OPERATING AND MAINTENANCE MANUAL

XCOM

CONTROL UNIT FOR MARKING MACHINES

M_XCOM_EN_B - Last updated: 11/2020 - Translation of the French original document

GRAVOTECH

EXPRESSION OF THINGS

Table of contents

A. Foreword

1. Appreciation

Thank you for choosing XCOM - Gravotech.

Gravotech is pleased to count you among the users of its engraving and traceability solutions.

For help, contact Gravotech.

For more information on products, visit www.gravotech.com website.

2. Information

	**To ensure security and productivity, read this manual before starting-up the equipment.** **It provides details about the installation and use of the equipment.** **Keep this manual in case you need to refer to it.**

	**For the attention of users having an individual cardiac assist device fitted:** **Our equipment is designed and manufactured with the greatest care in order to guarantee their compliance with the EMC Directive currently in force. This means that the levels of electromagnetic emissions produced by this equipment when in operation are limited and do not exceed the thresholds defined by the Directive.** **However, multiple factors make it impossible to guarantee the total absence of risk for users having a cardiac assist device fitted. Consequently, it is recommended that standing for a prolonged period within less than 1 m (3.281 ft) of an operating machine should be avoided.**

B. Legal notices

Last updated: 09/2020

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The Product's specifications are altered by (i) any Product's modification or alteration, (ii) any adaptation and installation of accessories that are not recommended by Gravotech, (iii) the integration of a control system and (iv) the connection to an external device. Such specifications' alterations may lead to the non-compliance of the Product with applicable rules and standards. Shall the Product be non-compliant, the person in charge of the Product's installation shall be responsible of the final workstation's compliance. In no event, Gravotech shall be liable for any damages arising from such non-recommended or unauthorized Product's alterations. It is precised that the warranty shall not apply in such case.

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C. Regulation observance

Last updated: 07/2020

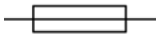
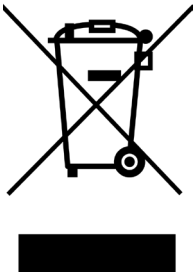
EC declaration of conformity or declaration of incorporation supplied with the machinery

Type of machine	Directives - Standards
Dot peen marking: Machine Impact p, Impact eZ p, Impact m, Impact eZ m Scribing marking: Machine M10, M10 Jewel, M20 Pix, M20 Energy Sharpening by grinding: Machine CG30 Bevelling: Machine B6 Engraving by milling: Machine IM3 M20, M20 Jewel, M20 ABC, M20 Pen, M20 Beauty Cube, M20 V3 M40, M40G, M40 ABC IS200, IS400, IS400 Volume IS6000, IS7000, IS8000 - XP - XP Milling Hot foil stamping: Machine M20 Artfoil Dot peen marking: Transportable machinery - Partly completed machinery XF530p, XF530m, XM500 Dot peen marking: Partly completed machinery XF510Cp-Sp-Dp, XF510Cm-Sm-Dm, XE310Cp-Sp Scribing marking: Partly completed machinery XF510Cr-Sr-Dr, SV510 CCU, Rack, TouchPad UC500, UC500 SV, UC Laser, XCOM Racks IS Laser fume extractor: ES10, ES30, ES50, ES Mini LE120HP, LE140HP, LE150HP, LE190HP, LNI900 Accessory: Partly completed machinery Rotary APF, Laser APF, Dotpeen APF eZ300 Mini-Inline Cylinder attachment: DMC15, DMC25, DMC25PN RD1, RD2, RDM, RD Jewel Rotary Device for LS100, Rotary Device for LS100Ex, Rotary Device for LS900/LS1000XP	- Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU
Dot peen marking: Portable machine XM700	- Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU - Cells and batteries: 2006/66/EC
CO2 and fiber laser marking: Machine (gantry) LS100 Energy, LS100 Ex Energy, LS900 Energy LS100, LS100 Ex, LS900, LS900 XP, LS1000XP LS100 Ex Fibre, LS900 Fibre LS900 Edge CO2, DPSS and fiber laser marking: Machine (galvo) LW1, LW2, LW2 Touch, LW3, WeLase (Cxx, Fxx, Gxx, Hxx), WeLase 360 (Cxx, Fxx, Gxx, Hxx) Laser Solution Hybrid-Series (standard version, version Energy), Laser Solution Green-Series (standard version, version Energy), Laser Solution CO2-Series (standard version, version Energy), Fiber Energy CO2, DPSS and fiber laser marking: Partly completed machinery (galvo) – Class 4 Laser Solution Fiber-Series (standard version, version Energy)	- Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU - Safety of laser products - Part 1: Equipment classification and requirements: EN 60825-1:2008 - Safety of laser products - Part 4: Laser guards: EN 60825-4+A1+A2:2006

D. Description of symbols used

Last updated: 06/2020

1. Shared labels

	*Refer to instructions manual/booklet.*		*Fuse*
	*Alternating current*		*Direct current*
	*The equipment must be disposed of at an appropriate collection point for processing, sorting, and recycling of Waste Electronic and Electrical Equipment (WEEE).* *By following these instructions, you are helping the environment, contributing to the preservation of our natural resources, and protecting human health.*		*European conformity*

2. Required safety labels

	*General warning*		*Warning: Electricity*
	*Warning: Crushing of hands*		*Warning: Hot surface*
	*Warning: Flammable materials*		*Warning: Laser beam (only for machines equipped with a marking laser or a laser pointer)*
	*Warning: Rotation of the spindle (only for machines equipped with a spindle)*		

E. Introduction

1. Presentation

The Control Unit is designed to manage the markings performed by the numerically controlled Heads manufactured by Gravotech. It contains the control and power electronics, as well as a screen. The Control Unit is the centre of the traceability system.

The Control Unit is supplied with:

- SubD9 connector with bridging (male): Wiring of the "Stop marking" contact

2. Identification of the marking equipment

The marking equipment is identified by:

- 1 identification plate on the Control Unit

Have the model and serial number of the equipment available when contacting Gravotech.

F. Unpacking

Depending on the order, the Control Unit is packed on its own or with a machine.

In order to protect the machine from humidity and dust, keep the machine in its original packaging in case of prolonged storage.

1. Unpacking - Package contents

The packaging and its contents may vary according to the marking head.

See the user manual of the machine.

G. Safety

1. Work station safety

■ Personnel safety

	**Turn off the machine before beginning any cleaning, maintenance or repair procedure.**

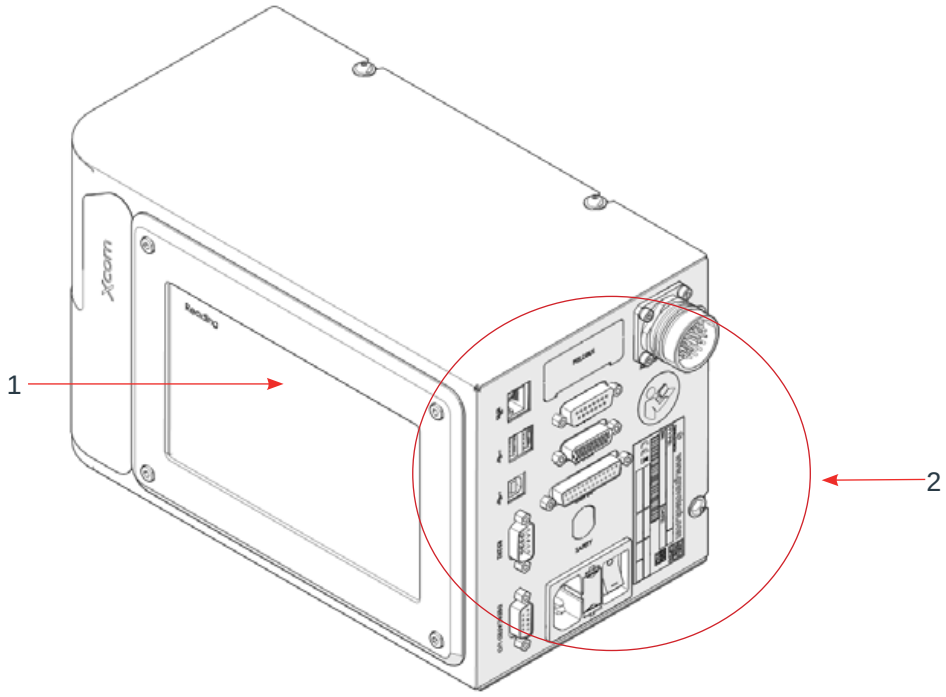
- The XCOM machine is designed for marking applications. If used for other purposes, Gravotech cannot guarantee the quality of the result. Gravotech is not responsible for damage caused by inappropriate use of the machine.
- Do not use this marking equipment in an explosive environment.
- Use the appropriate protection when equipment is used in a polluted environment. Use of these protections are the user's or the integrator's responsibility.
- Depending on the application (tooling or heavy parts), it is recommended to wear safety shoes and work gloves.
- At the time of disposal, wearing personal protective equipment (PPE) is recommended to dismantle the mechanical elements of the machine.
- This equipment is not designed for outdoor operation.
- In the event of an emergency, to bring all moving parts to a stop:
  - Put the On/Off switch in the "O" (Off) position
  or
  - Disconnect the power cable.

