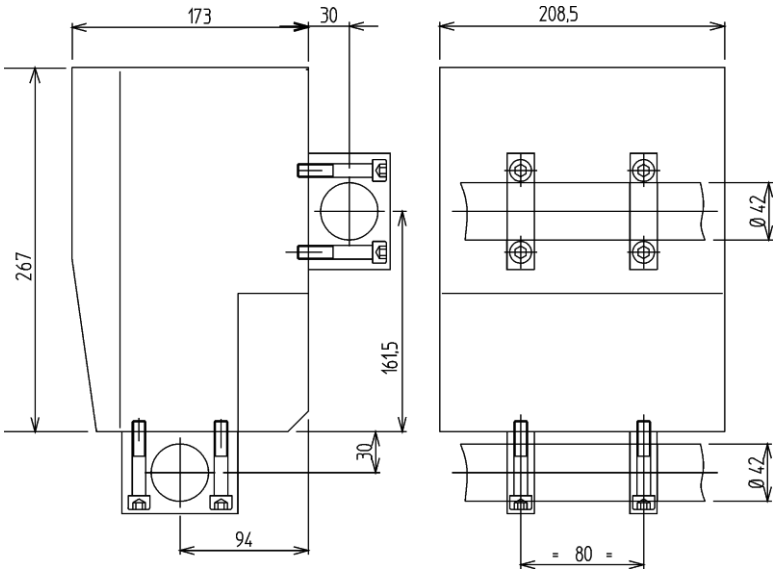
Pc3



Weight = **44.5 Kg**

CONTROL UNIT **VERSION SUBARC 5**

PC4-2



Weight of unit alone = **5.250 Kg**

D - ASSEMBLY CONNECTION

1 - PREREQUISITES TO THE INSTALLATION (WITHOUT POWER SOURCE)

- Have an electric 230 – 400 or 440 V 50/60 Hz power supply with 600VA power.
- Have an air pressure supply of 4 to 6 bar.

2 - INSTALLATION

- Place the power unit close to the power source taking care not to clog the air admissions.
- Attach the control console near the operator.
- Fix the feed head assembly to the machine.

Do not forget the plate and the insulating disks.
(The latter isolate electrically the wire feed unit which is at the welding potential)

3 - CONNECTION

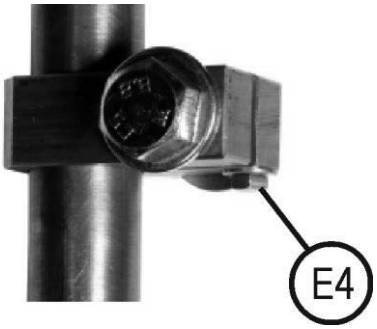
On the head:

- - Connect the cable equipped with a 25-pins plug to the control box. (version **SUBARC 5**)

- See electrical diagram supplied with the machine (version **D2C SAW**)

- Connect the cable with a female connector to the feed motor.

- Connect the cable for arc voltage measurement to the power lead item 4

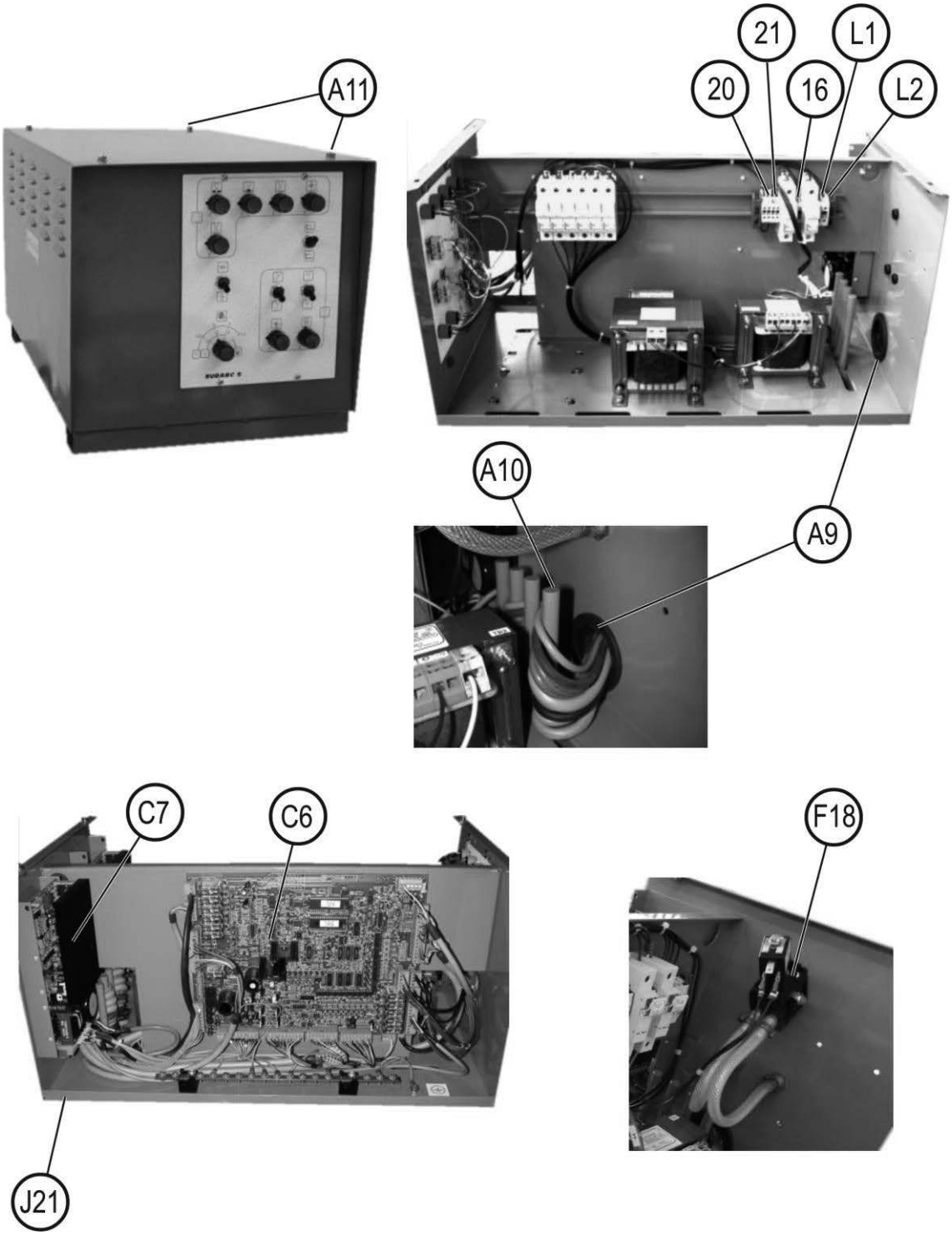


- Connect the welding current cable to the power lead using a cable of sufficient diameter for the welding intensity.

CONNECT THE POWER SOURCE:

Refer to the instructions of the power source used for connections:

STARMATIC 650 DC	ISEE N°8695 9044
STARMATIC 1003 AC/DC	ISEE N°8695 5225
STARMATIC 1003/1303 DC	ISEE N°8695 5220


A11
21
L1
20
16
L2
A10
A9
C7
C6
F18
J21

In the power unit:

- Remove the cover of the power unit by unscrewing the 4 screws item A11.

- Insert into the power unit through the grommet item A9

  - all the cables coming from the welding head (except welding cables)
  - the supply cable delivered with the installation (If more length is required, use a 3x2,5 mm² cable)
  - the control harness previously connected to the power source

- Anchor these cables by inserting them between the metallic rods item A10

CYCLE BOARD SIDE item C6:

- Connect the console cable to J6, J9 and J10 of the cycle board.
- Connect the cable for arc voltage measurement to J11 of the cycle board.
- Connect the control cable of the power source to J15 of the cycle board.

(for a **STARMATIC 800AC**)

- Connect the wires of the tacho generator to connector J1 (item: 8 and 9) shield rep10 of the variable speed unit C7.
- Connect the control cable of the power source to J2 of the cycle board.

