INSTALLATION

NERTAJET HPi

LINCOLN ELECTRIC HPC Machine Retrofit

SAFETY INSTRUCTIONS FOR USE AND MAINTENANCE

EDITION : EN
REVISION : E
DATE : 10-2020

Instructions for use

REF : **8695 4620**

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.

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INFORMATIONS

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

ISEE N°	ISUM
8695 4616	**HP150 HPi** - **HP300 HPi** Power Source
8695 4617	Option **HPi** Inox
8695 4618	Option **HPi** Vortex
8695 4594	Torch **CPM 400**
8695 4594	Torch **CPM 600wi**
8695 4585	Torch **T5**

DISPLAYS AND PRESSURE GAUGES

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

REVISIONS

REVISION B **10/15**

DESIGNATION	PAGE
Creation in several languages	

REVISION C **09/20**

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To change logos	

REVISION D **10/20**

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Add **T5** torch	

REVISION E **10/20**

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Stainless steel Addition torch **T5**	

A - IDENTIFICATION

HPi CA4 Ethernet installation for LINCOLN ELECTRIC **HPC** cutting machine retrofit is an autonomous system whose **HPi CA4** cycle cabinet is designed to be driven directly via a **HPC** CNC**.**
The **HPi CA4** Ethernet installation is scheduled for retrofit plasma installations mounted on LINCOLN ELECTRIC machines with digital control **HPC**.
With the "Retrofit Oxy **HPC**" option, the **HPi CA4** Ethernet allows to continue working with an already present **HPC** oxyfuel installation without imposing the new **HPi** OXY

This ISUM is complementary to the ISUM 8695 4615. It will deal only with specific elements namely **CA4** Box **HPi** Ethernet. It will make calls to ISUM 8695 4615 for the common elements.

1 - INSTALLATION HPi

Please refer to the ISUM: 8695 4615.

2 - READING A MANUFACTURER'S PLATE

Please refer to the ISUM : 8695 4615.

3 - CA4 INTEGRATED INSTALLATION FOR MACHINE LINCOLN ELECTRIC HPC RETROFIT

4 - GAS CONNECTION BOX

Please refer to the ISUM : 8695 4615.

5 - TORCH CONNECTION BOX

Please refer to the ISUM : 8695 4615.

6 - TOOL HOLDER

Please refer to the ISUM : 8695 4615.

7 - TORCH IMPACT SAFETY SYSTEM

Please refer to the document: 8695 4616

8 - POWER SOURCE

Please refer to the document: 8695 4616.

9 - COOLING UNIT

Please refer to the document: 8695 4938 / 8695 4943.

10 - TORCH

Please refer to the document:

- 8695 4593 => Torch **CPM400 BLACK** - **CPM600wi**
- 8695 4585 => Torch **T5**

11 - HMI FOR INTEGRATED INSTALLATION ON MACHINE

Se référer au document :

- 8695 4944 => **HPC DIGITAL PROCESS II**
- 8695 4948 => **HPC DIGITAL PROCESS HPi**
- 8695 4949 => **HPC DIGITAL PROCESS HPi level 3**

B - SAFETY INSTRUCTIONS

Please refer to ISUM 8595 4615

C - DESCRIPTION

1 - CAPACITIES OF THE NERTAJET HPi INSTALLATION

This complete installation consists of a group of industrial equipment (power source, torch, control unit, tool holder, bundles...) especially designed to allow automatic thermal cutting by plasma jet.

NOTE : The speed/quality ratio can be chosen according to the final use of the parts cut out..

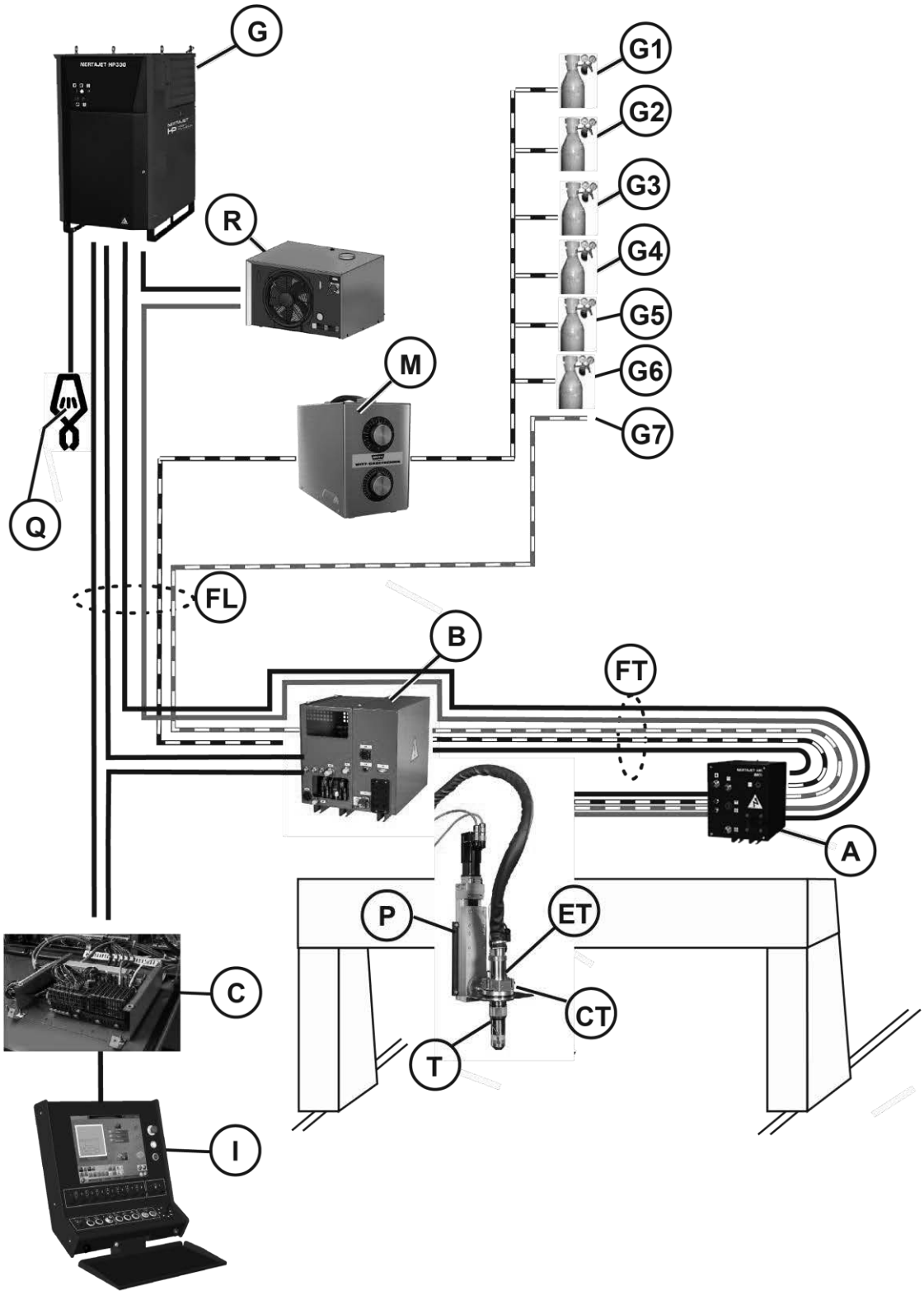
Thermal cutting using plasma jet is a cutting process by fusion and ejection of the molten metal by the plasmagene gas.

Quality and productivity criteria such as the tightening of the tolerances concerning metal, dimensions, geometry, surface condition, speed ... require the use of modern guiding machines.

The performances announced will only be obtained if the machines can carry out a correct line at recommended speeds.

2 - INTEGRATED INSTALLATION ON LINCOLN ELECTRIC MACHINE

This installation may be used in an integrated manner on a machine supplied by us. The main functions are accessible by the NC that will steer the cutting processes via Ethernet. This installation can manage the plasma cutting function for a maximum of 2 torches, and oxycutting for a maximum of 12 torches depending on the modules selected.