■ Handling the machine

- This marking equipment is designed to function at a room temperature between 5 °C (41 °F) to 45 °C (113 °F).
- This marking equipment is not designed to operate in damp premises.
- The machine must be handled with extreme caution.
- The machine must be clean and protected from dust. In the event of an extended period of non-use, unplug the power cable and protect the machine.
- Never pour or spill liquid on the machine (drinks, cleaning products, etc.) except where recommended by Gravotech.

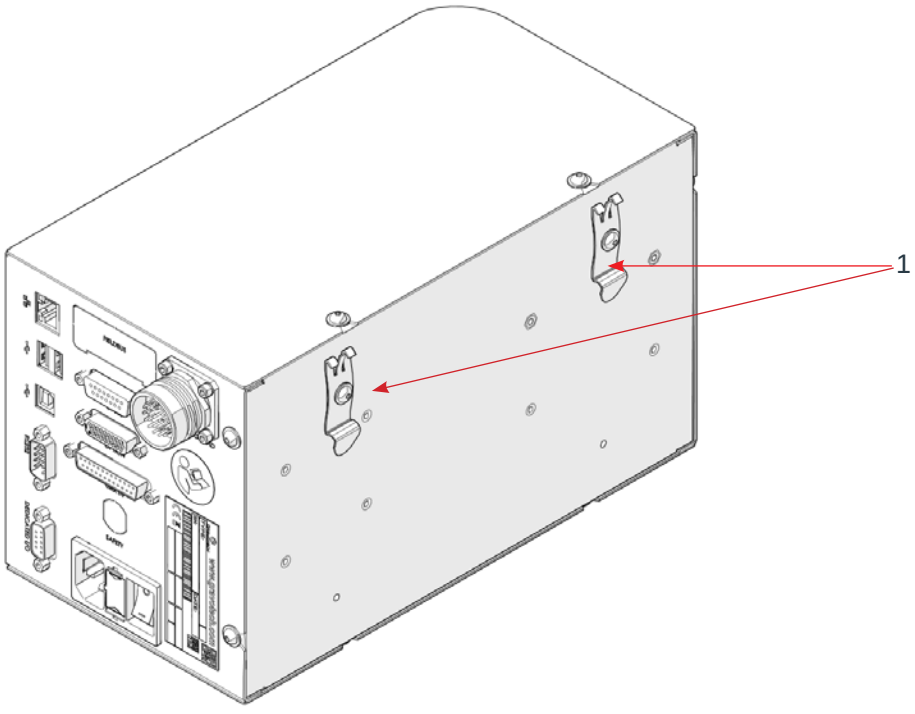
H. Description of the Control Unit

1. Front view of the machine



1. *Color touch screen*
2. *Connectors (See: View of connectors)*

2. Rear view of the machine



1. *Hook(s) (DIN)*

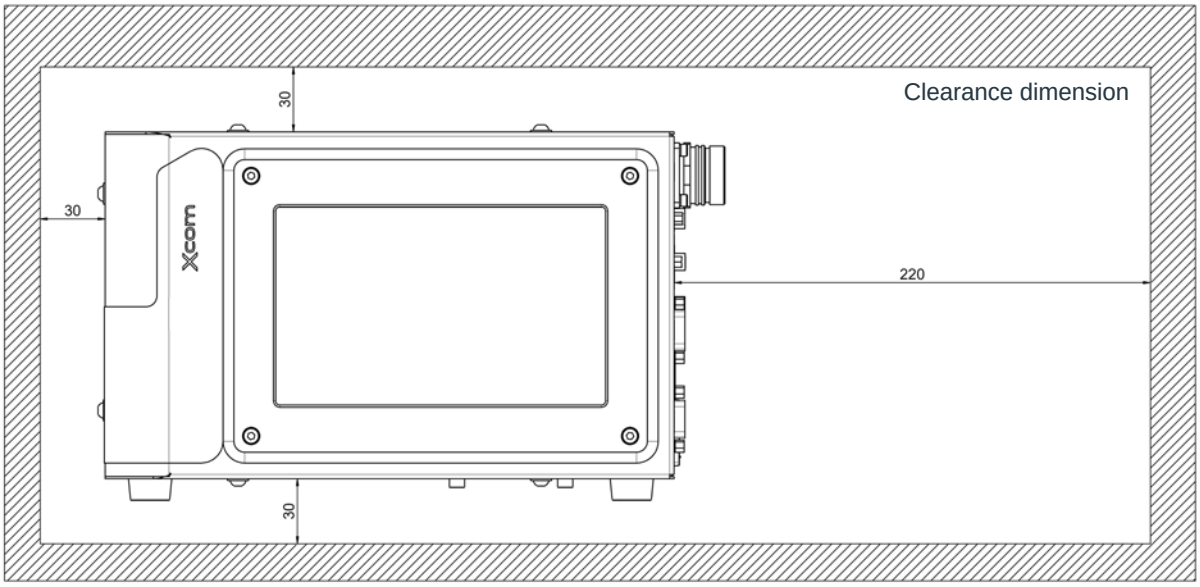
I. Installation

1. Physical installation

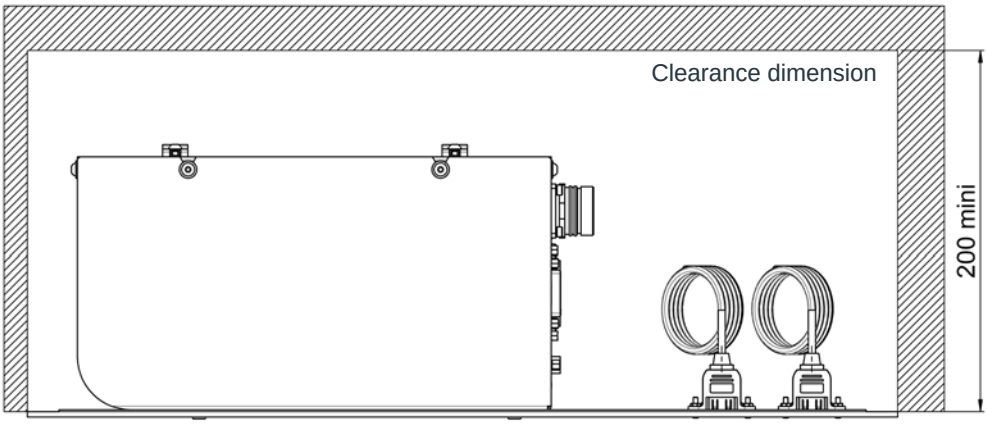
Position the Control Unit horizontally, in a dry, ventilated area, at least 20 cm (7.874 in) from the floor. Allow clearance (connections and cables): right side of the machine

Mounting hooks for DIN rail are located at the back.

Do not obstruct air circulation under the machine. Respect the clearance areas indicated on the drawing.