TRANSFORMER SIDE:

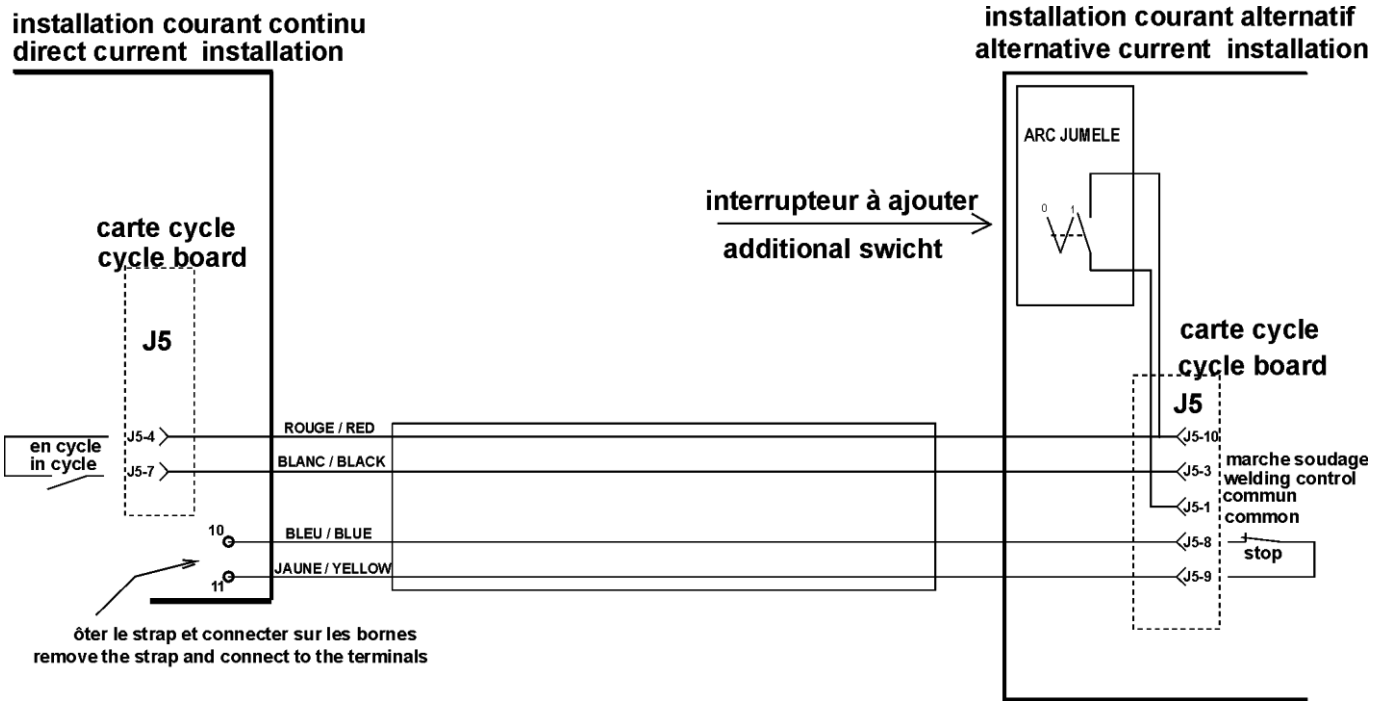
- Connect the wires of the cable of the wire feed motor to terminals 20 and 21.
- Fit solenoid valve F18
- Connect the wires of the solenoid valve cable to the fuse holders F7 and to terminal 16.
- With valve option for recycling, connect the wires of the recycling solenoid valve cable to fuse holder FU8 and to terminal 16.
- Connect the feed wires to terminals L1-L2 and the green/yellow wire to the equipotential connecting copper rod
- Connect the feed wires to terminals L3-L4 and the green/yellow wire to the equipotential connecting copper rod

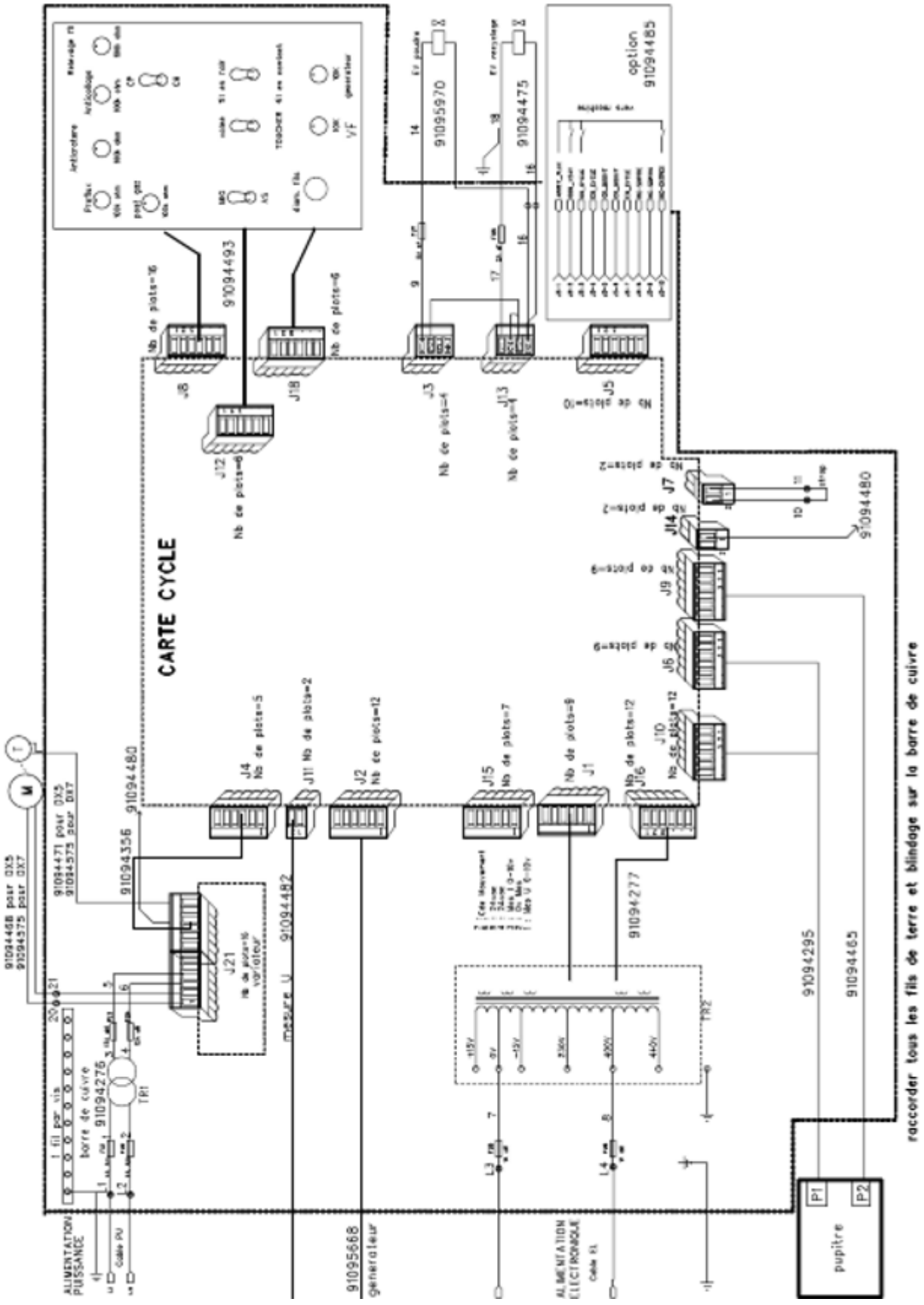
- Adjust coupling of transformers TR1 and TR2 according to the mains voltage.