INTEGRATED NERTAJET HPi INSTALLATION		
Mark	**Designation**	**Reference**
A	Torch connection box (**BRTi**)	P04097515
B	Gas connection box (**BRGi**) => **CPM400** Gas connection box (**BRGi**) => **T5**	P04097525 P04150215
C	Cycle function assembly	-
CT	Magnetic torch impact safety system	P04096903
ET	Connector + torch bundle (2.5m bundle) => **CPM400** Connector + torch bundle (1.6m bundle) => **T5**	W000377822
FL	Longitudinal bundles	-
FT	Machine supply transverse bundles	-
G	**NERTAJET HP150 HPi** power source **NERTAJET HP300 HPi** power source	W000379404 W000379403
G1	Argon (marking / pilot gas)	P04097565
G2	Air (N2O2) (annular gas)	P04097566
G3	Oxygen (cutting gas)	P04097567
G4	Stainless steel option - Nitrogen (cutting gas / annular gas)	P04097568
G5	Option Inox - Argon/Hydrogen ArH2 (cutting gas / annular gas) OR H17 for torch **T5**	P04097569
	Stainless steel option **T5** without H17 mixer (cutting gas)	P04150251
	Stainless steel option **T5** with H17 mixer (gas for mixer)	P04150313
G6	Option Inox - Nitrogen/Hydrogen N2H2 (cutting gas)) OR air for torch **T5**	P04097570
G7	Option - Water for vortex (annular)	P04095268
I	Programming interface	**-**
P	Numerical tool holder (**THDi 160**) Numerical tool holder (**THDi 350**)	P07054360 P07054370
Q	Power source earth / working place bundle, L=10 M : - for installation **HPi 150** - for installation **HPi 300**	 P04090490 P04097408
R	Cooling group: **FRIOJET 300i** 230V-1-50Hz **FRIOJET 720** 400V-3-50Hz	 W000380971 W000372095
T	Torch tip **CPM400** or Torch tip **CPM600wi** or Torch tip **T5**	W000373985 W000372584 BK279100
M	Mixer (Stainless steel option torch **T5**)	AS-CS-04150251

D - MONTAGE INSTALLATION

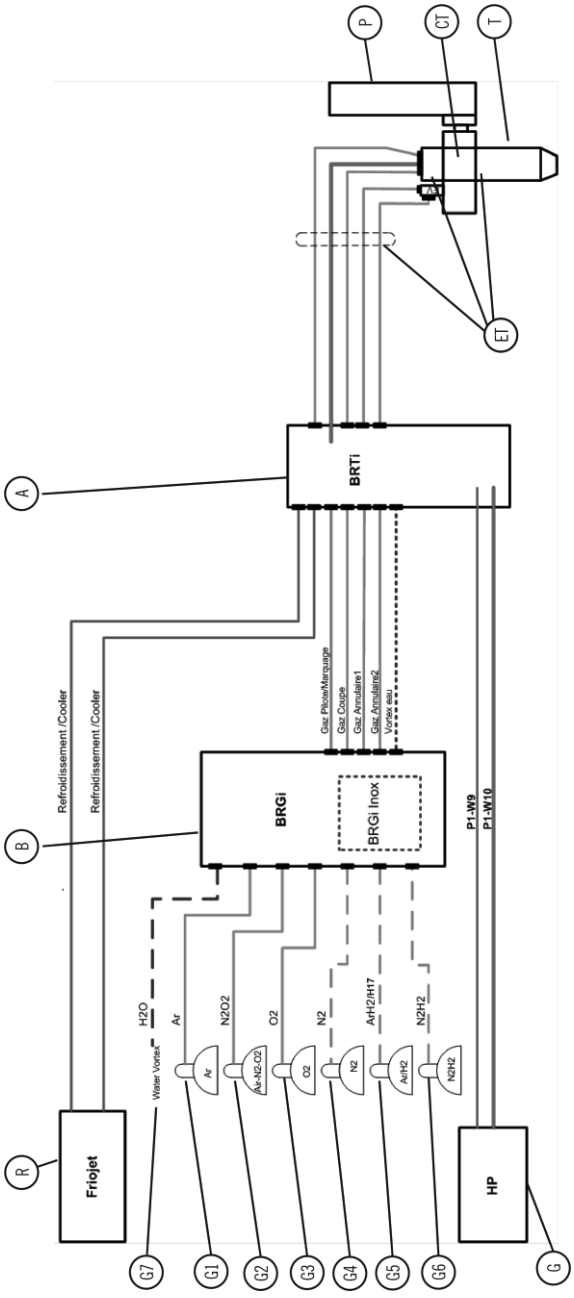
1 - CYCLE FUNCTION INSTALLATION FOR LINCOLN ELECTRIC HPC MACHINE RETROFFITTING

In this case, the process cycle function is delivered in a box.

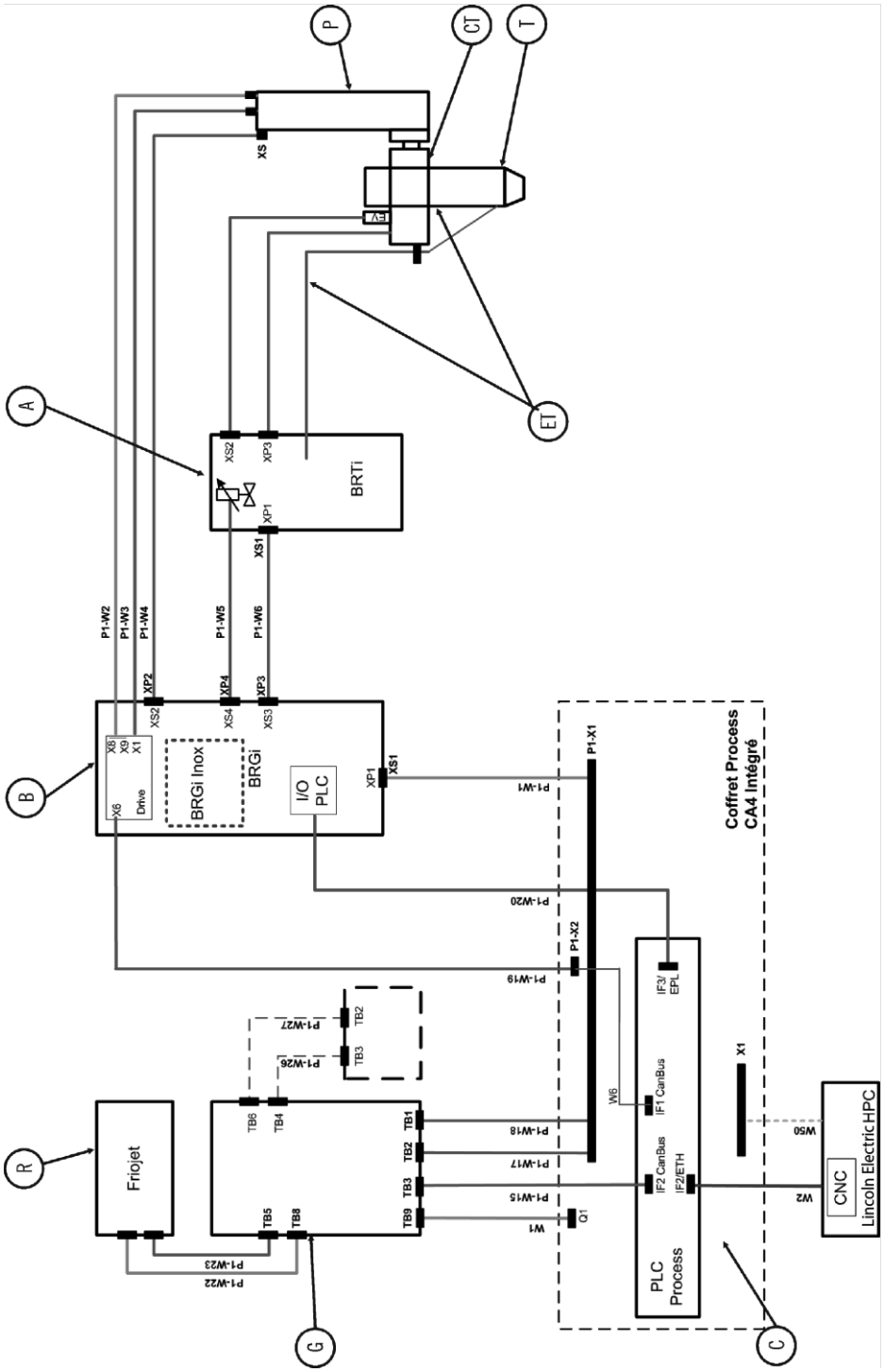
1.1 ASSEMBLY

In the case of a single-torch installation, the 230VAC/3A power supply required by the process box is supplied either by the power source or by the customer.
In the case of a two-torch installation, the 230VAC/6A power supply required by the process box is supplied by the customer.