Front panel: 19" 5U



Installation

2. Electrical installation

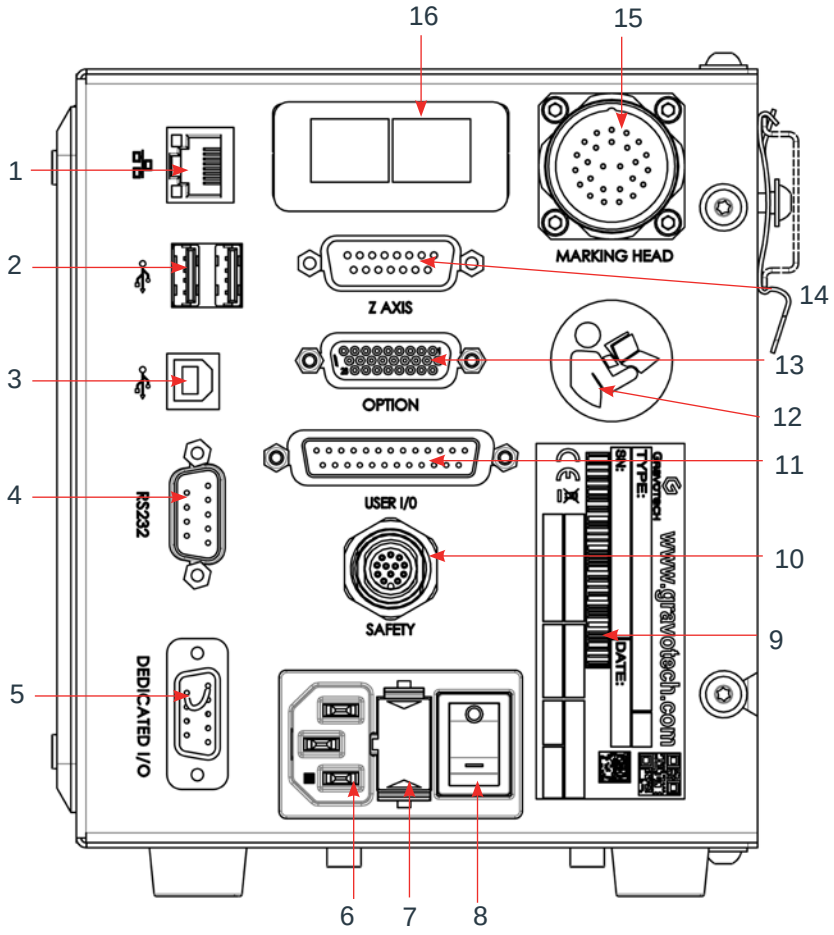
	**Turn off the machine before beginning any cleaning, maintenance or repair procedure. Always switch the machine off before connecting or disconnecting a cable or optional accessory.** **Never unplug a cable while the machine is turned on (except for the mains lead in the event of an emergency). The power outlet must be located alongside the equipment and must be easily accessible.** **Do not remove the power supply cover: risk of electric shock. The connection to the single phase power supply is made with a standard, 3 pin plug with grounding. Grounding must be done according to the regulations in effect to ensure the safety of the personnel.**

To avoid interference problems due to the external environment, observe the following:

- Use the link cables supplied. They comply with EMC radio-frequency interference emission standards and provide protection from external electrical interference (compliant with EMC immunity and susceptibility standards).
- Bring the items of equipment to be linked as close together as possible to reduce the length of cable to be used.
- Separate the power cable from the link cable and make sure the power and link cables do not run through the same cable tray.
- Connect the machine direct to a mains power line and avoid connecting more than one device to that line (by plugging several devices into the same mains socket or into a multi-way adapter).
- Do not allow inductive or capacitive devices to be connected to the same mains power line as the machine (motors, solenoid valves, chargers, etc.).
- Avoid the installation of manual or automatic switching systems on the same mains power line as the machine (relays, timers, programmers, automatic circuit-breakers, automatic switches, etc.).
- Check that devices in the vicinity of the machine meet the standards for electromagnetic interference. Read the technical data sheet for each device. If they are non-compliant, move them as far away from the machine as possible.
- Connections and cabling: separate the power supply cables from the control cables in cable ducts and in the cabinet (for control cables, a section of 0.34 mm² is recommended).
- Equipment filtering: the relays connected to the marking machine should include a device for suppressing interference on the operating coil (freewheeling diode for DC relays or RC circuit for AC relays).
- Connection of shielding: the communication cables (All Or Nothing I/O or Ethernet - RS232 computer cables) must be shielded with both ends of the shielding connected to the equipment ground via the shortest possible link.
- Grounding: connect together all the conductive metal grounds (no paint or treatment such as anodization) of the equipment (frame, cabinet, marking machine) to ensure effective connection. Where possible, there should be multiple connection points to improve the connection quality.
- Use the Gravotech accessories.

J. Connections - Installation

1. View of connectors



1. : *Ethernet connection (RJ45)*
2. : *USB Host connector (x2)*
3. : *USB Device connector: Machine / PC connection (not available)*
4. *RS232: RS232 management connection (Sub-D9M)*
5. *DEDICATED I/O: Dedicated Inputs/Outputs (Sub-D9F)*
6. *Power connector*
7. *Fuse carrier*
8. *On / Off switch*
9. *ID plate*
10. *SAFETY: emergency stop (optional): M12 (male) - 12 channels*
11. *USER I/O: Generic Inputs/Outputs (Sub-D25F)*
12. *Safety label*
13. *OPTION: connection(s) for accessory(ies): Rotary Device (cylinder attachment): Sub-D26F - High density*
14. *Z AXIS: Z axis (Sub-D15F)*
15. *MARKING HEAD: head/CCU connecting cable*
16. *FIELDBUS: fieldbus (optional)*

Connections - Installation

2. Connections

The different elements of the equipment must be connected with the power off. The power supply should be connected last.

To use the CCU, 3 connections must be performed, in the following order (minimum):

- Wiring of the "Stop marking" contact: SubD 9 connector (female) - with jumpers
- Marking head
- Power supply

■ Wiring of the "Stop marking" contact

The machine comes delivered with a SubD 9 point connector with bridge so that it can be used immediately.

It must be connected to the dedicated Inputs/Outputs connector located on the right side of the CCU.

The connector supplied is only used to test the machine. Under normal operating conditions, open the electrical connection between pins 5 and 9 to activate the "Stop marking" function. If this connection is not performed, the Stop function is active and no marking is possible.

■ Connection of the marking head to the CCU

Connect the marking head and the CCU via their connection cable. Firmly insert the plugs, and tighten the locking rings. Check that the connection is appropriate.

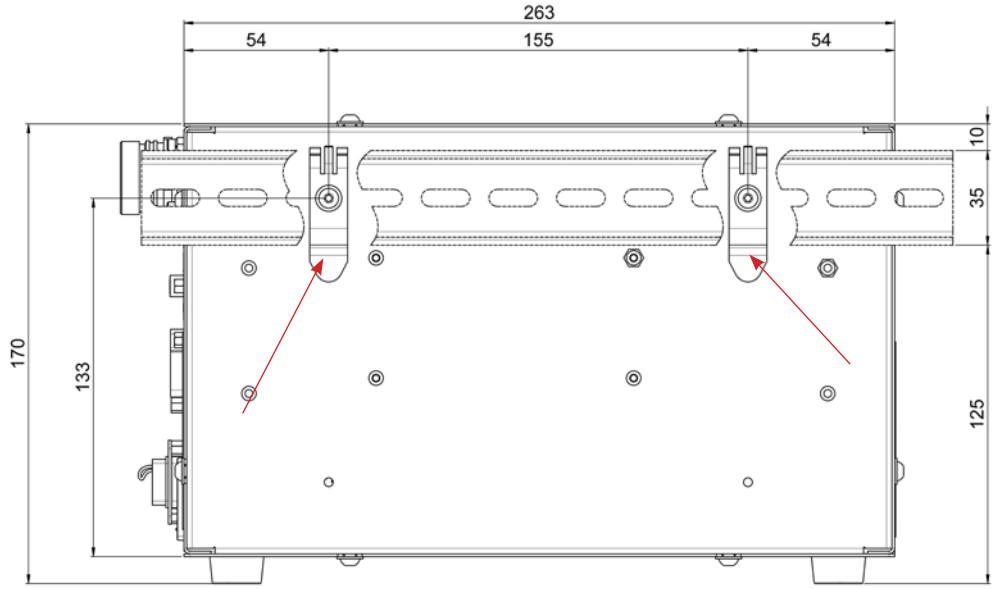
■ Power supply connection

- Plug the CCU to the power supply using the cable provided.
- Place the switch in the "I" position (On).

The machine is operational.

Connections - Installation

3. Hook(s) (DIN): Installation location(s)



Units: mm

4. Installation

■ Switching on the machine

1. Place the switch in the "I" position (On).

A presentation screen will appear for a few seconds, followed by the main menu screen.