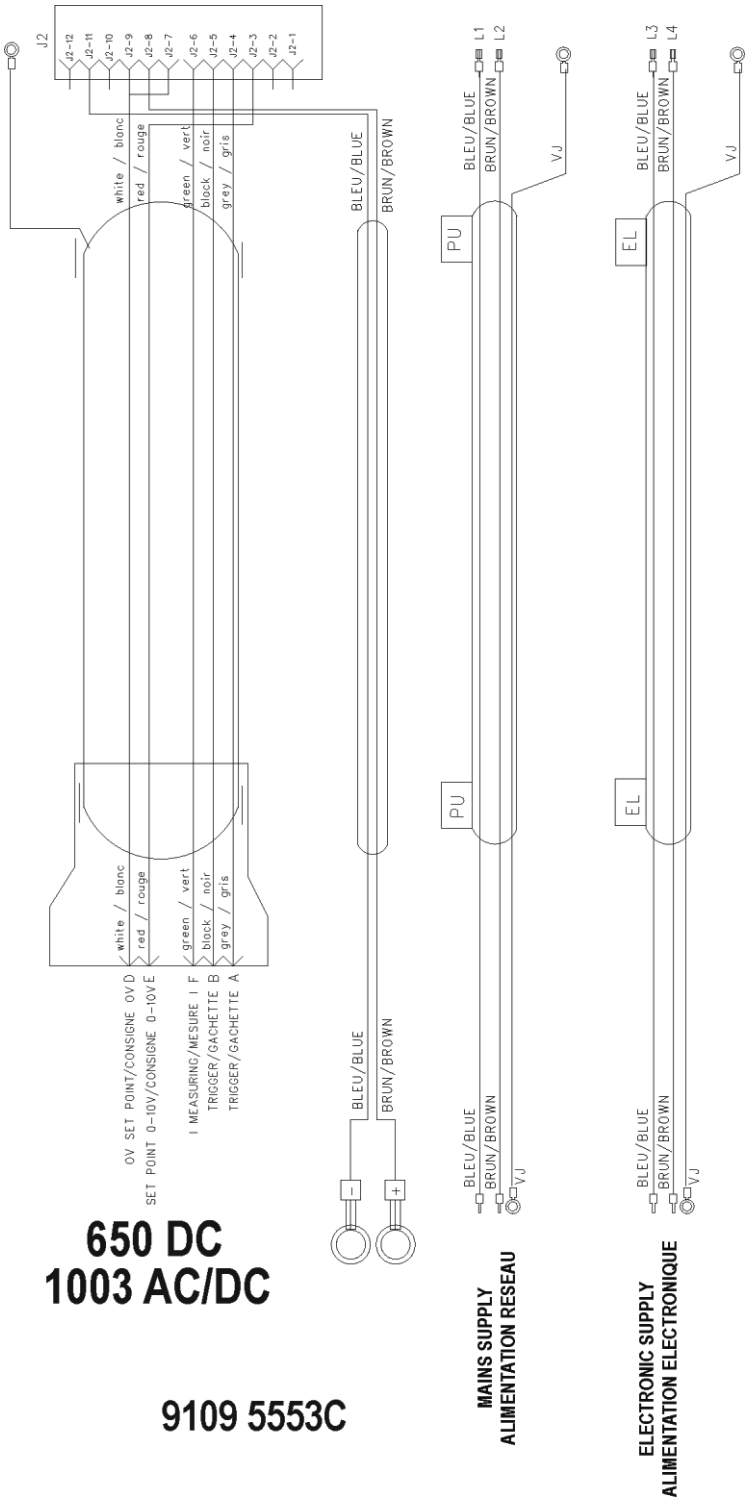
TWIN ARCS AC+DC OPTION W000315110

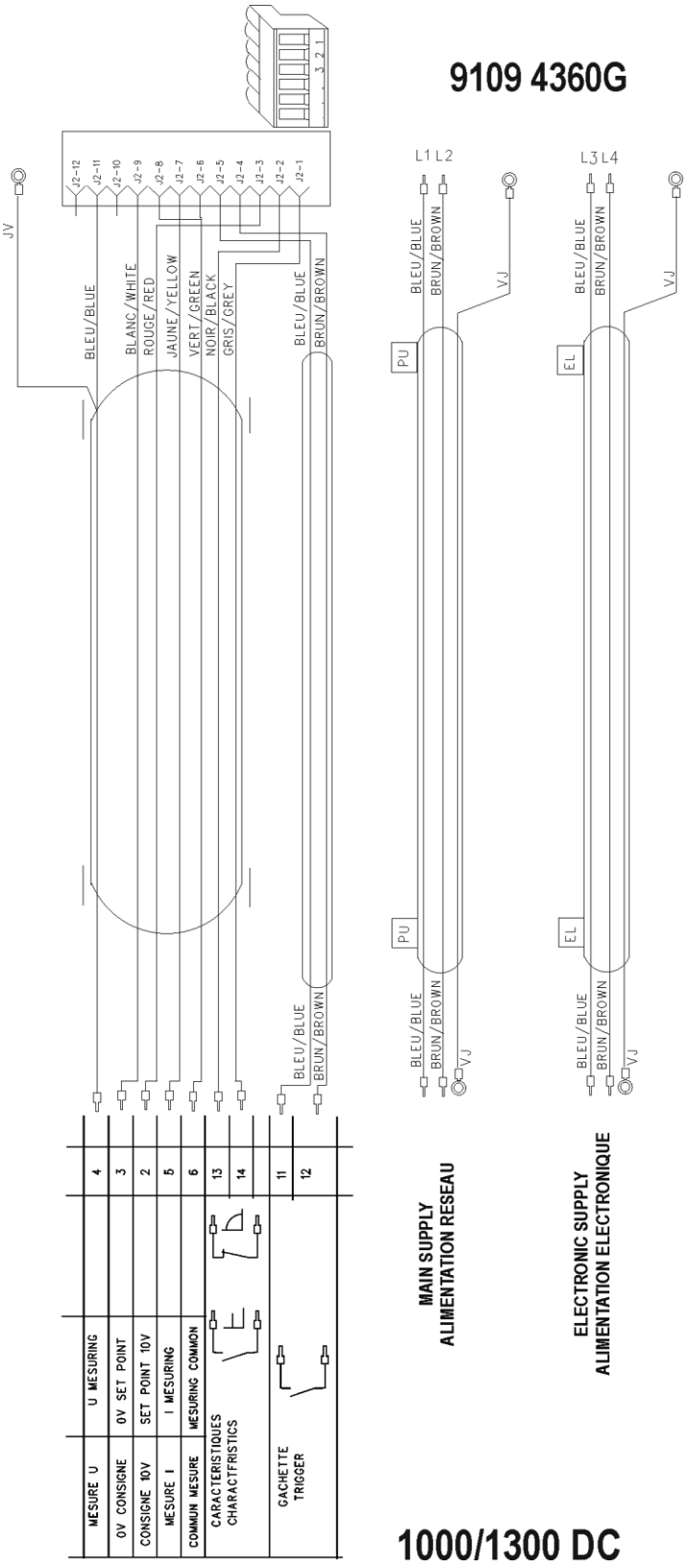
When using 2 installations of twin arcs with a DC power source and an AC power source, connect the 2 power units using the cable delivered as shown in the diagram below

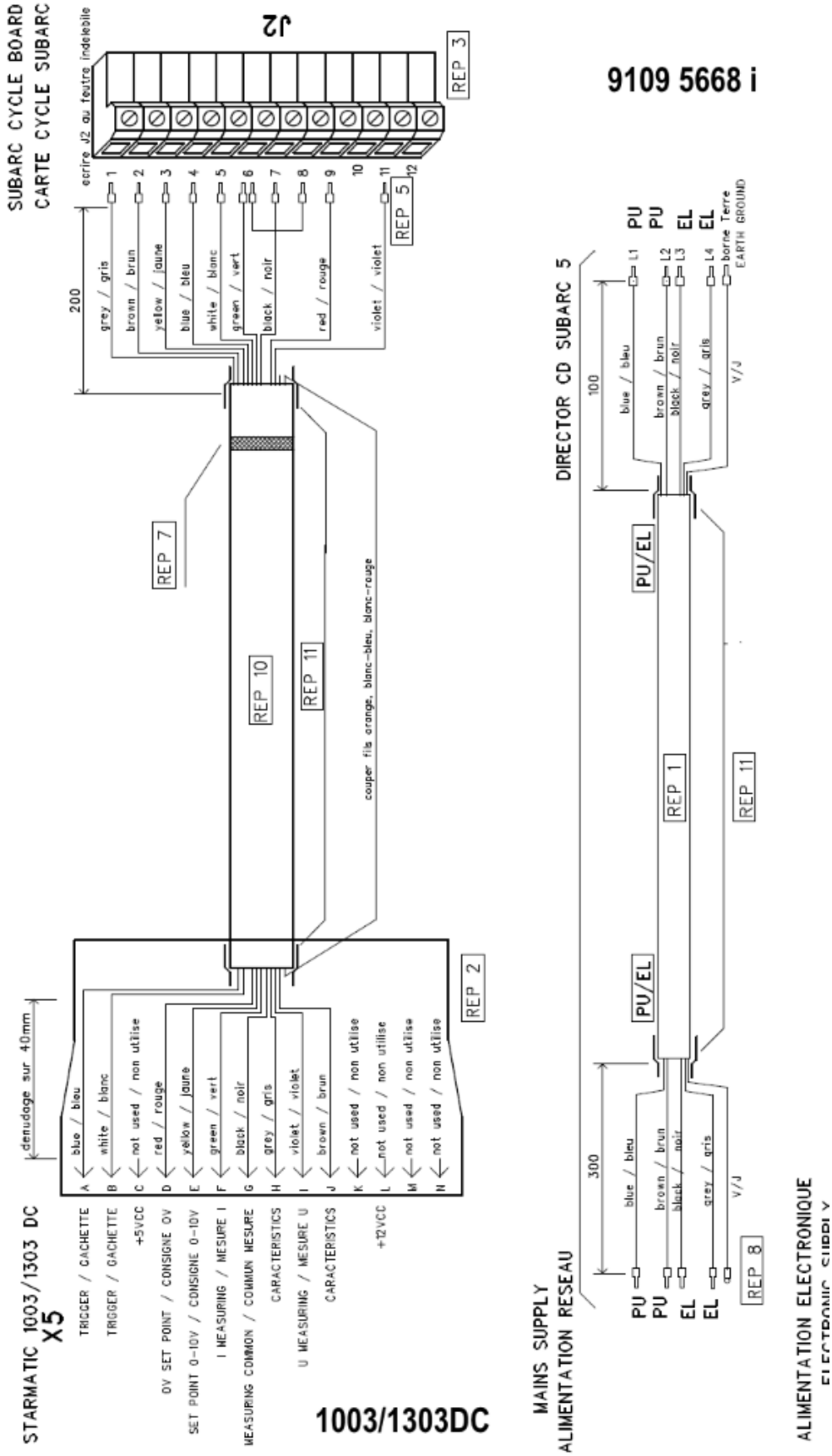
Install the switch delivered with the option on the front panel of the power unit of the AC installation (if necessary, drill the front panel of the unit)