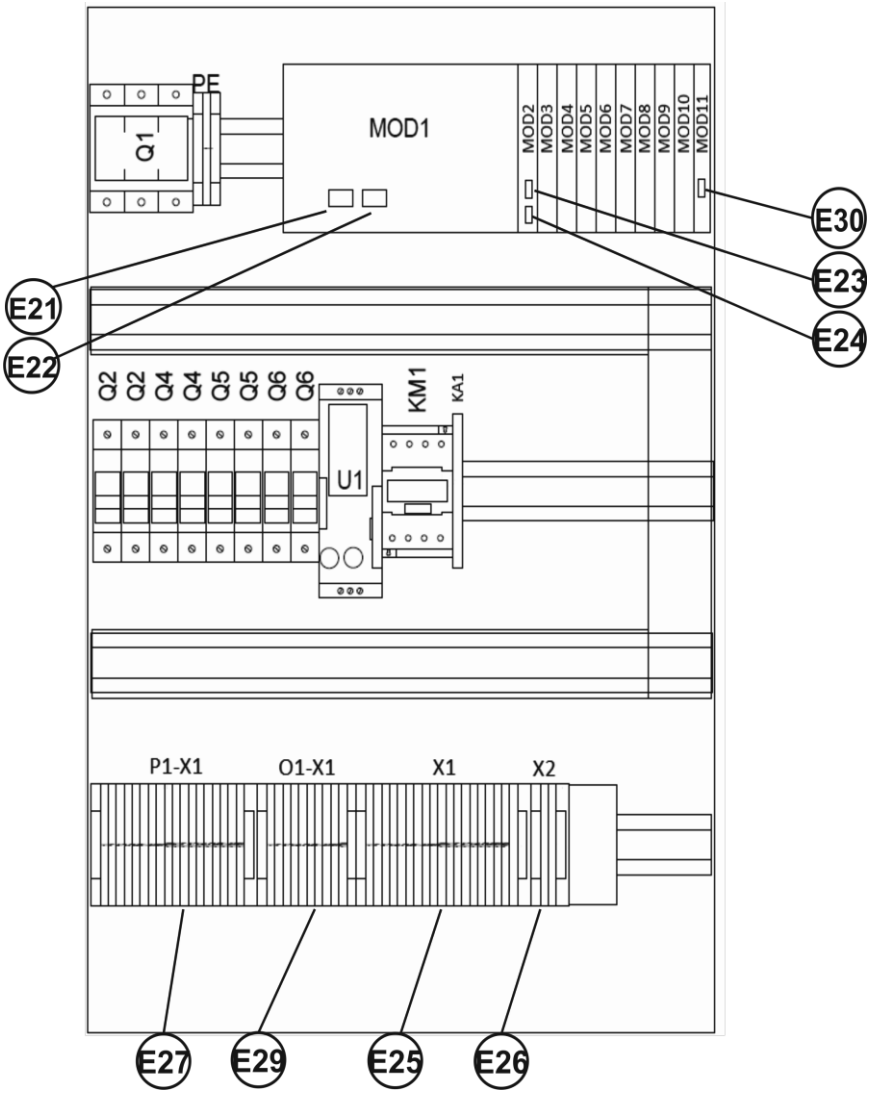
1.2 FLUID CONNECTIONS



1.3 ELECTRICAL CONNECTIONS



1.4 CONNECTIONS



E21	Ethernet bus for communication with CNC
E22	Powerlink bus for communication with **BRGi**
E23	Can bus for communication with **HP HPi** power source
E24	CanOpen bus for communication with **THDi**
E25	Terminal block X1 (Inputs/outputs for integrator)
E26	Terminal block X2 (Inputs/outputs for integrator)
E27	Terminal block P1-X1 (Inputs/outputs internal to installation)
E29	Terminal block O1-X1 (Inputs/outputs internal to installation)
E30	CanOpen bus for communication with **OXY HPC**

1.4.1 Connection of process box power supply

The process box is supplied with 230VAC (3A) in the case of a single-torch installation or 230VAC (6A) in the case of two-torch installation.

The 230VAC power supply (3A) is supplied,
- Either by the power source: Connector TB9, cable W1
- Or by the integrator

In the case of a two-torch installation, the 230VAC (6A) power supply is supplied by the integrator.

In both cases, the power supply cable is directly connected to the disconnector Q1.

1.4.2 Emergency stop - Safety management

The process box of the independent **HPi** installation is designed to be fitted with a dry emergency stop contact from the machine into which the installation is integrated.
In return, the independent Plasma **HPi** installation provides an NC contact that reflects the status of the command KM1 of the installation, to be used in the emergency stop device of the machine.

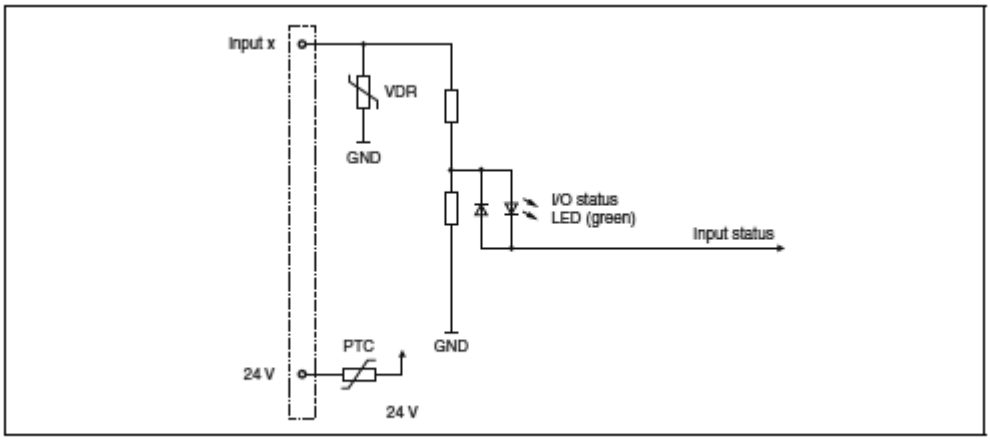
E25 (X1)	
2	Machine Emergency Step command input
3	Machine Emergency Step command input
4	KM1 status NC contact return
5	KM1 status NC contact return

The safety of the process box is provided by an LC1D12BD KM1 contactor from Schneider Electric.

5.4.3 Installation inputs/outputs available to the integrator

- Characterisation of inputs

The inputs are inputs of the module B&R DI6371:



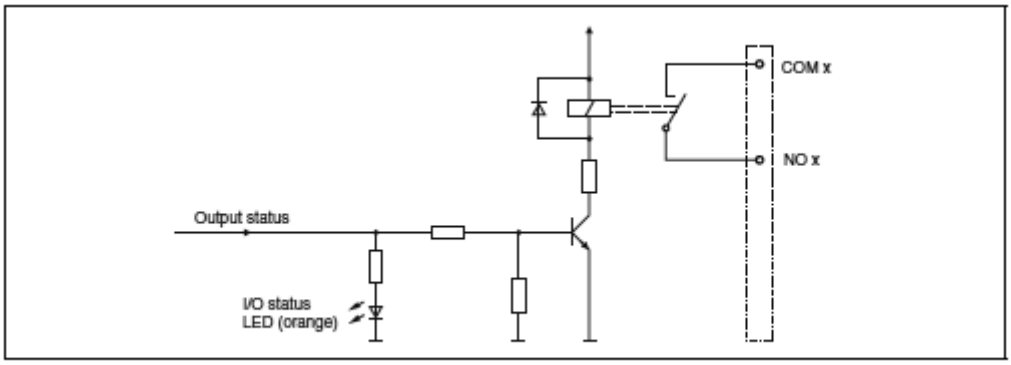
DI6371 - Input circuit diagram

Product ID	DI6371
Digital inputs	
Input voltage	24 VDC (-15% / +20%)
Input current at 24 VDC	Typ. 3.75 mA
Input resistance	Typ. 6.4 kΩ
Switching threshold Low High	 <5 VDC >15 VDC
Isolation voltage betw. channel and bus	500 V_{eff}
General information	
B&R ID code	$1B93

DI6371 - Additional technical data

- Characterisation of outputs

The outputs are outputs of the module B&R DO6529:



DO6529 - Output circuit diagram

Model number	Short description
	Digital output module
X20DO6529	X20 digital output module, 6 relays, N.O. contacts, 115 VAC / 0.5 A, 30 VDC / 1 A

E25 (X1)			
1	0VDC	**15**	No torch impact output (common)
6	Power source 1 off	**16**	No torch impact output
7	Power source 1 common	**17**	Not used
8	Power source 1 on	**18**	Not used
9	**+24VDC 10,11 common**	**19**	**+24VDC 20,21 common**
10	Cycle start input	**20**	Plasma 1 TH up request input
11	Low speed input	**21**	Plasma 2 TH up request input
12	**13,14 common**		
13	No fault output		
14	Movement permission output		