	**Leave the machine powered on, even if it is only going to be used at intervals.**

If the machine does not switch on:

- Check that the power cord is correctly plugged in to both the machine and the power supply.
- Check that there is power to the mains plug.

Connections - Installation

■ Power down

1. **Set the general stop button to the "O"(Stop) position.**

Switch off the machine in the following situations:

- when the operator is permanently leaving the machine
- in the event of physical damage (something is dropped on the machine, fire, a liquid is spilled on the machine, etc.)
- mechanical/electrical/electronic faults suggesting a breakdown
- if there is a major problem or the machine is jammed mechanically
- the machine is jammed on the part to be engraved/marked
- the machine is jammed on an object in the work area
- forced restart
- external/internal cleaning

■ Restarting

If the machine or the operating program locks, the machine may need to be restarted.

1. **Switch off the machine.**
2. **Wait approximately 30 s.**

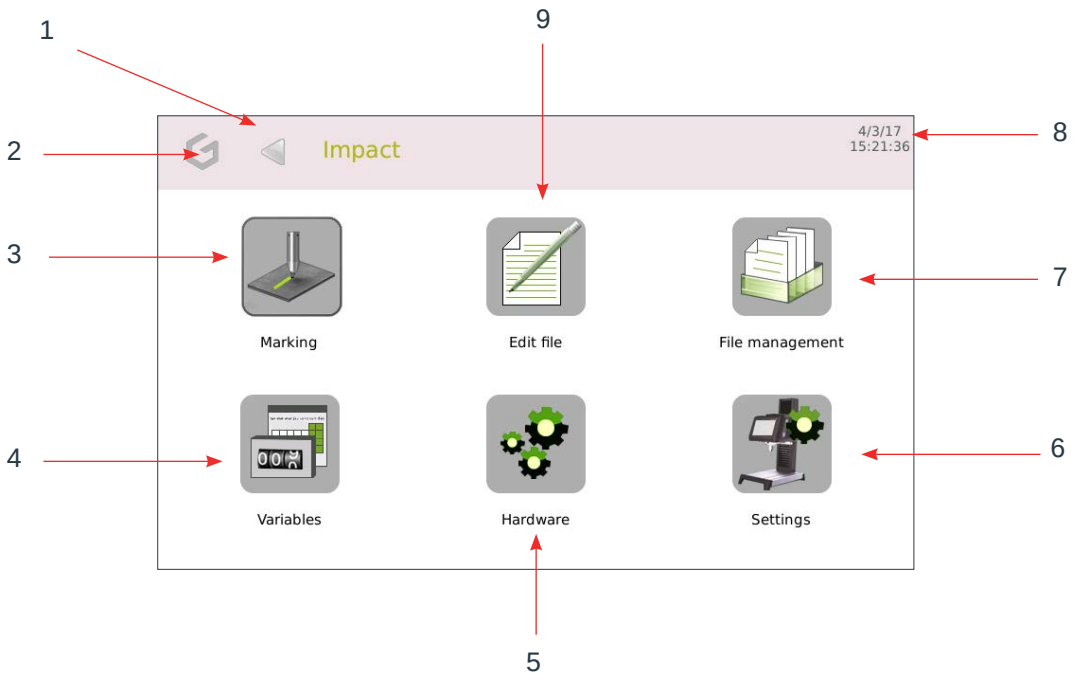
	**This waiting time must be respected. It prevents an electric surge likely to damage the machine's power supply.**

3. **Switch on the machine.**

K. Using the machine

1. Using the T08 program

The home page is composed of 6 menus, each represented by an icon.



1. *Return to previous screen*
2. *Icon used to return to the main menu, followed by the name of the menu. This icon appears several times in the program.*
3. *Menu: Marking*
4. *Menu: Variables*
5. *Menu: Hardware*
6. *Menu: Settings*
7. *Menu: File management*
8. *Date/Time*
9. *Menu: Edit file*

Refer to the user manual for the T08 program.

L. Communication

The Control Unit can be used in various modes:

- Human mode: can be used by a human user, who interacts via the Man-Machine Interface with no need for any other external device.

Description of the human-machine interface: color touch screen and/or Dedicated Inputs/Outputs, Barcode reader, 2D-code reader.

Example: an operator performs a variety of markings on various pieces, in short runs.

- Independent mode: used to mark the same marking file a set number of times. It acquires simple information from external sources (On/Off, text to be marked): color touch screen, dedicated Inputs/Outputs, barcode reader, 2D-code reader, serial port, …

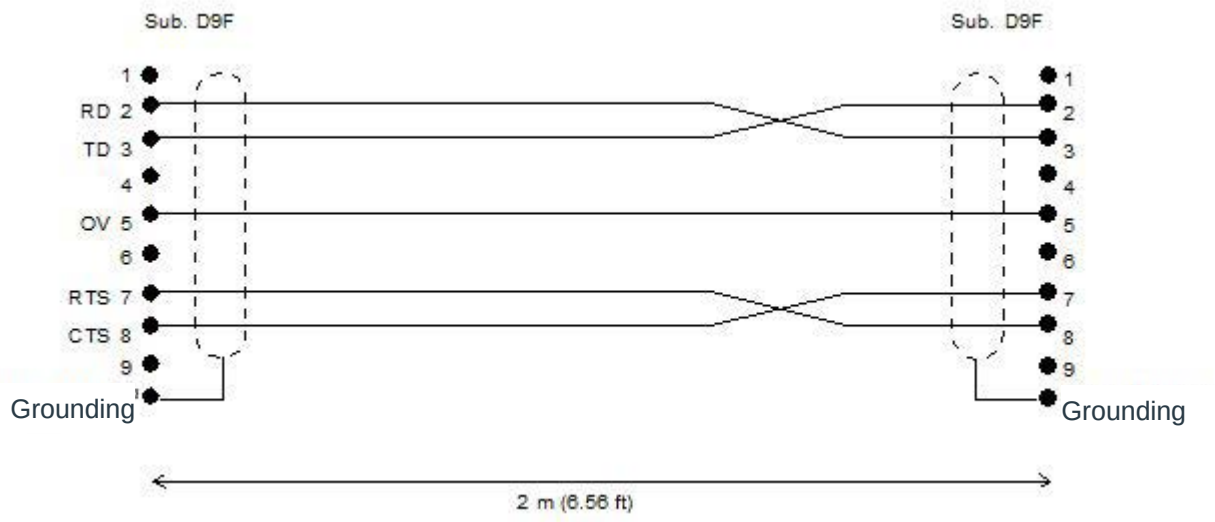
Example: an operator or a simple automation performs markings on similar pieces, in medium to long runs.

- Controlled mode: when this mode is activated, the machine is controlled directly by a remote peripheral. The command instructions can be used on a variety of media:
  - Ethernet – TCP/IP
  - Fieldbus (optional): Profinet, Ethernet IP, others on request
  - RS232

Example: a machine integrated into the production line performs a range of markings on a wide variety of pieces, in long runs. Two-way communication is extensive.

1. RS232 cable

Serial connection ensures compatibility with the previous generation and with earlier peripherals. Its use is not recommended for new installations.

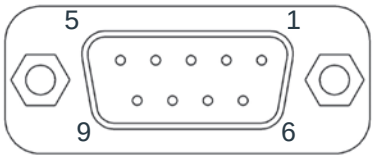


Metallic SubD9F for shielded cables

Communication

2. Dedicated Inputs/Outputs

Wiring of the female 9 SubD connector



This connector allows to communicate with the machine. It contains dedicated All-or-Nothing Inputs and Outputs. They are used in the marking cycle (accessory connection (button box for start / stop cycle or start cycle foot pedal...)).