CARTE CYCLE
option 91094485
91095970
91094475
91094493
91094480
91094356
91094482
91094277
91094295
91094465
91095668
91094276
J1
J2
J3
J4
J5
J6
J7
J8
J9
J10
J11
J12
J13
J14
J15
J18
J21
TR1
pupitre
P1
P2
raccorder tous les fils de terre et blindage sur la barre de cuivre


J2
J2-12
J2-11
J2-10
J2-9
J2-8
J2-7
J2-6
J2-5
J2-4
J2-3
J2-2
J2-1
white / blanc
red / rouge
green / vert
black / noir
grey / gris
BLEU/BLUE
BRUN/BROWN
OV SET POINT/CONSIGNE OV D
SET POINT 0-10V/CONSIGNE 0-10V E
I MEASURING/MESURE I F
TRIGGER/GACHETTE B
TRIGGER/GACHETTE A
650 DC
1003 AC/DC
9109 5553C
PU
L1
L2
VJ
MAINS SUPPLY
ALIMENTATION RESEAU
EL
L3
L4
ELECTRONIC SUPPLY
ALIMENTATION ELECTRONIQUE


9109 4360G
JV
BLEU/BLUE
BLANC/WHITE
ROUGE/RED
JAUNE/YELLOW
VERT/GREEN
NOIR/BLACK
GRIS/GREY
BLEU/BLUE
BRUN/BROWN
J2-12
J2-11
J2-10
J2-9
J2-8
J2-7
J2-6
J2-5
J2-4
J2-3
J2-2
J2-1
3 2 1
L1 L2
L3 L4
PU
EL
VJ
MAIN SUPPLY
ALIMENTATION RESEAU
ELECTRONIC SUPPLY
ALIMENTATION ELECTRONIQUE
MESURE U
U MESURING
0V CONSIGNE
0V SET POINT
CONSIGNE 10V
SET POINT 10V
MESURE I
I MESURING
COMMUN MESURE
MESURING COMMON
CARACTERISTIQUES
CHARACTFRISTICS
GACHETTE
TRIGGER
4
3
2
5
6
13
14
11
12
1000/1300 DC



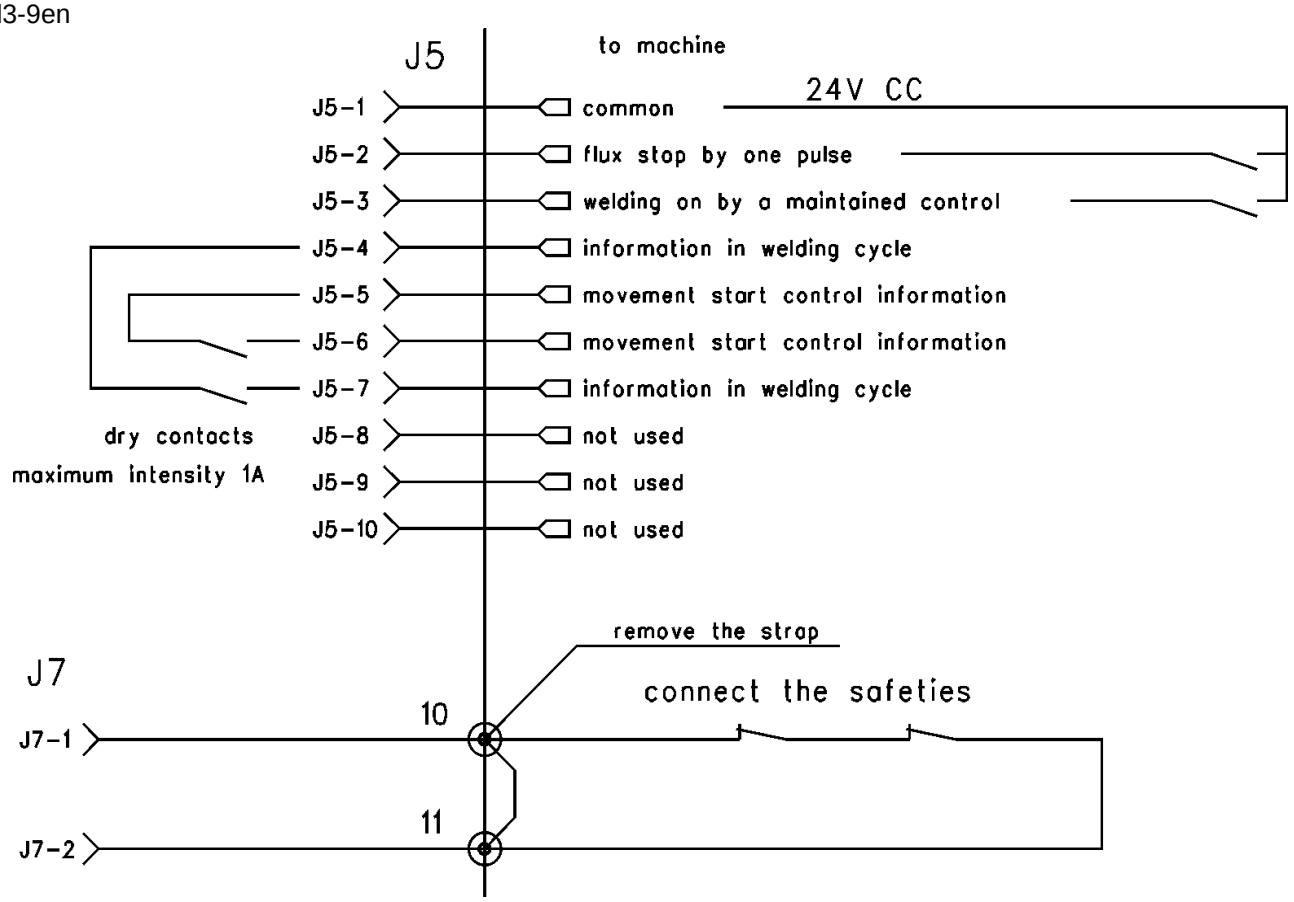
- For **STARMATIC** power sources, connect the following wires according to layout.
- For other power sources, do not hesitate to contact us.

Connect the electronic power supply to a permanent source of current to keep the settings in the memory.

MACHINE CONNECTION

- If you wish to integrate installation to a machine cycle, install a connection between the machine and installation **SUBARC 5** connect to J5 of the cycle board (see layout).