E26 (X2)	
1	Extraction ON input
2	+24VDC common

1.4.4 Other installation inputs/outputs

E27 (P1.X1) – E28 (P2.X1)			
1	230VAC phase (**BRGi** power supply)	**8**	Power source 1 off
2	230VAC neutral (**BRGi** power supply)	**9**	Power source 1 common
3	Earth (BRGi power supply)	**10**	Power source 1 on
4	+24VDC - **BRGi** Em. Stop safety relay	**14**	Cutting stop request to power source (synchronisation)
5	0VDC - **BRGi** Em. Stop safety relay	**15**	Sync common
6	BRGi KM1 status NC contact return	**16**	UEP (GND0)
7	BRGi KM1 status NC contact return	**17**	GND0
		18	Power source ON contact (+24VDC common)
		19	Power source ON contact (PLC input)

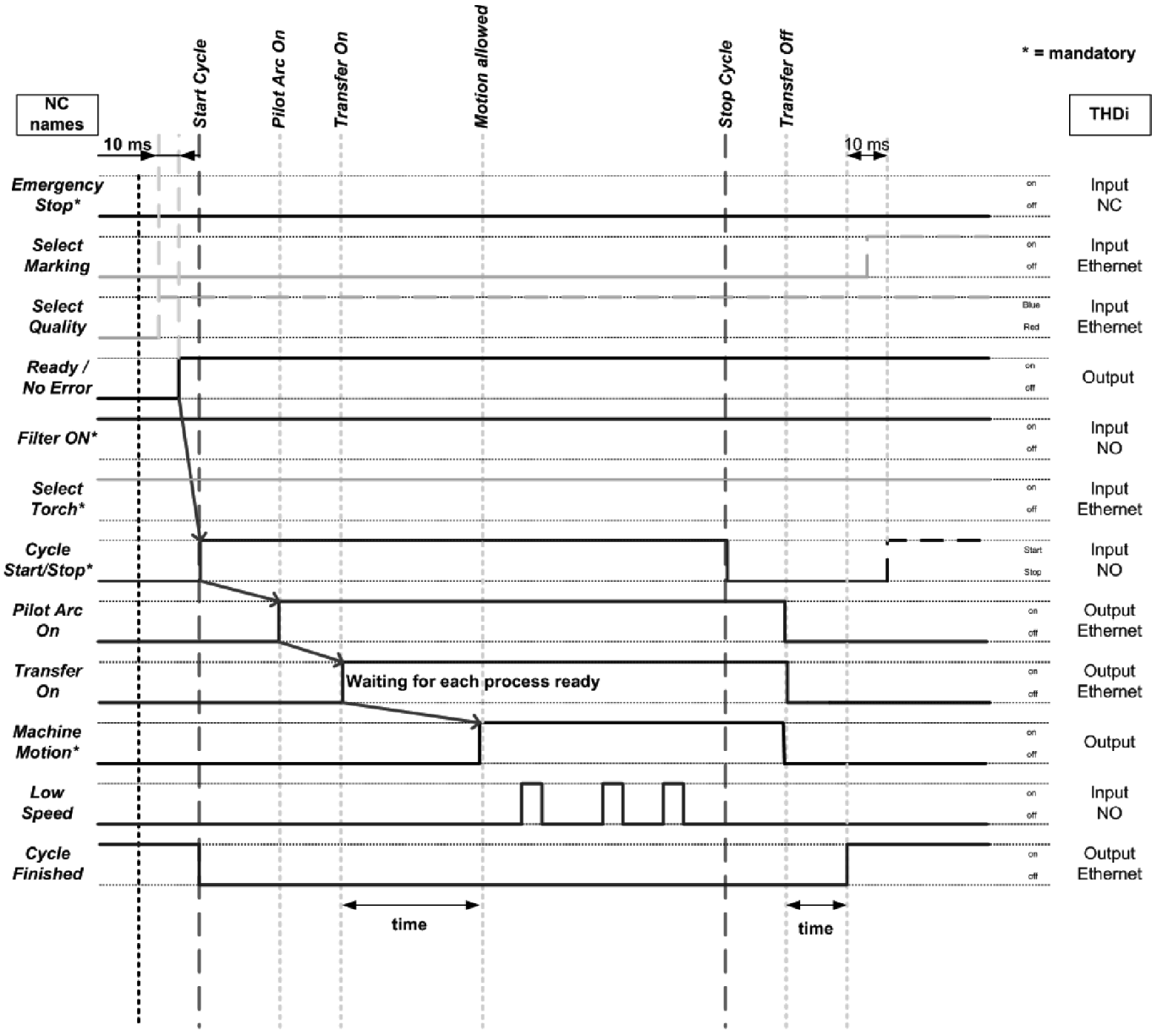
1.4.5 Retrofit Oxy Option

E29 (O1-X1) *OPTION*			
1	Movement permission input	**7**	CAN_H
2	Movement permission input	**8**	CAN_GND
3	Shock sensor input	**9**	CAN_L
4	Shock sensor input	**10**	CAN_GND
5	Off Probe Output		
6	Off Probe Output		

E - OPERATOR MANUEL

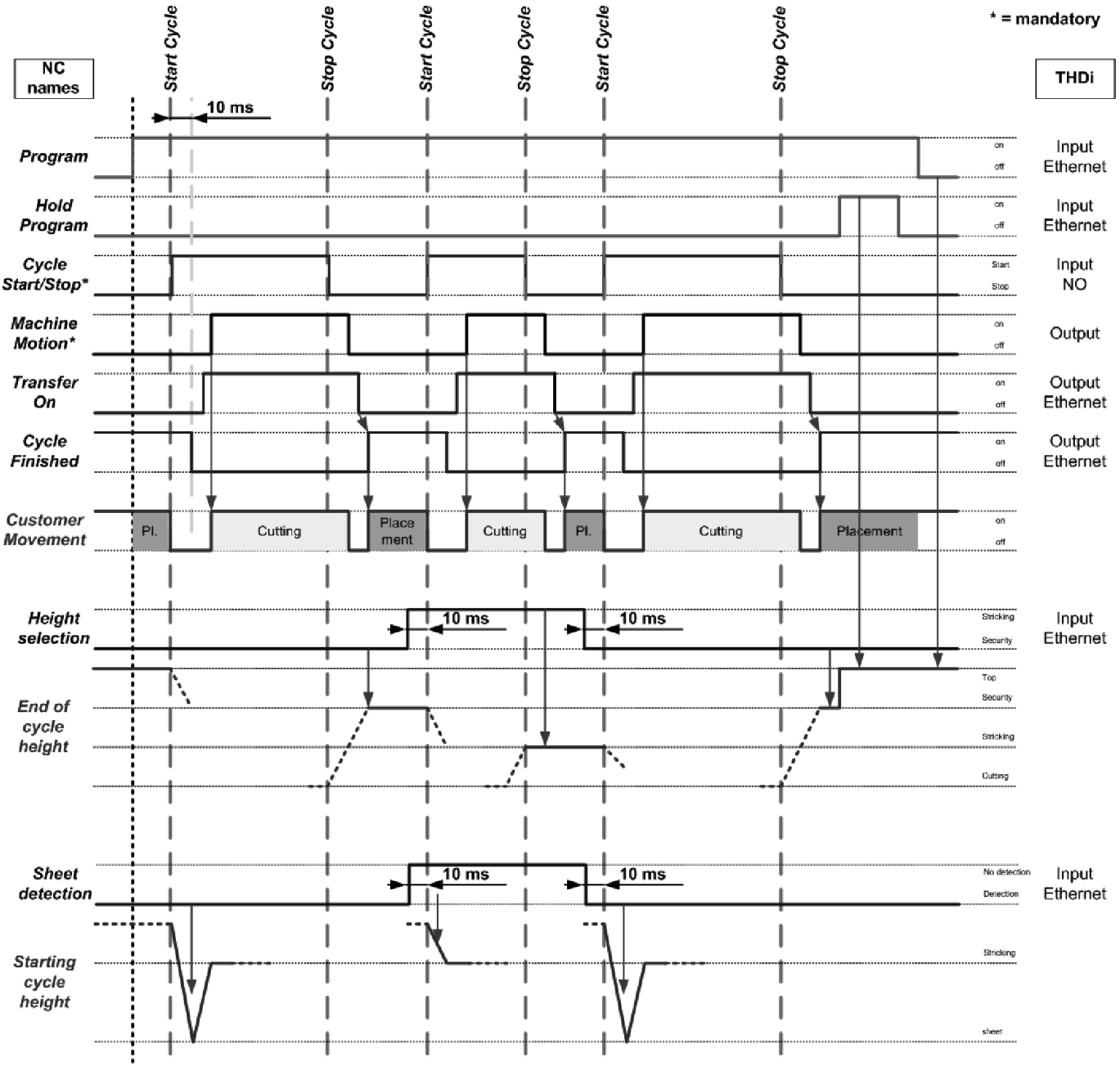
1 - USE OF THE INTEGRATED PLASMA INSTALLATION FOR LINCOLN ELECTRIC HPC MACHINE RETROFIT