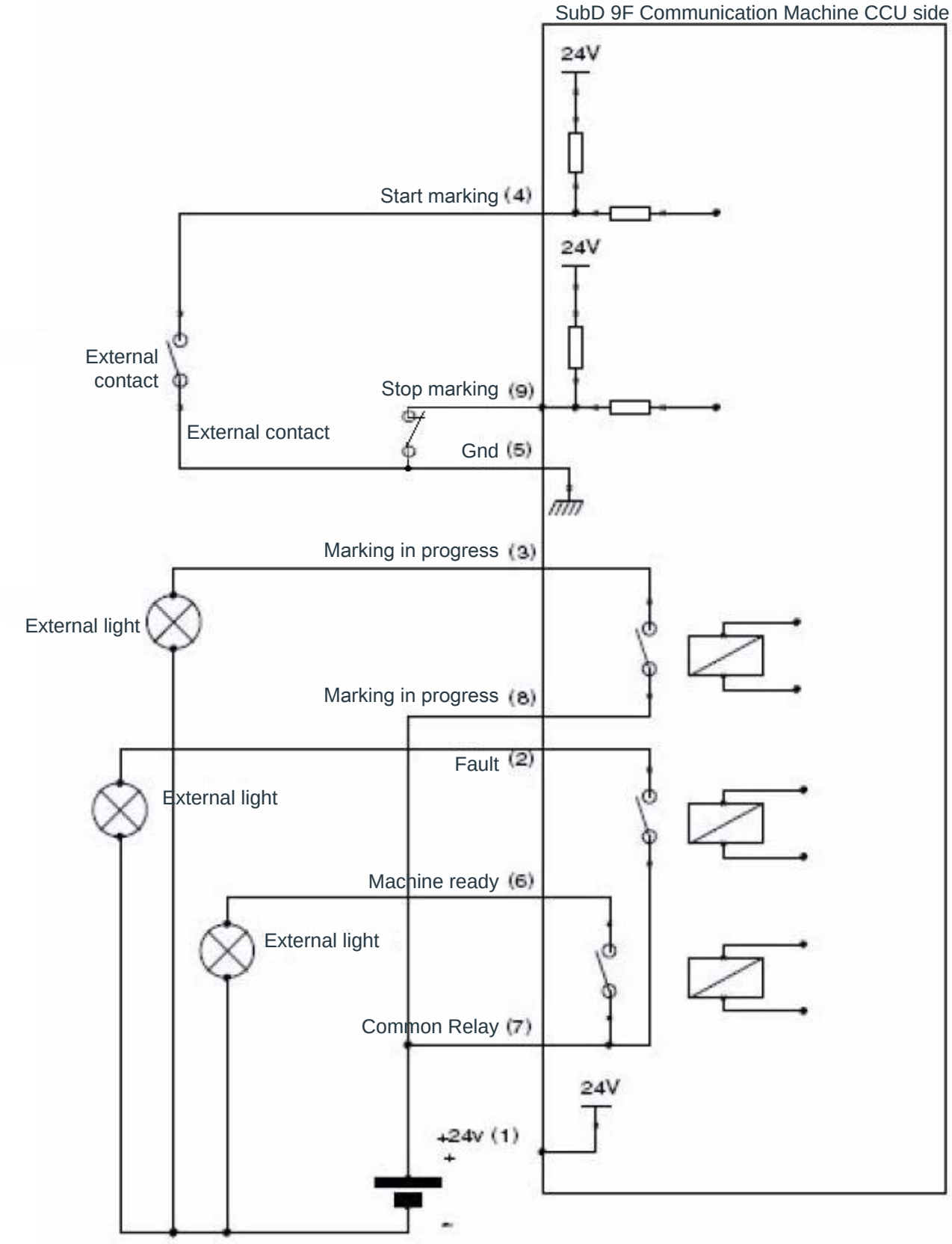
	**Use exclusively shielded cable. Connect the shielding to the electrical ground on either side of the cable.**

Pin functions

Number	Description	Allocation
1	Internal power supply	+ 24 V - 300 mA max (common to all outputs)
2	Relay # 2	Output - Fault
3	Relay # 3	Output - Marking in progress
4	Input 1	Input - Start marking
5	Gnd	Grounding
6	Relay # 1	Output - Machine ready
7	Common Relay # 1-2	
8	Relay # 3	Output - Marking in progress
9	Input 2	Input - Stop marking

Communication

Connection diagram for the dedicated Inputs / Outputs



Communication

Note

In the diagram above, the Inputs are wired to the internal power supply, available on the connector of the CCU (+ 24 V DC). The "Marking in progress", "Machine ready" and "Fault" Outputs are wired to an external power supply.

■ Description of the communication signals

- Start marking (Input)
  - To activate the "Start marking" Input, establish a zero potential electrical connection between pins 4 and 5.
  - This connection must not be inferior to 500 ms nor superior to the cycle time of the marking file.

- Stop marking (Input)
  - To activate the "Stop marking" function, open the electrical connection between pins 5 and 9.
  - This input does not guarantee immediate stoppage. A connector with 2 channels enables the achievement of a safety level PL d (optional) (EN ISO 13849-1: Performance Level d).
  - Safety management: 9 connector (optional)

- Marking in progress (Output dry contact)
  - The information "Marking in progress" is available between pins 3 and 8. It is provided by a potential free "dry" contact (relay contact).
  - This signal indicates that the CCU is performing a marking.

Characteristics	Maximum voltage Maximum intensity	24 V DC 250 mA
Status	Marking in progress	Depending on the mode selected

- Machine ready (Output dry contact)
  - The information "Machine ready" is available between pins 6 and 7. It is provided by a potential free "dry" contact (relay contact).
  - This signal indicates that the CCU has received all the instructions required to perform a marking.

Characteristics	Maximum voltage Maximum intensity	24 V DC 250 mA
Status	Machine ready Machine not ready	Closed contact Open contact

Note

The 7 pin is common to the "Fault" information and to "Machine ready". See: Connection diagram for the dedicated Inputs / Outputs

Communication

- Fault (Output dry contact)
  - The information "Fault" is available between pins 2 and 7. It is provided by a potential free "dry" contact (relay contact).
  - This signal indicates that the CCU has a fault (either of power, or of CPU).

Characteristics	Maximum voltage Maximum intensity	24 V DC 250 mA
Status	Fault	Closed contact

■ Timing diagrams of the communication signals

Operating mode with the internal program T08

Launch a "Start cycle"	Close the dry contact between pins 4 and 5.
Stop the cycle	Open the dry contact (normally closed) between pins 9 and 5.
Obtain the "End of cycle" information	Depending on the mode selected

Remarks

- Pause:

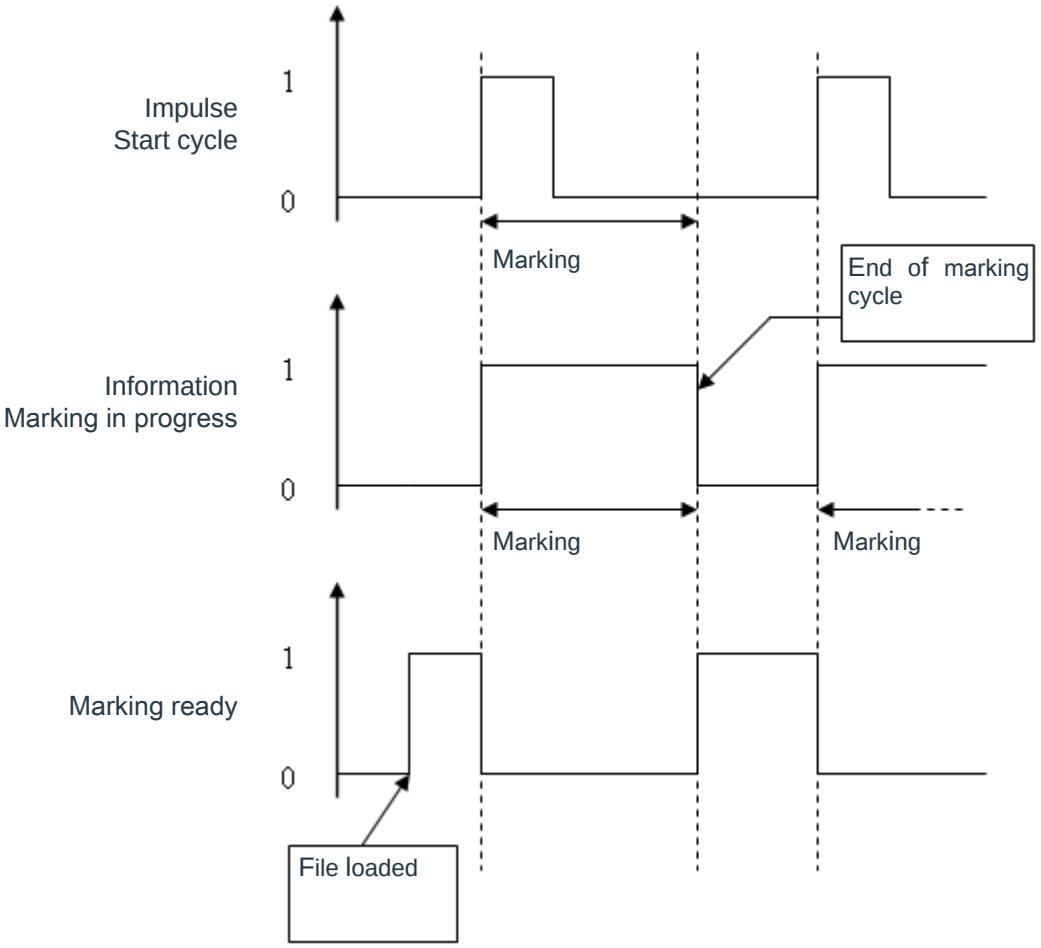
Whatever the mode selected: when marking is interrupted, the "Marking ready" signal returns to state 1. Other signals are not modified.