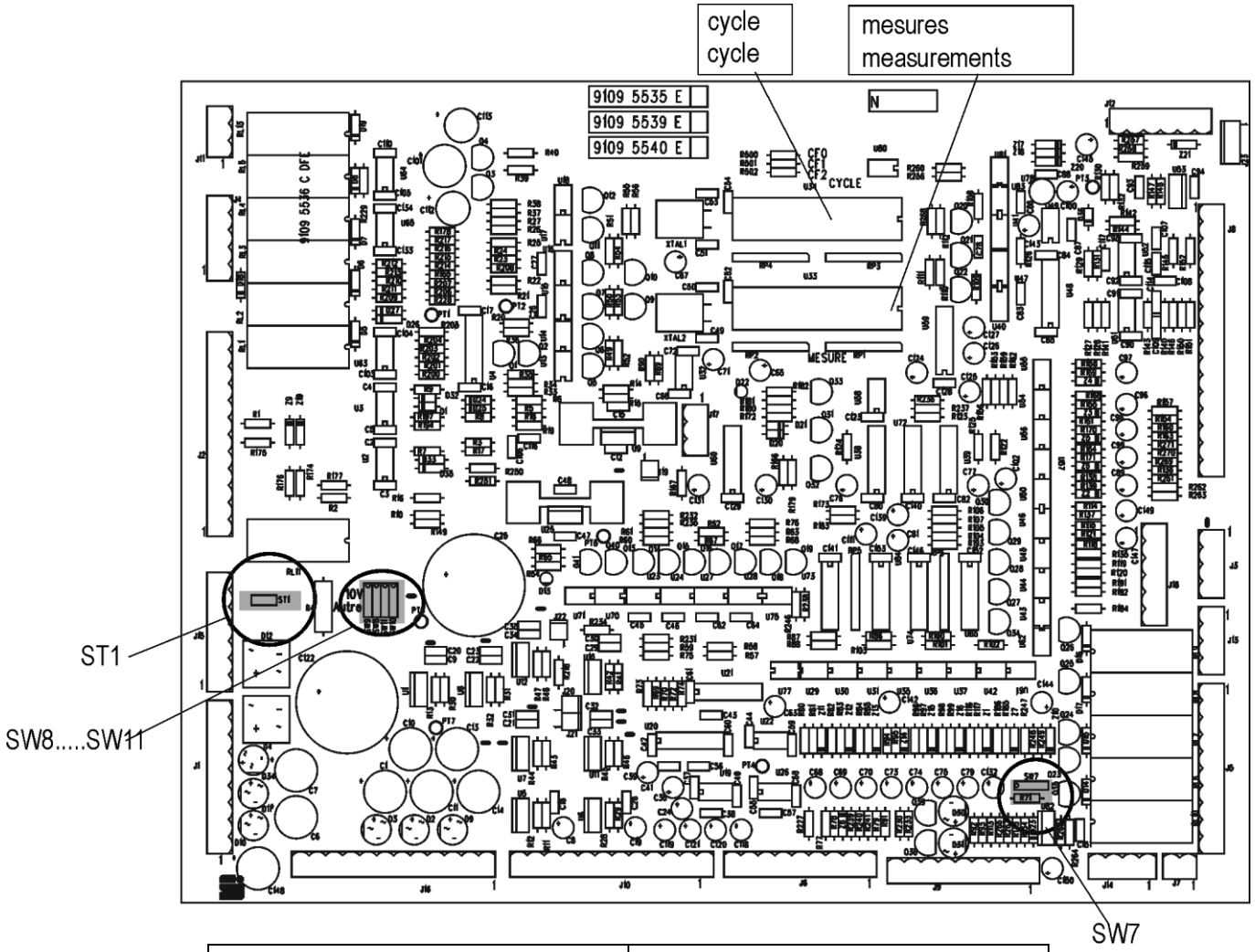
Pd3-9en

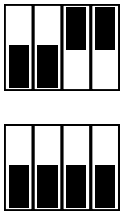
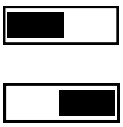
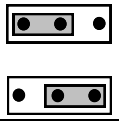


EXTERNAL SAFETIES

- Two terminals 10 and 11 are available for the connection of the external safety.
- For use disconnect the strap.
- In order to operate the contact must be closed.

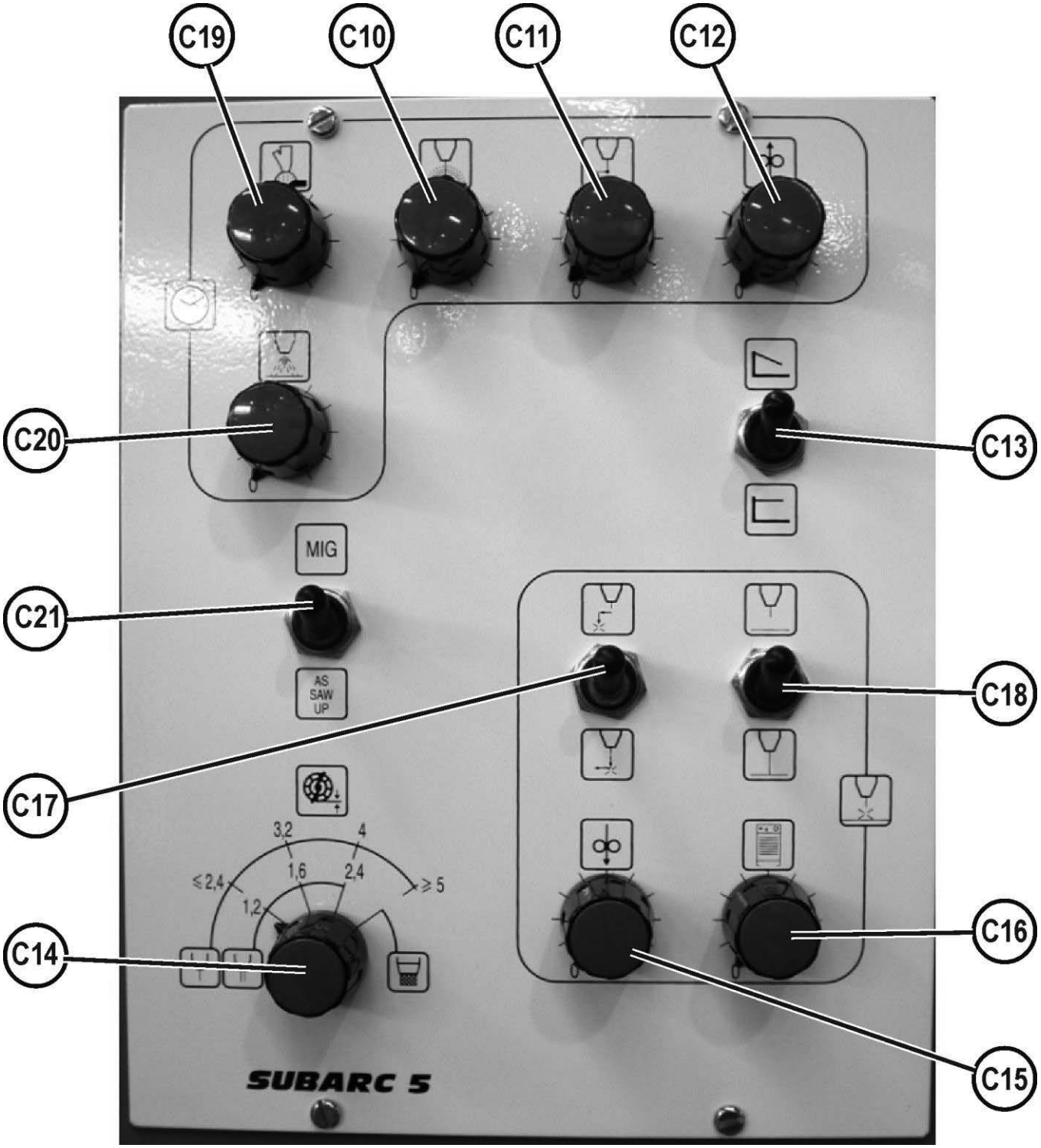
4 - CYCLE BOARD CONFIGURATION (ITEM C6)



SW8 .....SW11 	**STARMATIC 650 DC +STARMATIC 1003 AC/DC** **STARMATIC 1003 DC STARMATIC 1303 DC**
SW7 	Slow speed range 0,17 à 4,50 m/mm High speed range 0,6 à 15 m/mm
ST1 	Torch polarity au **+** Torch polarity au **–**