1.2 CUTTING CYCLE (ONLY ONE CUT)



Name of signals	
Emergency stop (MOD3-11/14) (X1.2 / X1.3)	Informs the installation that there is an emergency stop. 0V: Emergency stop active. 24V: Emergency stop inactive
Select Marking (Ethernet)	Indicates that the job involves marking and not cutting. This signal must be set at least 10ms before a cycle start request. 0: Cutting 1: Marking requested
Select Quality (Ethernet)	Makes it possible to select the quality of cutting. Important! Another signal can short-circuit this choice. This signal must be set at least 10ms before a cycle start request. 0: Red quality 1: Blue quality
Ready / No error (MOD4-11/12) (X1.13 / X1.12)	Makes it possible to show that no error has been found. The cutting cycle may be started. Contact open: starting not permitted (look on the programming interface) Contact closed: starting up permitted
Filter ON (E42-13/16) (X2.1 / X2.2)	Makes it possible to inform the installation that the personal safety components are active. 0V: Safety devices not active (so cutting cannot be started) 24V: Safety devices active (so cutting can be started)
Select Torch (Ethernet)	Makes it possible to inform a torch if it must start or not with the next cycle start. That makes it possible to start only one torch in the case of multiple-torch installations. That also makes it possible to not select the torch if the cycle start signal is shared with another process. 0: Torch not selected 1: Torch selected
Cycle Start / Stop (MOD3-21/24) (X1.10 / X1.9)	Makes it possible to ask for cutting cycle start and stop. 0V: Cutting cycle stop request 24V: Cutting cycle start request
Pilot Arc On (Ethernet)	Makes it possible to show the point in the cycle. That makes it possible to carry out specific action when the pilot arc appears. Essentially useful if the Z axis is not managed by the installation. 0: Pilot arc inactive 1: Pilot arc active
Transfer On (Ethernet)	Makes it possible to show the point in the cycle. That makes it possible to carry out specific action when the pilot arc is transferred to the piece. Essentially useful if the Z axis is not managed by the installation. 0: Arc not transferred to the plate 1 : Arc transferred to the plate
Machine motion (MOD4-21/22) (X1.14 / X1.12)	Makes it possible to indicate that the process has correctly started cutting; the NC can move the tool to cut its shape. Contact open: Movement not permitted Contact closed: Movement permitted
Low Speed (MOD3-22/24) (X1.11 / X1.9)	Makes it possible to inform the installation that the cutting movement speed is slow. The installation can then take steps such as blocking sensing. 0V: No slowing down 24V: Slowing down required
Cycle Finished (Ethernet)	Information that indicates that the cutting cycle is complete. The NC can then make the movements it needs. This signal is typically used to make movements between two cuts or at the end of the program. 0: Cycle not complete 1: Cycle complete

1.3 CUTTING PROGRAM (SEVERAL CUTS)



Name of signals	
Program (Ethernet)	This signal is to be used when you want to make several cuts. It helps save time between two cuts. That is because the tool holder is not necessarily raised to the top when this signal is used. Pre-gas for the next cut starts before the cut starts. 0: No program in progress 1: Program in progress
Hold Program (Ethernet)	This signal makes it possible to interrupt a program with the intention of resuming it later. 0: The program is not paused 1: Ask for a switch to pause
Cycle Start / Stop (MOD3-21/24) (X1.10 / X1.9)	Makes it possible to ask for cutting cycle start and stop. 0V: Cutting cycle stop request 24V: Cutting cycle start request
Machine motion (MOD4-21/22) (X1.14 / X1.12)	Makes it possible to indicate that the process has correctly started cutting; the NC can move the tool to cut its shape. Contact open: Movement not permitted Contact closed: Movement permitted
Transfer On (Ethernet)	Makes it possible to show the point in the cycle. That makes it possible to carry out specific action when the pilot arc is transferred to the piece. 0: Arc not transferred to the plate 1 : Arc transferred to the plate
Cycle Finished (Ethernet)	Information that indicates that the cutting cycle is complete. The NC can then make the movements it needs. This signal is typically used to make movements between two cuts or at the end of the program 0: Cycle in progress 1: Cycle complete
Customer Movement	The customer can start the cutting movement when the Machine Motion contact is closed. The cutting movement must stop when the Machine Motion contact opens. When the Cycle Finished signal switches to 1, the movement may be carried out to go to the next cut.
Height selection (Ethernet)	Makes it possible to select the raising height of the Z axis during a program. This signal must be set at least 10ms before a cycle start request. 0: The tool holder goes up to the safety height in the program 1: The tool holder goes up to the strike height in the program. Usable if the movement along the X and Y axes is very small because there is no need to go up too high. Away from the program, the tool holder will go right up. If the program is paused, the tool holder will go right up.
Sheet detection (Ethernet)	Makes it possible to detect if plate detection by electrical contact is to be repeated, given that the first strike of a program imposes detection. This information has no meaning when the plate is detected by the pilot arc. This signal must be set at least 10ms before a cycle start request. 0: Detection of the plate position by electrical contact 1 : The tool holder goes directly to the strike height without measuring the tool height (except for the first cut of a program)

1.4 OTHER INFORMATION

Name of signals	
Synchro (MOD6-11/14 = P1) (P1-X1.14 / P1-X1.15)	Signal intended for the power source to synchronise the current and gas. 24V: Cutting permitted 0V: Cutting stop request and cutting start not permitted
Select High Quality (Ethernet)	Makes it possible to select the quality of cutting. 0: Quality selected by the signal Select Quality 1: Light blue quality
Tool Holder on top (Ethernet)	Makes it possible to indicate that the tool holder (or tool holders) is (are) in the high position 0: tool holder not high (if several torches: at least one of the tool holders is not in the high position) 1: tool holder in high position (if several torches: all the tool holders are in the high position)
Contact (Ethernet)	Shows when the torch touches the plate. 0: The torch does not touch the plate 1 : The torch touches the plate
Power Source Detection (MOD6-11/14 = P1) (P1-X1.18 / P1-X1.19)	Makes it possible to know if the power source is on. 0V: The power source is not on 24V: The power source is on
Torch up (E61-13/16 = P1)	Makes it possible to ask for tool holder raising. Function active only if the remote control has been activated. 0V: No raising request 24V: Raising request
Voltage Learning (Ethernet)	Sensing voltage teaching. This signal must be set to 1 at the end of D404. 0V: Carry out sensing voltage teaching 24V: Do not teach voltage.
Torch selected (Ethernet)	All the conditions have been met for starting a cut with the torch. 0: Torch not selected 1: Torch selected
Not ready	The process is not ready. It may be that it has not received its configuration, that gas is not available, or other reasons. 0: Ready 1: Not ready
Speed not limited (MOD4-13/14) (X1.15 / X1.16)	During certain faults, such as a torch impact safety fault, NC movements must switch to a very slow speed to avoid destroying the equipment. Contact open: Limited speed Contact closed: Normal speed

F - MAINTENANCE

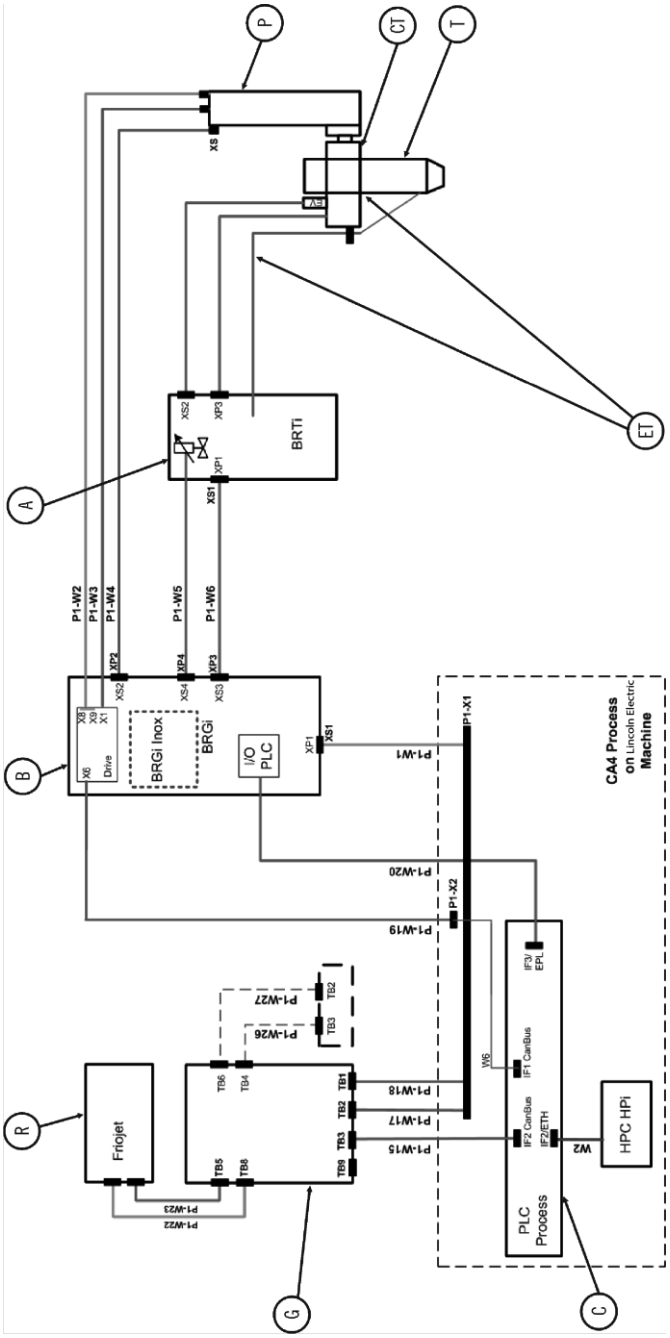
1 - SERVICING

Note : For the Nertajet HP installation to work well, the torch and tool-holder must be serviced regularly.