- Fault:

Whatever the mode selected: if a fault occurs, the "Fault" signal changes to 1 status. The other signals return to state 0 until operator acknowledgement.

Communication

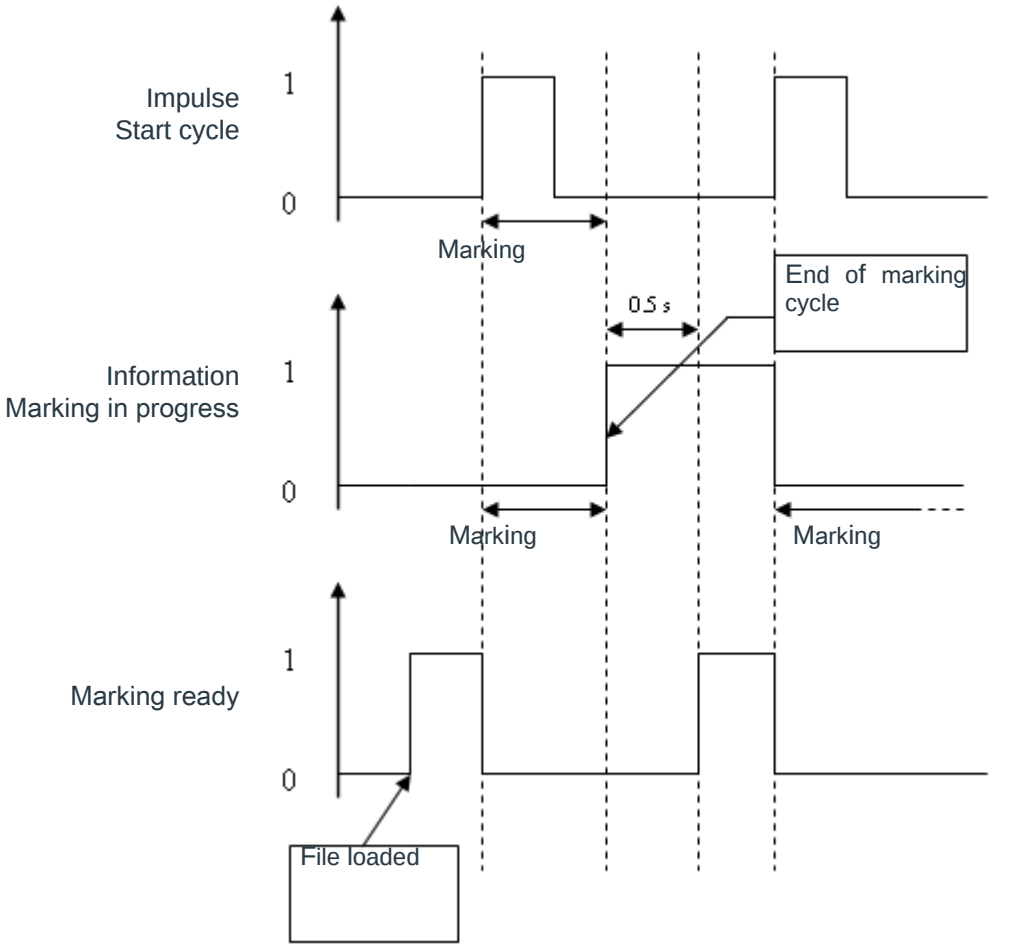
- In-process mode:



This mode is selected by default.

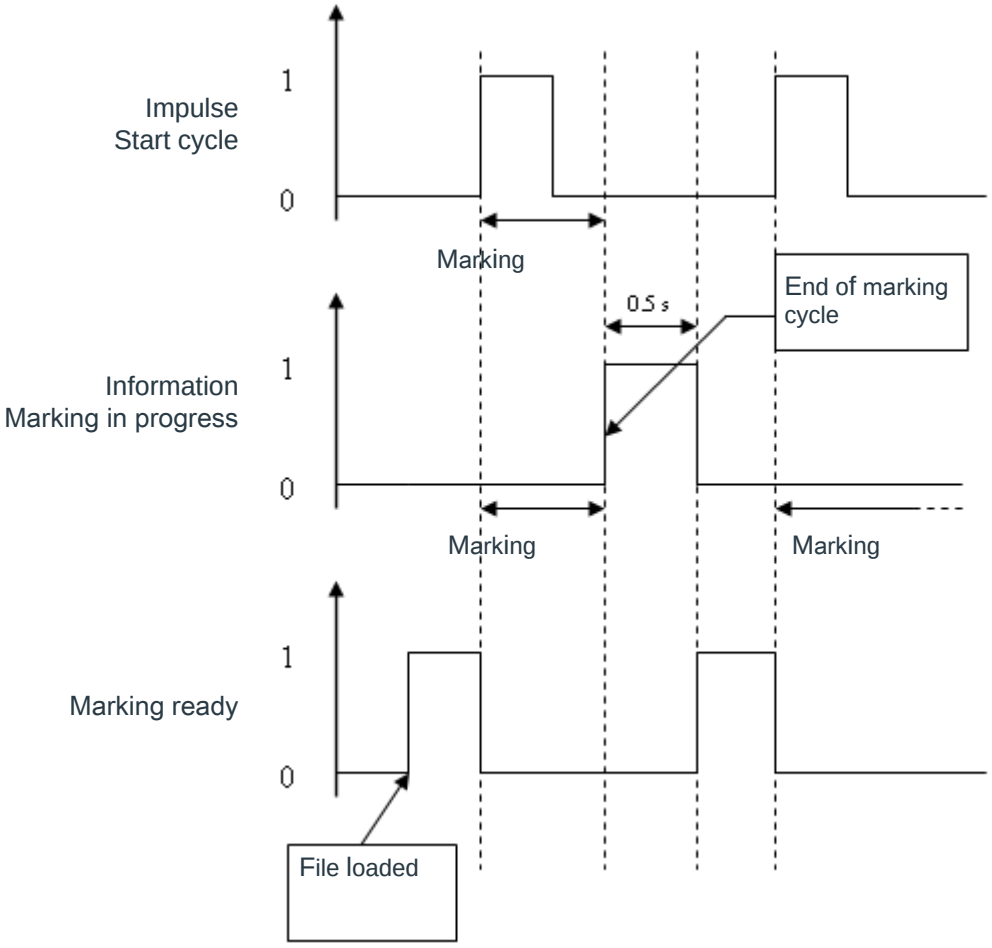
Communication

- Maintained mode:



Communication

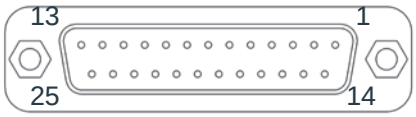
- Pulse mode: Use only recommended with earlier-generation machines.



Communication

3. Generic Inputs/Outputs

■ Wiring of the female 25 SubD connector



This connector allows the connection of generic Inputs/Outputs.

	Use exclusively shielded cable. Connect the shielding to the electrical ground on either side of the cable.

Pin functions

Number	Description
1	+ 24 V - 300 mA max (common to all outputs)
2	Input I0
3	Input I1
4	Input I2
5	Input I3
6	Gnd
7	Gnd
8	Output O0
9	Output O1
10	Gnd
11	Not connected
12	Not connected
13	Not connected
14	+ 24 V - 300 mA max (common to all outputs)
15	Input I4
16	Input I5
17	Input I6
18	Input I7
19	Gnd
20	Gnd
21	Output O2
22	Output O3

23	Gnd
24	Not connected
25	Not connected

■ Characteristics of the Inputs

8 non-insulated inputs are available and can be operated in positive logic.