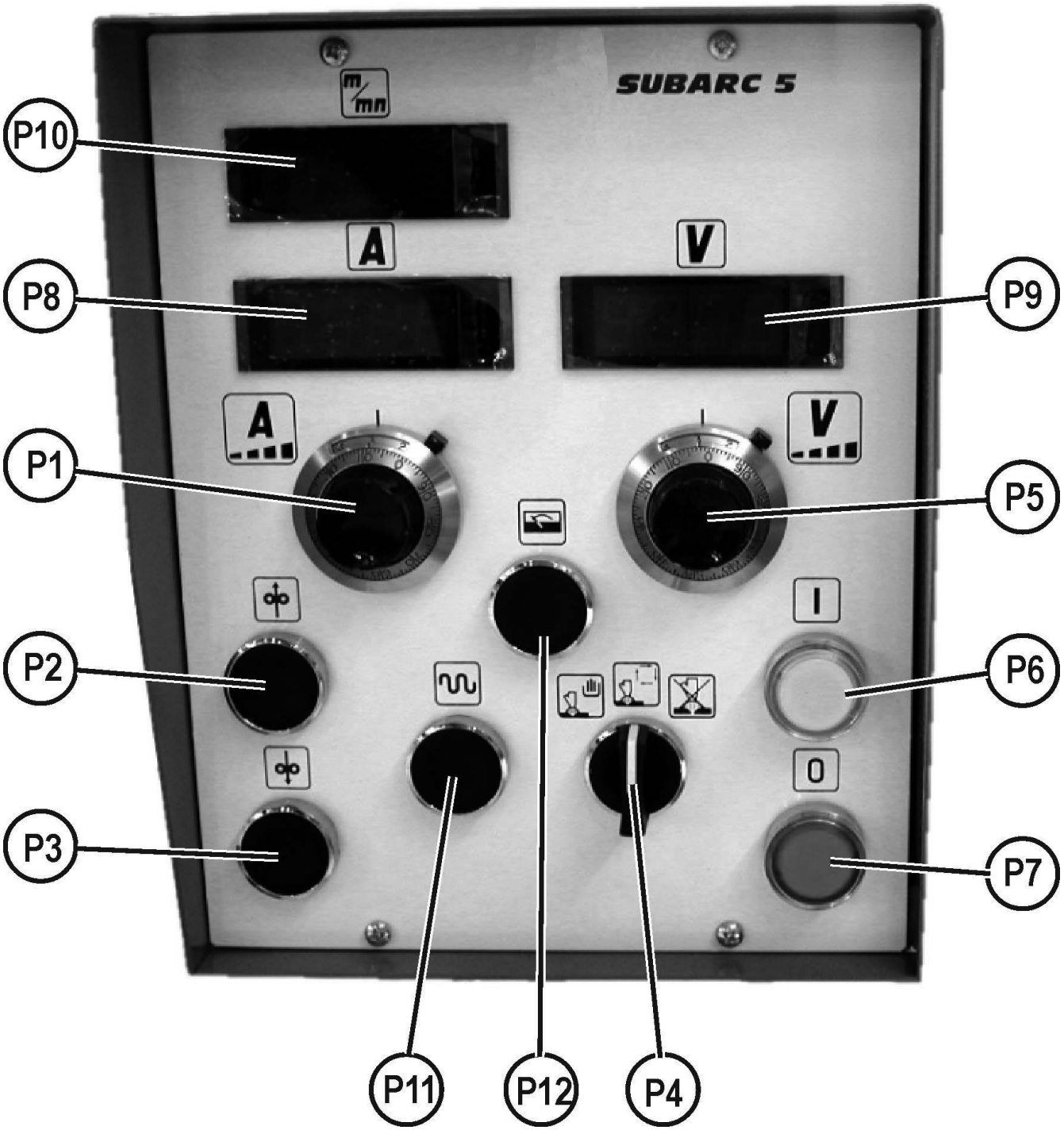
E - OPERATOR MANUAL

1 - FRONT PANEL OF THE POWER UNIT



C10	End of cycle crater filler timer 
C11	End of cycle burn off timer 
C12	End of cycle wire retract timer 
C13	Selection of the characteristics - slooping  - constante 
C14	Wire diameter selection 
C15	Wire speed striking adjustment 
C16	Power source striking adjustment 
C17	Selection - Indirect movement start  - Movement start with arc established 
C18	Selection of ignition with the wire - Cold start  - Hot start 
C19	pre-flux or pre-gas timeout 
C20	post-gas timeout MIG/MAG 
C21	Selection SAW or MIG/MAG  

2 - CONTROL BOX



P1	Welding current adjustment 
P2	Wire feed up 
P3	Wire feed down 
P4	Selection :  Flux test (manual)  Flux (auto)  Flux stop (during cycle)
P5	Voltage adjustment welding 
P6	Welding ON 
P7	Welding OFF 
P8	Welding current display unit
P9	Welding voltage display unit
P10	Wire speed display unit 
P11	Wire high speed button 
P12	Button for the initial display of V and A 

3 - CONTROL UNIT, VERSION D2C SAW

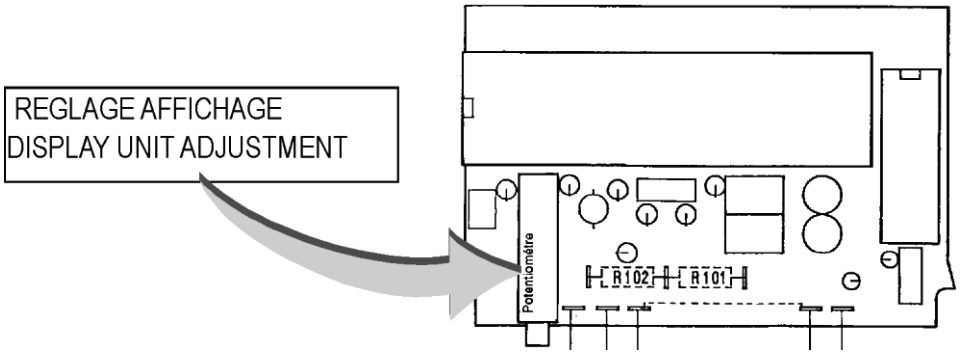
Refer to the instructions for D2C SAW: 8695 6051

4 - START-UP ON POWER UNIT

Switch on the installation.
Check the direction of rotation of the wire feed motor.
In order to reverse the direction of rotation :
Interchange the motor wires
Interchange the wires of the tacho generator.(on **SUBARC 5**)

Adjustment of U and I display units :

- Switch off the installation.
- Then switch on again keeping the stop push-button pressed in and by turning the flux switch to the flux stop position (to the right)
- After switching on: release the buttons
- **No button is to be touched during the following adjustment.**
- Open the console and adjust:
- The display unit of I to 1500 A
- The display unit of U to 100,0V



After the adjustment, press the wire feed button then the raising button, the values on the display units change.

Selection of the generator :

- The wire raising button allows you to increment.
- The wire feed button allows you to decrement.
- The ON button makes it possible to validate the choice of the generator.
- The display unit of A indicates the generator selection (table below)
- When the generator is selected the display unit of V indicates 100 V.

I DISPLAY UNIT	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
POWER SOURCE STARMATIC	**650 DC**	**1000 DC**	**1300 DC**			**800 TH**	**600 TH**			**1003 AC/DC**	**1003 DC**	**1303 DC**	2X **1003 DC** en //		

Switch on the installation.

5 - START-UP SAW DC AND AC WELDING

Switch on the installation (according to the different types of connection)

Power unit adjustment

Select the Ø of the welding wire by C14 

Select C21 on AS 

Select the mode by C13  Drooping

 Constante

Select the type striking by C18:  Cold striking

 Hot striking

Do not use with the alternating current generators.

Select the type of movement start by C17:  indirect

 with contact

Adjust the wire speed on striking  by C15

Adjust the power of the power source on striking by C16 

Preadjust the cycle end timer

 pre-fulx timet C 19

 Burn off timer

 Crater filler timer

 Wire retract timer C12

NOTE : Preadujst C10, C11, C15, C16 with a low value and readjust after the first welding

6 - PREPARATIONS BEFORE WELDING ON CONTROL UNIT

NB: FOR THE CONTROLS OF **D2C SAW** SEE INSTRUCTIONS 8695 6051

MANUAL CONTROLS

 wire feed up

 wire feed down

 hight wire feed speed.

 flux supply

PREPARATION

Adjust the position of wire lead in with the slides
Make sure that the flux reserve into the tank is sufficient to cover totaly the welding lay.

DOES NOT OPERATE WITH THE ALTERNATING CURRENT GENERATORS.

If C18 is in position  :
Feed wire to do contact with the workpiece
During wire feed, the display unit U P9 displays a value, as soon as the electric contact with the part is detected, the display unit displays 0 and wire feed stops.
Pre-adjustment of V and A parameters
Press on P12, parameters V and A are displayed
Modify P1 and P5 to adjust the required values

7 - SAW WELDING CONTROL OF VERSION SUBARC 5

Press P6 [I] and keep it pressed in (if you do not want to use pre-flux C19) ⇒ the flux flows
When the flux is sufficient around the point of impact of the wire, release P6 : the welding can start.
Before the welding starts up the flux flows for the duration of the timeout (adjustment by C 19).
Once welding is established, improve the adjustments of US and IS with potentiometers P1 and P5

Press P7 [O] to stop welding

INFORMATION

Storing the welding parameters

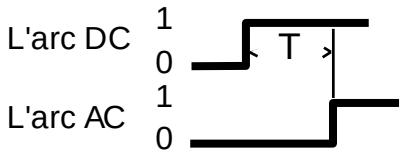
It is possible to store the welding parameters by pressing P6 during welding
After welding stops, the parameters taken into account during the pulse are restituted on the display units

Flux

It is possible to stop the flux flow before the end of welding by selecting position with P4 

TWIN ARCS AC + DC

Adjust the starts of the two arcs



T = timeout by C 19 of AC arc

The DC arc is controled by push-button P6 or the external control (diagram E52), after the timeout C19 of AC arc, the welding of Ac arc is controled automatically.