See the corresponding instructions.

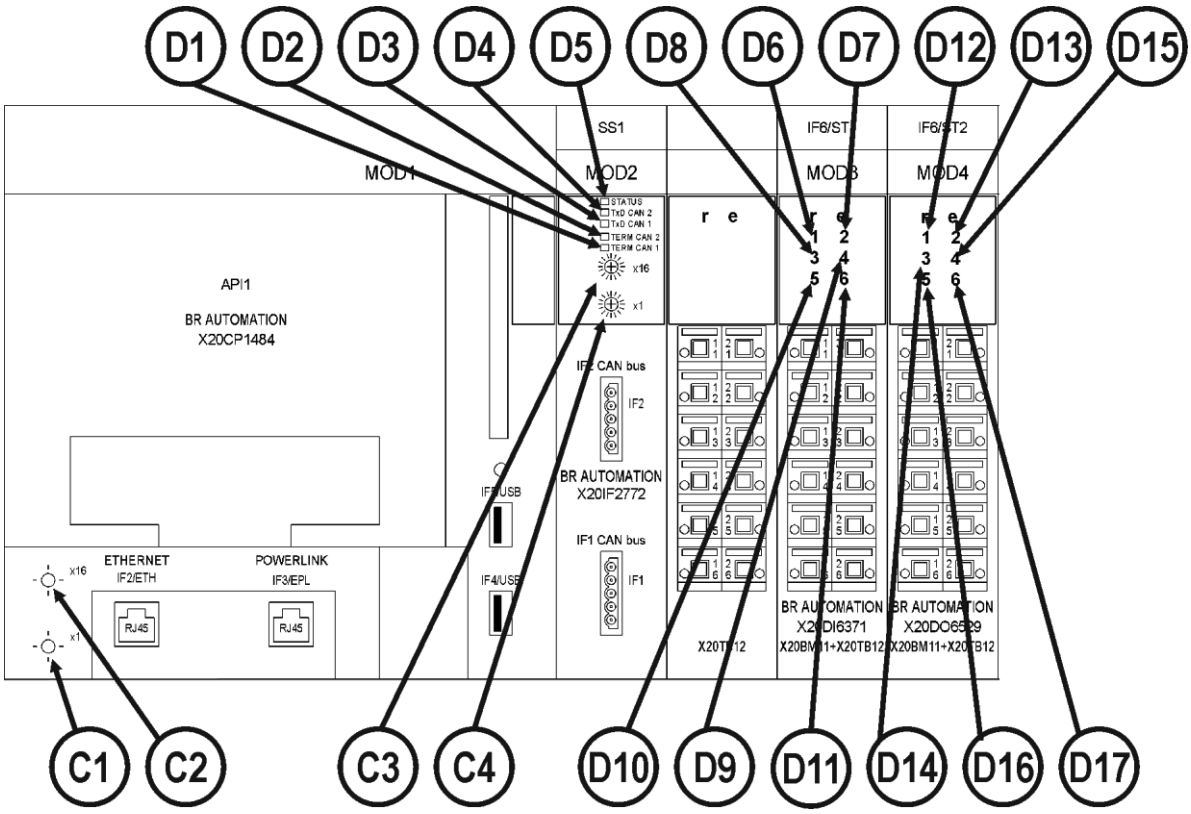
2 - CYCLE FUNCTION TROUBLESHOOTING FOR INTEGRATED INSTALLATION

2.1 SUMMARY



2.2 INDICATORS/ENCODERS

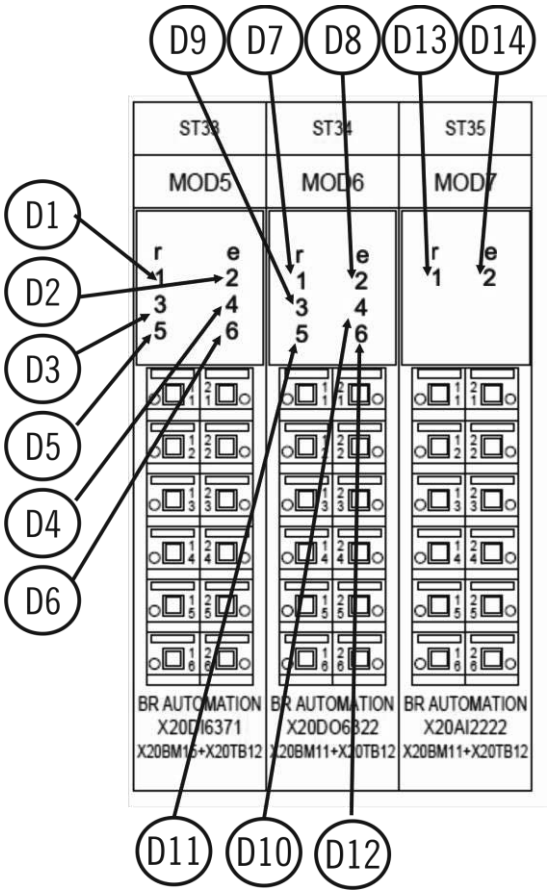
2.2.1 Common part



Encoder	Meaning
C1	Set to 0 (change only if there are two PLCs)
C2	Set to 0
C3	Set to 0
C4	Set to 1

Indicator	Colour	Status	Meaning
D1	Green	On and steady	Communication module operating
	Red	On and steady	Communication module starting up
D2	Yellow	On	Transmission of information to plasma tool holder and/or oxycutting gas regulation module in progress
D3	Yellow	On	Transmission of information to plasma current power source in progress
D4	Yellow	On	The module is set up as an end for communication with the plasma tool holder and/or the oxycutting gas regulation module
D5	Yellow	On	The module is set up as an end for communication with the plasma current power source.
D6	Green	On	The emergency stop is inactive
	Green	Off	The emergency stop is active
D7	Green	On	The cutting cycle start is active
	Green	Off	The cutting cycle start is inactive
D8	Green	-	Not used
D9	Green	On	Slowing active
	Green	Off	Slowing inactive
D10	Green	On and steady	Protective components active (extraction etc.)
	Green	Off	Protective components inactive: cycle start not permitted
D11	Green	-	Not used
D12	Yellow	On and steady	No fault: A cycle start is permitted
	Yellow	Off	Fault present, to be corrected before cycle start
D13	Yellow	On and steady	During cutting: movement permitted
	Yellow	Off	During cutting: movement not permitted
D14	Yellow	On and steady	Normal movement speed permitted
	Yellow	Off	Request for speed reduction due to fault
D15	Yellow	-	Not used
D16	Yellow	-	Not used
D17	Yellow	On and steady	Process selected: the process starts if a cycle start is given
	Yellow	Off	Process not selected: Pressing cycle start will not start up cutting