It is possible to control the Inputs with the + 24 V internal voltage available on pins 1 and 14, and referenced Gnd on pins 6-7-10-19-20-23.

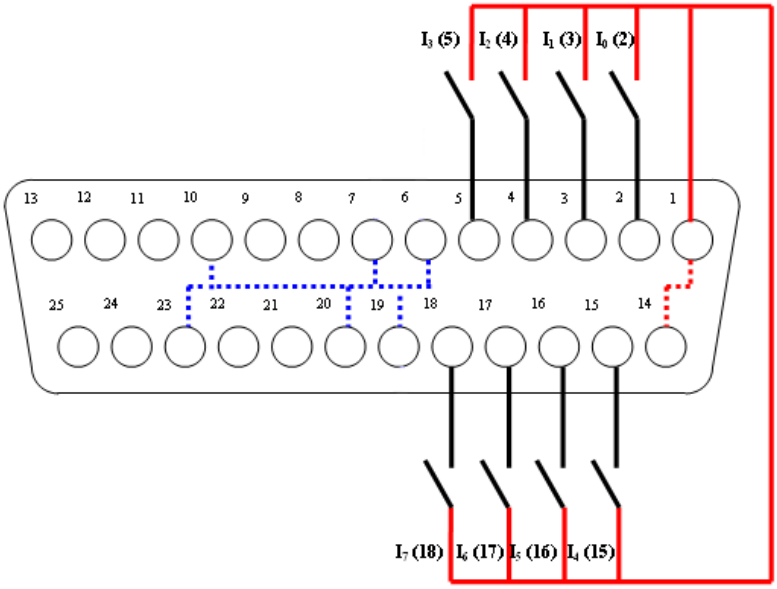
Note

The current delivered by the + 24 V voltage (pins 1 and 14) should not exceed 300 mA (common to all outputs).

- Consumption and operating range of the Inputs
  - Applicable voltage per Input: 12 V - 24 V
  - Intensity consumed per Input: approximately 5 mA

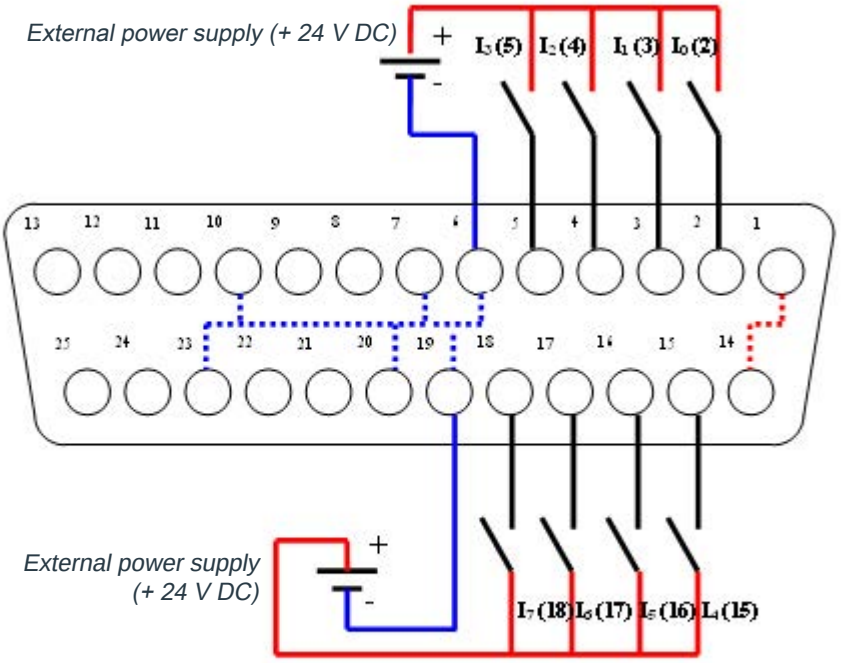
Communication

- Wiring of 8 inputs with power supplied by XCOM



Internal connections: + 24 V DC power supply (1-14) - Gnd (6-7-10-19-20-23)

- Wiring of 8 inputs with power supplied by the user



Internal connections: + 24 V DC power supply (1-14) - Gnd (6-7-10-19-20-23)

Communication

■ Characteristics of the Outputs

4 Outputs of the type NPN with open collector are available.

The maximum external power supply for the Outputs is 24 volts (continuous current).

The maximum current that can be commutated by an Output is 40 mA.

	**The Outputs are not protected against polarity inversion and over current. When connecting inductive charges use an anti-parasite protection and a freewheeling diode to avoid damaging the Outputs.**

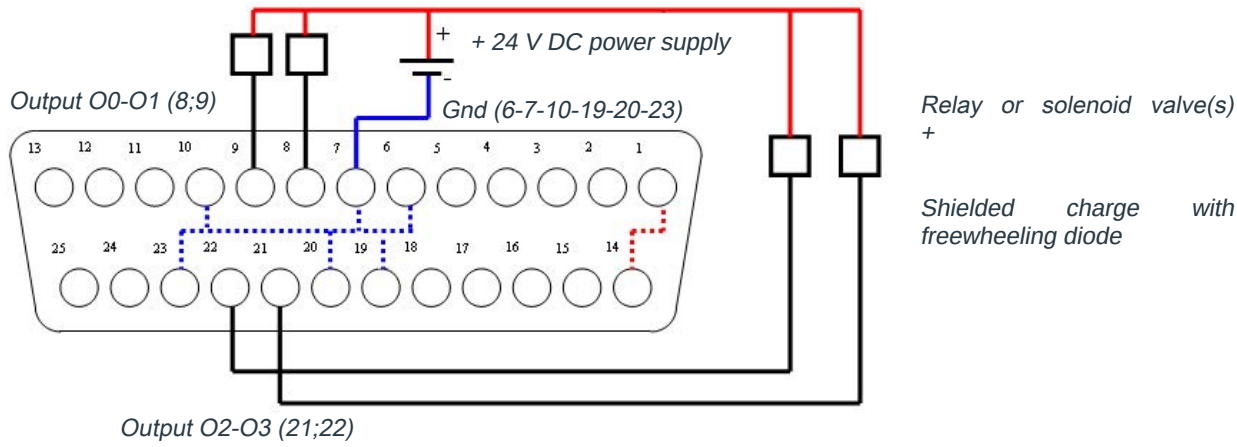
Remarks

The + 24 V internal voltage (pins 1 and 14) is not protected from short-circuits.

The current delivered by the + 24 V voltage (pins 1 and 14) should not exceed 300 mA.

Wiring of 4 outputs with power supplied by the user

Relay or solenoid valve(s) + Shielded charge with freewheeling diode



Internal connections: + 24 V DC power supply (1-14) - Gnd (6-7-10-19-20-23)

Communication

4. USB Host connector

- This connector allows to connect a USB key for:

- saving or loading files
- updating the internal program T08

Remarks

- The key must be formatted in FAT32.
- The external hard drives cannot be used.

	**Never remove the key during a transfer between the CCU and the key. Doing so may destroy the files or the key.**

- Supports barcode and 2D code readers for text acquisition.

In order to be recognized, the reader used must be set up for (HID) keyboard emulation, and US keyboard standard layout (American QWERTY keyboard).

A carriage return <CR> at the end of the text automatically confirms the scanned text without the need to press the touch screen.

5. RJ45 - Ethernet connector

Allows the Ethernet networking of the machine (10/100 Mb/s).

Protocol: TCP/IP, Fixed IP mode Or DHCP.

Communication

6. FIELDBUS connector (optional)

Depending on the type of fieldbus chosen as an option, there may be 1-2 connector(s), of variable type (RJ45, M12,...).

The connectors and signals conform to the type of fieldbus chosen.

7. SAFETY connector (optional)

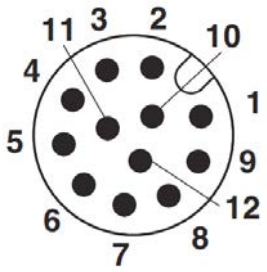
This circular screw connector M12 has 12 contact(s).

4 of the contacts can be used for a 2-channels safety chain. Enables the achievement of a safety level PL d (EN ISO 13849-1: Performance Level d).

The others are reserved for a different use. Do not use.