8 - SA WELDING, CONTROL OF VERSION D2C SAW

Refer to the instructions for D2C SAW: 8695 6051

9 - MIG WELDING ADJUSTEMENT

Switch on the installation (according to the different types of connection)

Power unit adjustment

Select the Ø of the welding wire by C14 

Select C21 on MIG 

Select the mode by C13  Drooping

 Constante

Select the type striking by C18:  Cold striking

Select the type of movement start by C17:  indirect

 with contact

Adjust the wire speed on striking  by C15

Adjust the power of the power source on striking by C16 

Preadjust the cycle end timer

 pre-fulx timet C 19

 Burn off timer

 Crater filler timer

 Wire retract timer C12

 post-gas timer C20

10 - PREPARATIONS BEFORE WELDING ON CONTROL UNIT (MIG)

NB: for the controls of D2C SAW, refer to the instructions: 8695 6051

MANUAL CONTROLS

 wire feed up

 wire feed down

 hight wire feed speed.

 gas test

PREPARATION
Make sure that the gas supply is adjusted and in operation

11 - WELDING (MIG) VERSION SUBARC 5

Press P6  and keep it pressed in (if you do not want to use the pre-gas C19) ⇒ the flux flows
Release P66
Before welding start the flux flows for the duration of the timeout (adjustment by C 19). Once welding is established, improve the adjustments of US and IS with potentiometers P1 and P5

Press P7  to stop welding

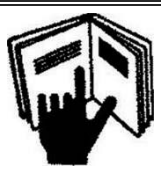
INFORMATION

Storing the welding parameters

SAW only

It is possible to store the welding parameters by pressing P6 during welding
After welding stops, the parameters taken into account during the pulse are restituted on the display units

12 - MIG WELDING, VERSION D2C SAW



Refer to the instructions for D2C SAW: 8695 6051

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)

On each wire spool replacement		
		Blow inside the sheaths, the wire guides on plate inlet and outlet, the wire feed plate, the extension joining pieces and the wire straightener.
		Check the wire nozzles for wear.

Daily		
Date of maintenance: / /		
		Démonter le couvercle du recyclage flux, le retourner et le secouer énergiquement pour évacuer les "fines" et la poussière.
		Démonter et secouer efficacement la manchette tissu du couvercle de ensemble de recyclage flux
		Souffler l'intérieur de la vannes à flux, des tuyaux, de l'amenée de flux.

Hebdomadaire		
Date of maintenance: / /		
		Dismount the cover of the flux recycling device, turn it upside down and shake it energetically to remove the "fines" and dust.
		Dismount and shake well the tissue oversleeve of the flux recycling unit.
		This operation should be carried out with the installation powered down and after having removed the side panels of the power source.

2 - TROUBLESHOOTING

Possible symptoms	Probable causes	Possible remedies
No wire feed and wire retraction	Power supply fault	Check fuse supply. Fu 1-2-3-4
	Mechanical blocking.	Check wire supply.
	Belt cut.	Change the belt
	Motor breakdown	Test the motor Check the brushes.
	Breakdown of the variable speed unit.	Check the variable speed unit, its connections and its supply, and change it if necessary.
Red led lit up on cycle board	No manual and auto cycle.	Switch off the power supply and switch on again. If the led remains lit up, change the board.
Green led switched off on cycle board		Check the power supply of the board. Check the fuses : Fu 5-6
High instability during welding	Defective wire drive.	Tighten the rollers. Check wire supply
	Power source fault	See power source instructions
	Current supply fault.	Check power cables.
Defective flux supply.	Flux too dirty.	Change the flux.
	Flux supply pipe clogged.	Disassemble and clean the flux supply.
	Flux solenoid valve not controlled	Check the power supply of the valve 24v≈ Check fuse : Fu 7

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:** **no marks**

(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.)

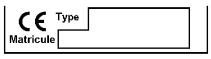
For items noted on the photos or sketches but not in the tables, send a copy of the page concerned, highlighting the particular mark.

For example:

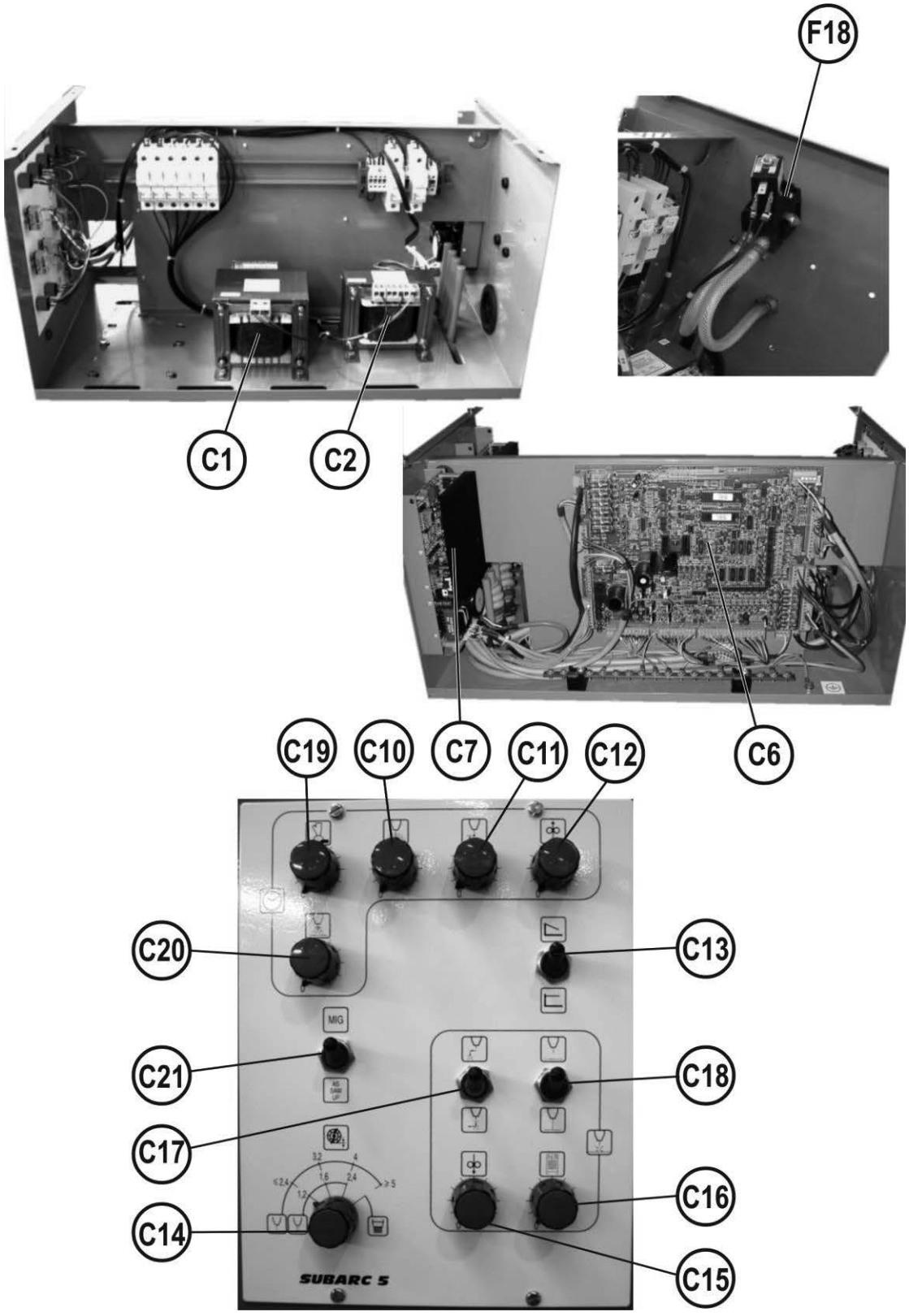
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
1	W000XXXXXX	✔		Machine interface board
2	W000XXXXXX	✘		Flowmeter
3	9357 XXXX			Silk-screen printed front panel

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



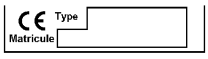
TYPE:
Number:


F18
C1
C2
C19
C10
C7
C11
C12
C6
C20
C13
MIG
C21
C18
C17
C16
C14
C15
SUBARC 5

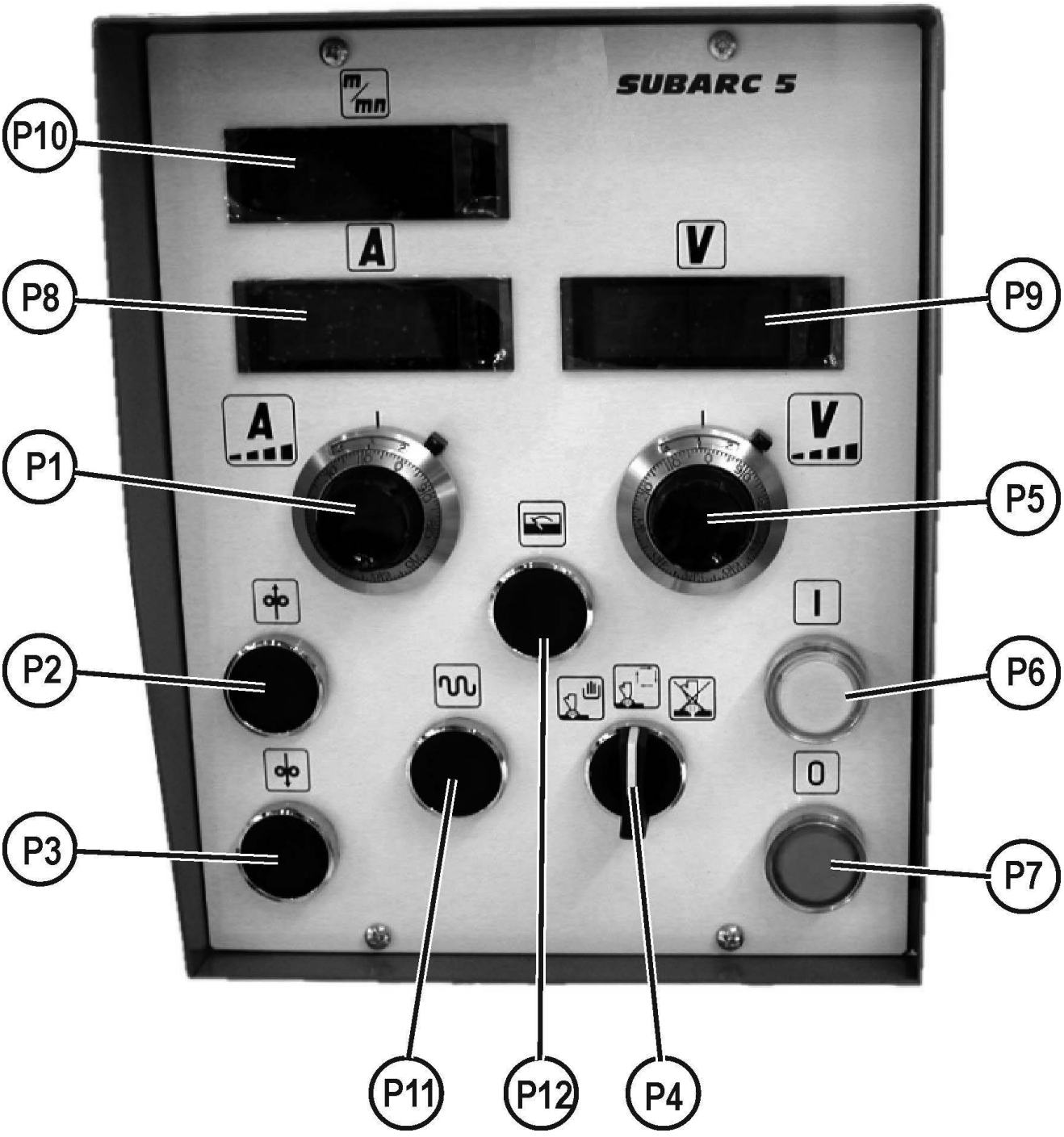
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
C1	W000315079	✔		42 V Power transformer
C2	W000315130	✔		Control transformer
C6	W000139859	✔		**SUBARC 5** cycle board
C7	W000139910	✔		Speed controler board **MOTOVAR MV 20**
C10 **C11** **C12** **C19** **C20**	W000139775	✔		100 kΩ potentiometer with button
C13 **C17** **C18** **C21**	W000139773	✔		Protective switch
C14	W000139785	✔		Switch
C15 **C16**	W000139774	✔		10 kΩ potentiometer with button
F18	W000384429	✔		Flux supply distributor assembly (**SUBARC 5** - 24VAC)

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



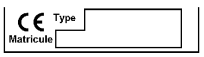
TYPE:
Number:


SUBARC 5
m/mn
A
V
P10
P8
P9
P1
P5
P2
P6
P3
P7
P11
P12
P4
I
0

✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
P	W000315089	✘		**SUBARC 5** power unit
P1 **P5**	W000141575	✔		10 kΩ 10-turns potentiometer with button
P2 **P3** **P11** **P12**	W000137816	✔		Complete black push-button
P4	W000137817	✔		3-position switch with return to centre
P6	W000137823	✔		Complete wihite ligth push-button
P7	W000137824	✔		Complete red ligth push-button
P8	W000139829	✔		Current standard display unit (I<1999A)
	W000352226	✘		Current display unit (I≥2000A)
P9	W000315109	✔		Voltage display unit
P10	W000315059	✔		Wire speed display unit

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



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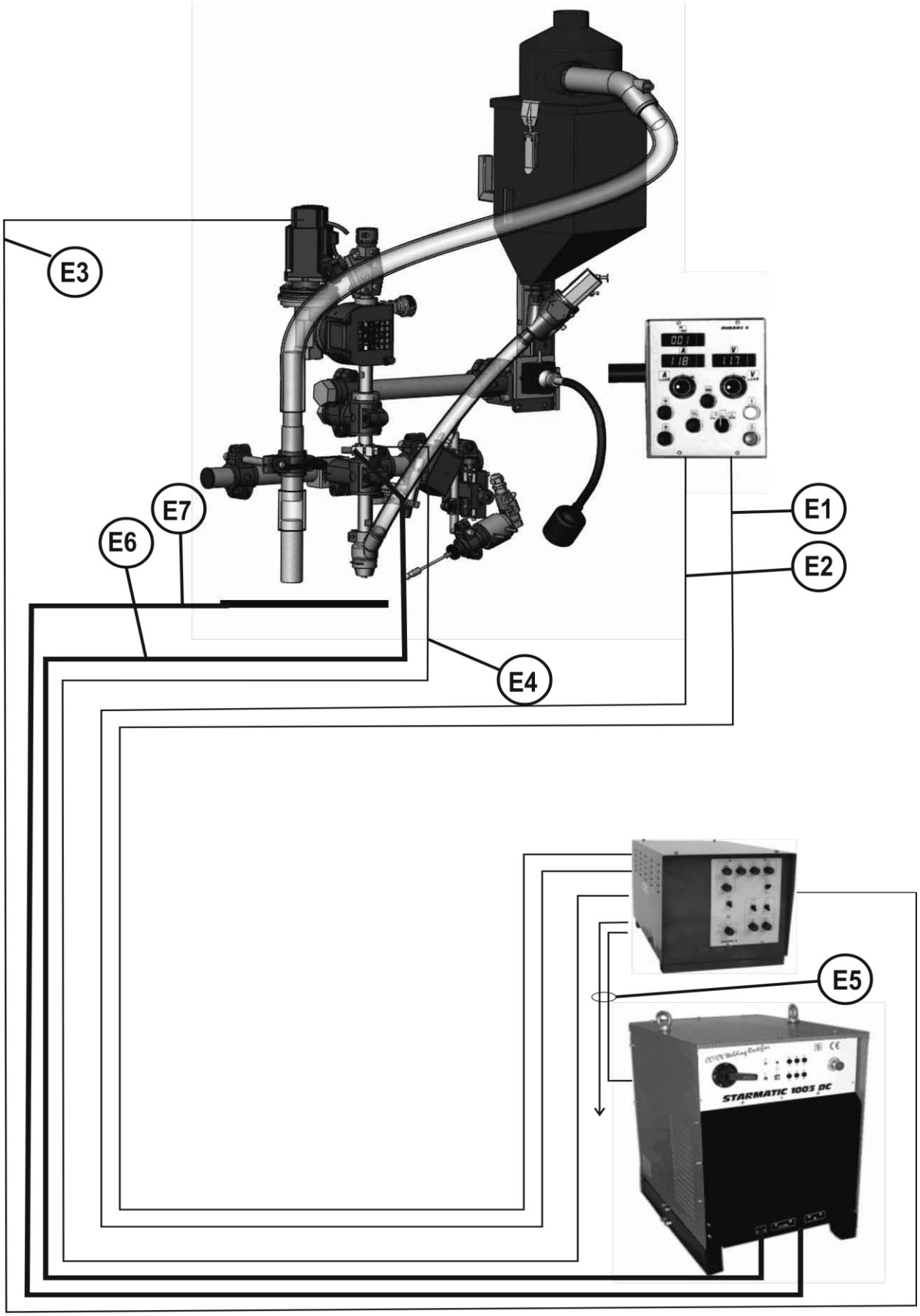
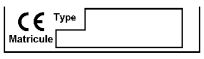
Number:


E3
E7
E6
E1
E2
E4
E5
STARMATIC 1003 PC

✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
E1	W000366130	✘		Console harness length 17 m
	W000366119	✘		Console harness length 22 m
E2	W000366126	✘		Console harness length 17 m
	W000366127	✘		Console harness length 22 m
E3	W000366128	✘		Motor+ tachy harness length 17 m
	W000315682	✘		Motor+ tachy harness length 22 m
E4	W000366129	✘		U measurement harness length 17 m
	W000366121	✘		U measurement harness length 22 m
E5	W000366122	✘		Rack power source harness + electronic supply **1000/1300 DC**
	W000315070	✘		Rack power source harness + electronic supply **1003/1303 DC**
	W000315069	✘		Rack power source harness + electronic supply **650 DC/1003 AC/DC**
E6	W000260268	✘		Flexible cable 1x95 mm²
E7	W000260268	✘		Flexible cable 1x95 mm²

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



TYPE:
Number:

PERSONAL NOTES

Lincoln Electric France S.A.S.
Avenue Franklin Roosevelt 76120 Le Grand Quevilly
76121 Le Grand Quevilly cedex
www.lincolnelectriceurope.com