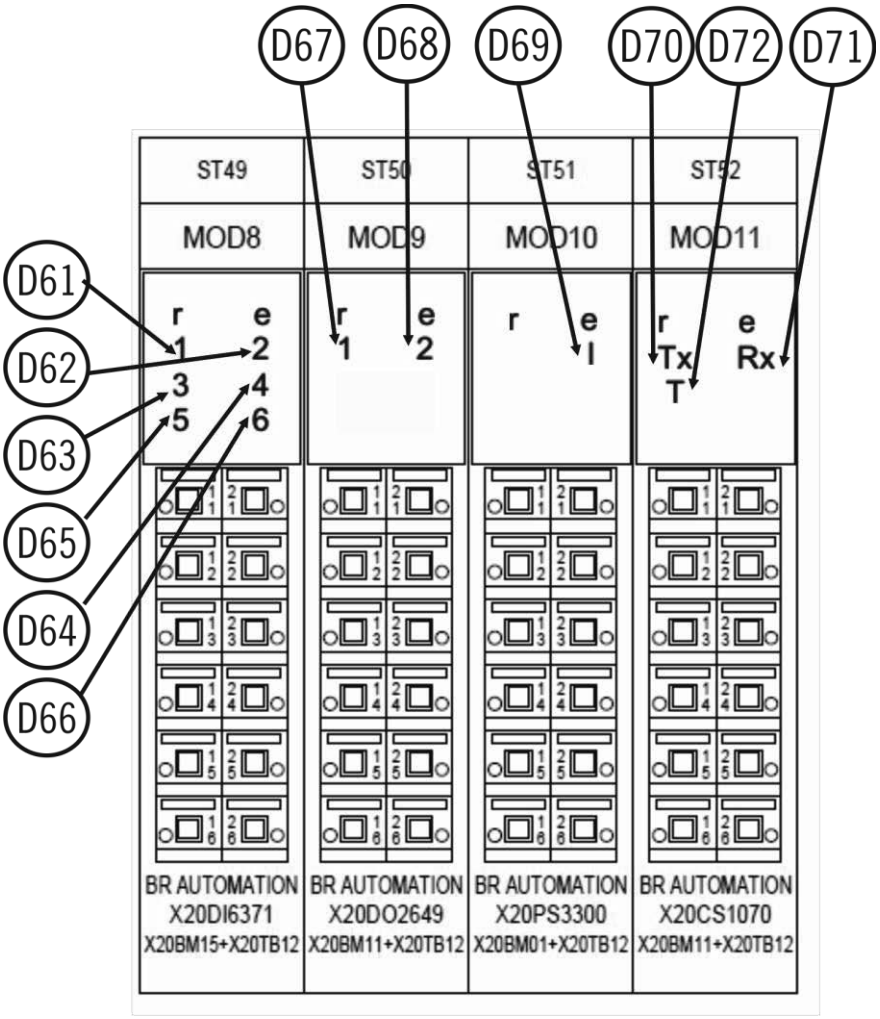
2.2.2 Plasma Part



Indicator	Colour	Status	Meaning
D1	Green	On and steady	The current source of torch 1 is on
	Green	Off	The current source of torch 1 is off
D2	Green	On and steady	The current source of torch 2 is on
	Green	Off	The current source of torch 2 is off
D3	Green	-	Not used
D4	Green	-	Not used
D5	Green	-	Not used
D6	Green	-	Not used
D7	Yellow	On and steady	The current source of torch 1 is permitted to deliver current
	Yellow	Off	The current source of torch 1 is not permitted to deliver current and must stop if a cycle is under way
D8	Yellow	On and steady	The current source of torch 2 is permitted to deliver current
	Yellow	Off	The current source of torch 2 is not permitted to deliver current and must stop if a cycle is under way
D9	Yellow	-	Not used
D10	Yellow	-	Not used
D11	Yellow	-	Not used
D12	Yellow	-	Not used

Indicator	Colour	Status	Meaning
D13	Green	On	Indicates that voltage is present on the sensing voltage measurement of torch 1
	Green	Off	Indicates that no voltage is present on the sensing voltage measurement: Wiring error or failure of the measurement component of torch 1
D14	Green	-	Not used

2.2.3 Retrofit Oxy HPC Option Part



Indicator	Colour	Status	Meaning
D61	Green	On and steady	OXY CPU Board: movement permission
	Green	Off	OXY CPU Board: no movement permission
D62	Green	On and steady	OXY CPU Board: shock sensor
	Green	Off	OXY CPU Board: no shock sensor
D63	Green	-	Not used
D64	Green	-	Not used
D65	Green	-	Not used
D66	Green	-	Not used

D67	Orange	On and steady	OXY CPU Board: Stop Probe
	Orange	Off	OXY CPU Board: no Stop Probe
D68	Orange	-	Not used
D69	Red	On and steady	X2X Link power supply is overloaded
	Red	Off	X2X Link supply in the acceptable range
D70	Yellow	On and steady	The module is sending data via the CAN bus interface
	Yellow	Off	The module is not sending data via the CAN bus interface
D71	Yellow	On and steady	The module is receiving data via the CAN bus interface
	Yellow	Off	The module is not receiving data via the CAN bus interface
D72	Yellow	On and steady	Terminating resistor integrated in the module switched on
	Yellow	Off	Terminating resistor integrated in the module switched off

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.

Exemple :

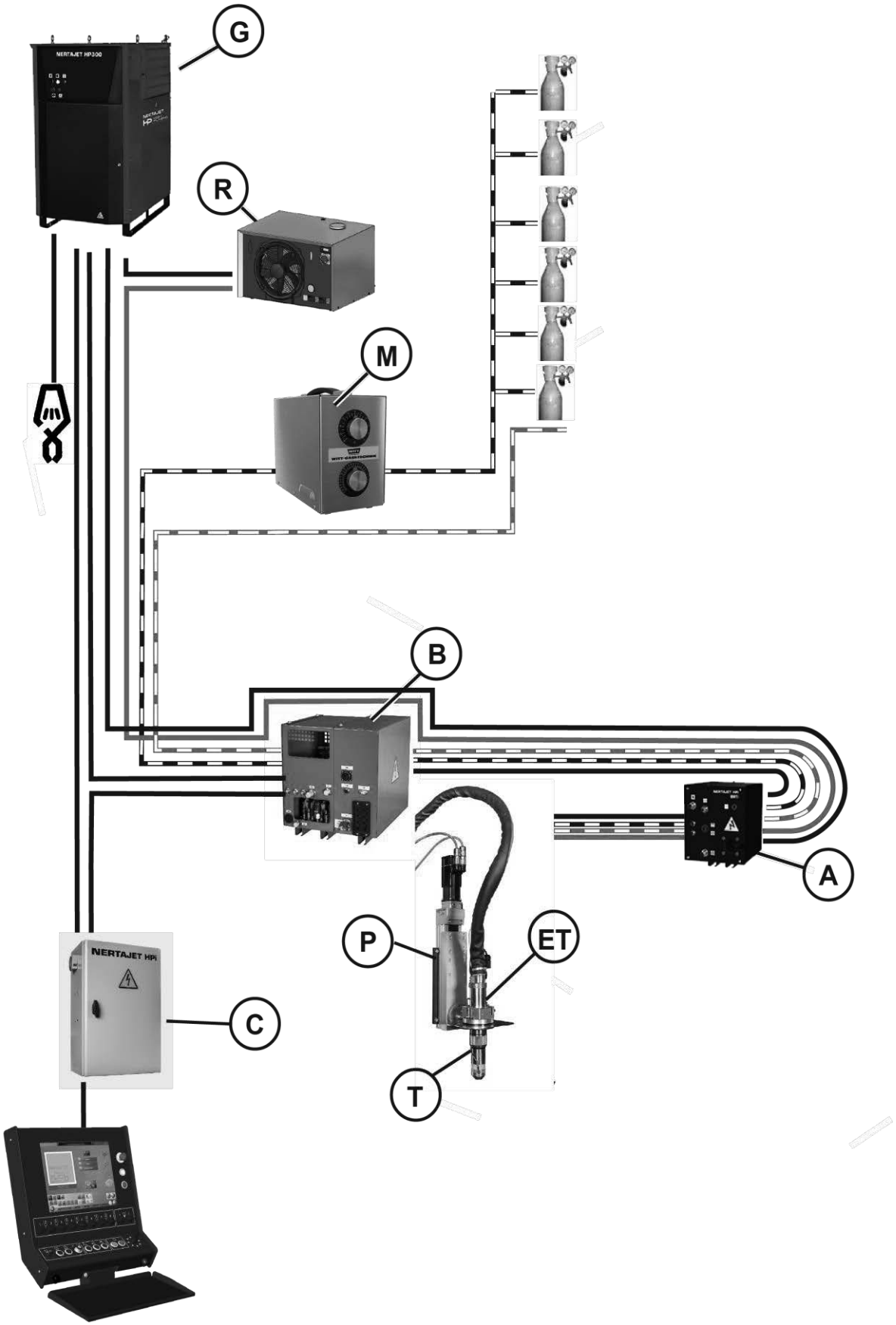
✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
E1	W000XXXXXX	✔		Machine interface board
G2	W000XXXXXX	✘		Flowmeter
A3	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 :

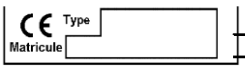
3.1 MAIN PARTS



✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
A	P04097515			Torch connection box (**BRTi**)
B	P04097525			Gas connection box (**BRGi**) => **CPM400**
	P04150215			Gas connection box (**BRGi**) => **T5**
C	P04097441			Cycle function assembly (process box)
ET	W000377822	✔		Torch connector + torch bundle (2.5 m long) => **CPM400**
	AS-CS-04150220	✔		Torch connector + torch bundle (1.6 m long) => **T5**
G	W000379404	✔		**NERTAJET HP 150 HPi** power source
	W000379403	✔		**NERTAJET HP 300 HPi** power source
P	AS-CS-07054360	✘		Numerical tool holder (**THDi 160**)
	P07054370			Numerical tool holder (**THDi 350**)
R	W000380971	✔		**FRIOJET300i** 230V 1P 50HZ
	W000372095	✔		**FRIOJET 720** 400V-3-50HZ
T	W000373985	✔		**CPM400** torch tip
	BK279100			**T5** torch tip
	W000372584	✔		**CPM600wi** torch tip
M	AS-CS-04150251	✘		Mixer (Stainless steel option torch **T5**)

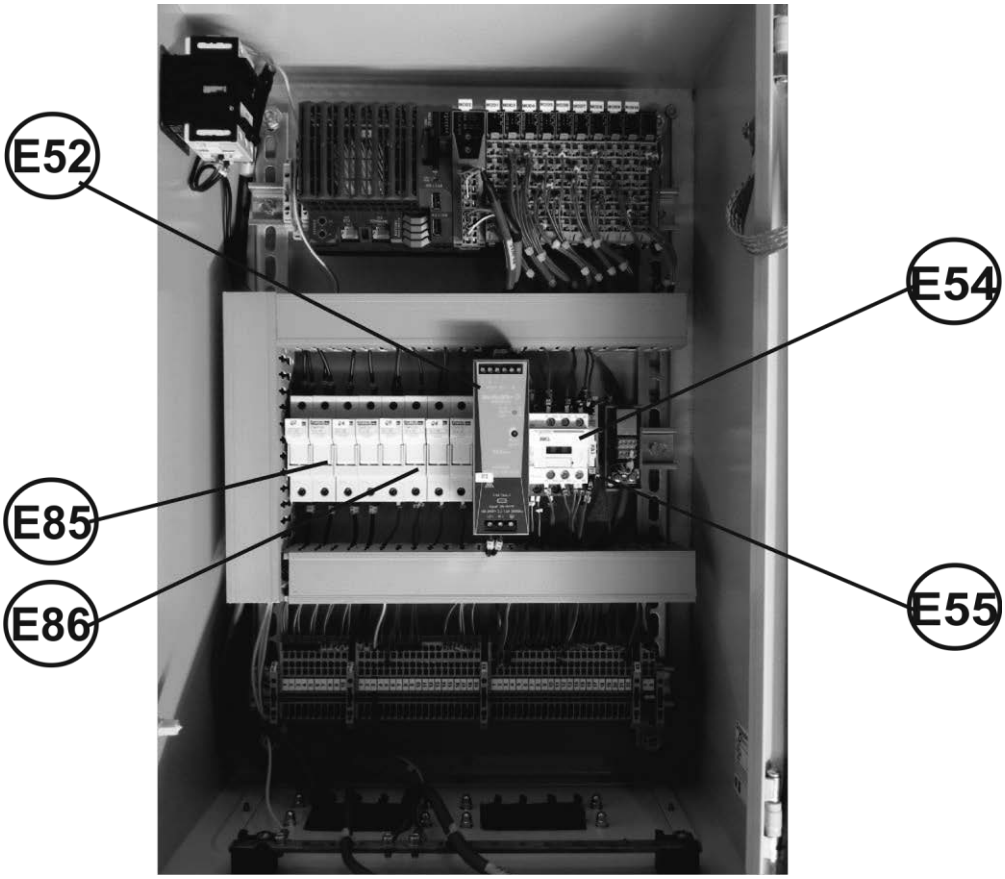
For parts order, give the quantity required and put the number of your machine in the box below.

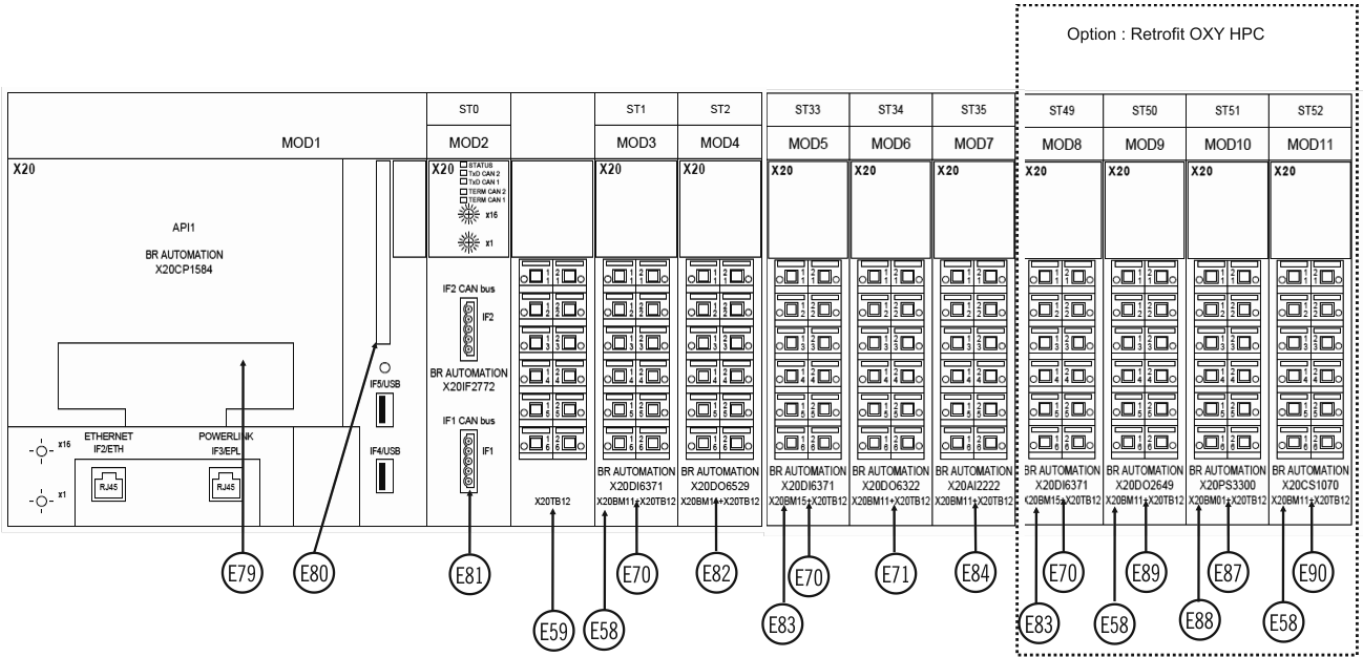


TYPE :

Number :

3.2 INDEPENDENT PROCESS BOX



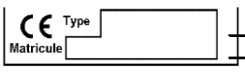


3.2.1 Plasma parte

✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
	P04097801			CA4 HPI Ethernet process box
E52	W000385168	✘		POWER SUPPLY 230VAC-24VDC 5A
E54	W000383699	✘		CONTACTOR LC1D12BD 24VCC 12A
E58	W000383702	✘		X20 BUS MODULE BM11
E59	W000383703	✘		X20 TERMINAL BLOCK TB12
E70	W000383705	✘		X20 DIGITAL 6 INPUTS MODULE
E71	W000383706	✘		X20 DIGITAL 6 OUTPUTS MODULE
E79	W000383973	✘		X20 CPU 1584 PLC
E80	W000383701	✘		512MB CF MEMORY CARD
E81	W000383714	✘		X20 2 CAN INTERFACES MODULE
E82	W000383707	✘		X20 DIGITAL 6 RELAY OUTPUTS MODULE
E83	W000383704	✘		X20 BUS MODULE BM15
E84	W000383713	✘		X20 ANALOG 2 INPUTS MODULE
E85	W000383715	✘		FUSE 10X38 2A AM
E86	W000366062	✘		FUSE 10X38 4A GF

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



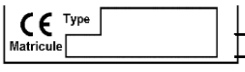
TYPE :
Number :

3.2.2 Retrofit Oxy HPCOPtion

✔	normally in stock
✘	not in stock
	on request

Item	Ref.	Stock	Order	Designation
E55	W000365963	✘		RELAIS 24VAC-DC 6A 1RT
E87	PC5703415			X20 MODULE POWER SUPPLY PS3300
E88	PC5703416			X20 BUS MODULE BM01
E89	PC5703401			X20 MODULE 2S TOR
E90	PC5703319			X20 MODULE Carte CS CAN INTERFACE

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



TYPE :
Number :

PERSONAL NOTES

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