■ connector

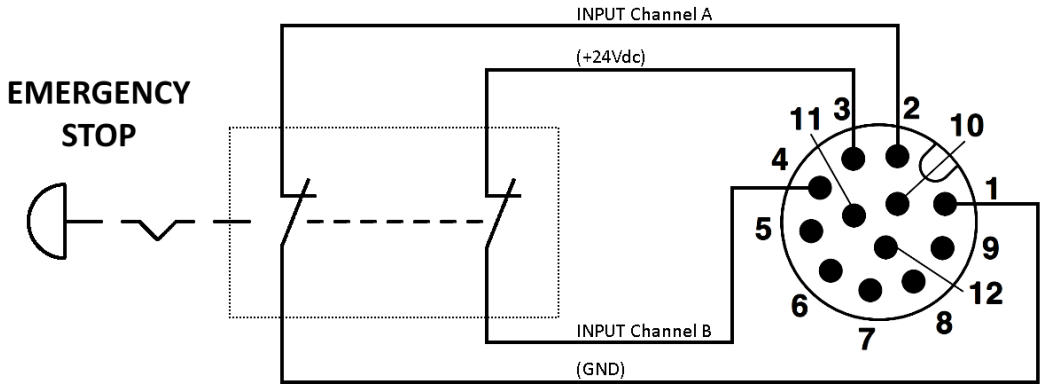
Male connector M12 on panel installation

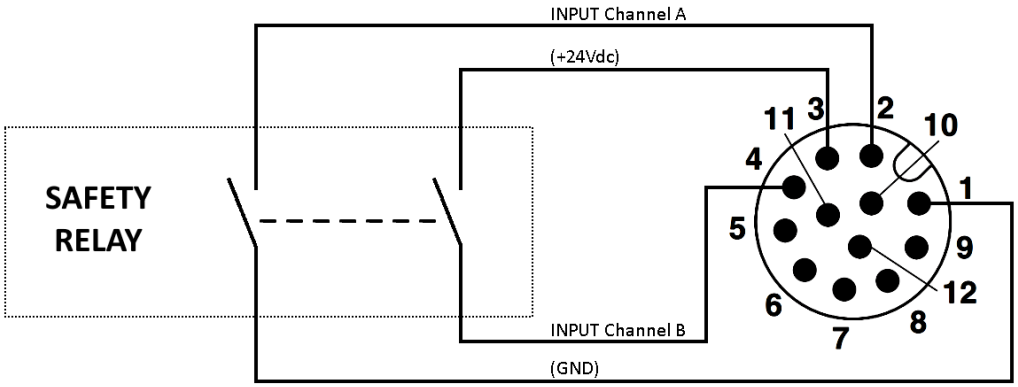


Pin(s)	Description		
	Signals	**Configuration of the contacts**	**Device**
1	GND	NC (normally closed)	E-Stop
2	INPUT (Channel A)		
3	+ 24V DC (This is not a power supply.)	NC	
4	INPUT (Channel B)		
5	Do not use.		
6			
7			
8			
9			
10			
11			
12			

Communication

- Examples





	**Install the wiring as shown.**

M. Accessories available upon request

The accessories mentioned below are available upon request.

Power cable

Ref.	
11731	Power cable 2 m (6.562 ft): Europe
51977	Power cable 2 m (6.562 ft): Great Britain
11800	Power cable 2 m (6.562 ft): Switzerland
11732	Power cable 2 m (6.562 ft): USA
66817	Power cable 2 m (6.562 ft): China

Head/CCU connecting cable - standard version

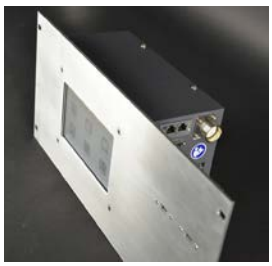
Ref.	
52845	3 m (9.842 ft) Head/CCU connecting cable
52846	6 m (19.685 ft) Head/CCU connecting cable
52847	10 m (32.808 ft) Head/CCU connecting cable
52848	15 m (49.212 ft) Head/CCU connecting cable

Head/CCU connecting cable - robotic version

Ref.		
XCOM p	XCOM m	
52853	67526	3 m (9.842 ft) Head/CCU connecting cable
52854	67527	6 m (19.685 ft) Head/CCU connecting cable
52855	67528	10 m (32.808 ft) Head/CCU connecting cable
52856	67529	15 m (49.212 ft) Head/CCU connecting cable

Ref.		
52874	**Adapter: 90°** Used to obtain an elbow output of the electric connector.	
51609	**RS232 cable** Used to connect the CCU to the serial port of a PC or a PLC for data transfer.	

Accessories available upon request

Ref.		
82030	**Workbench support with handle**	
82031	**Front panel: 19" 5U** Used to integrate the CCU in a cabinet.	
	Gravotrace standard marking program Developed in a Windows environment, this program combines all the capabilities and user-friendliness of a PC. Contact Gravotech.	
52717	**Button box for start / stop cycle** The green button is used to launch marking (same function as the foot pedal). The orange button is used to stop either a single marking in progress or a series of markings before it reaches the end.	

Start cycle foot pedal

Ref. 52712	**Office footswitch** A simple touch of the pedal will launch a marking "n" times, leaving the operator with both hands free. The foot pedal is not designed to stop marking.	
Ref. 52713	**Industrial footswitch** Same use as described above. This foot pedal is especially designed for industrial work environments or for high rate production.	

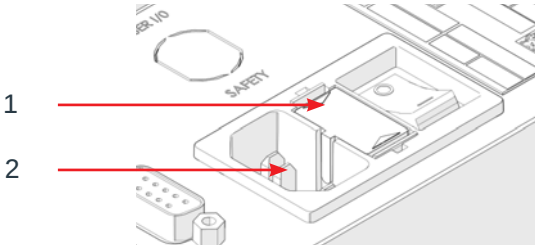
N. Preventive maintenance

	**Turn off the CCU before any intervention.**

1. Changing the fuse (fuse carrier)

A damaged fuse is the result of a problem on the machine or its environment. Changing the fuse does not solve this problem.

1. **Unplug the power supply cord.**
2. **Extract the fuse holder with 2 screwdrivers.**
3. **Insert the new fuse. See: Electrical characteristics**



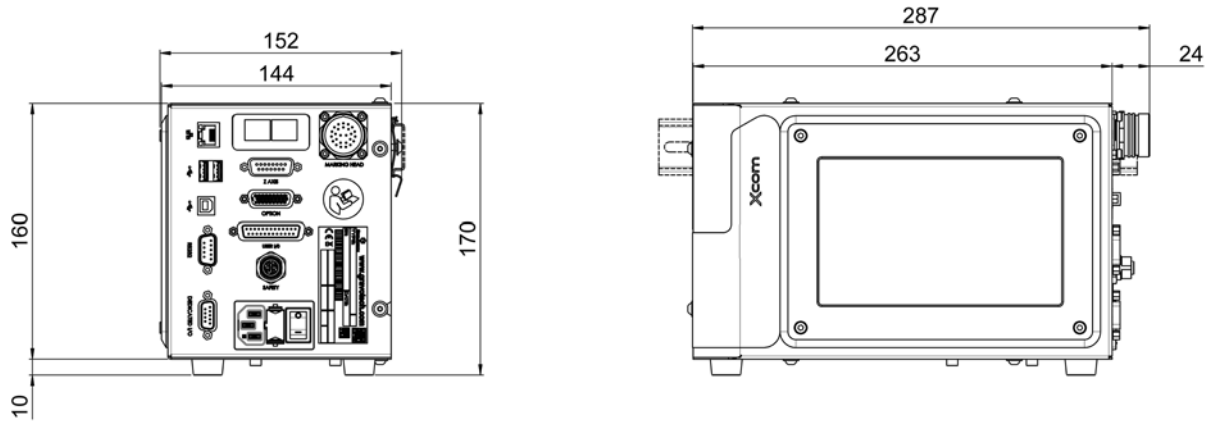
1. *Fuse carrier*
2. *Power connector*

O. Incidents and resolution of the problems

Description	Things to check	Action
The screen on the front panel of the CCU does not light up.	Is the power supply switched on? Is the cable properly connected? Is the On/Off switch in the On position? Check the condition of the fuse.	See: Power supply connection See: Changing the fuse
Lost in the program?	Refer to the manual.	Press the key:  (Return to main menu)

P. Dimensional drawings

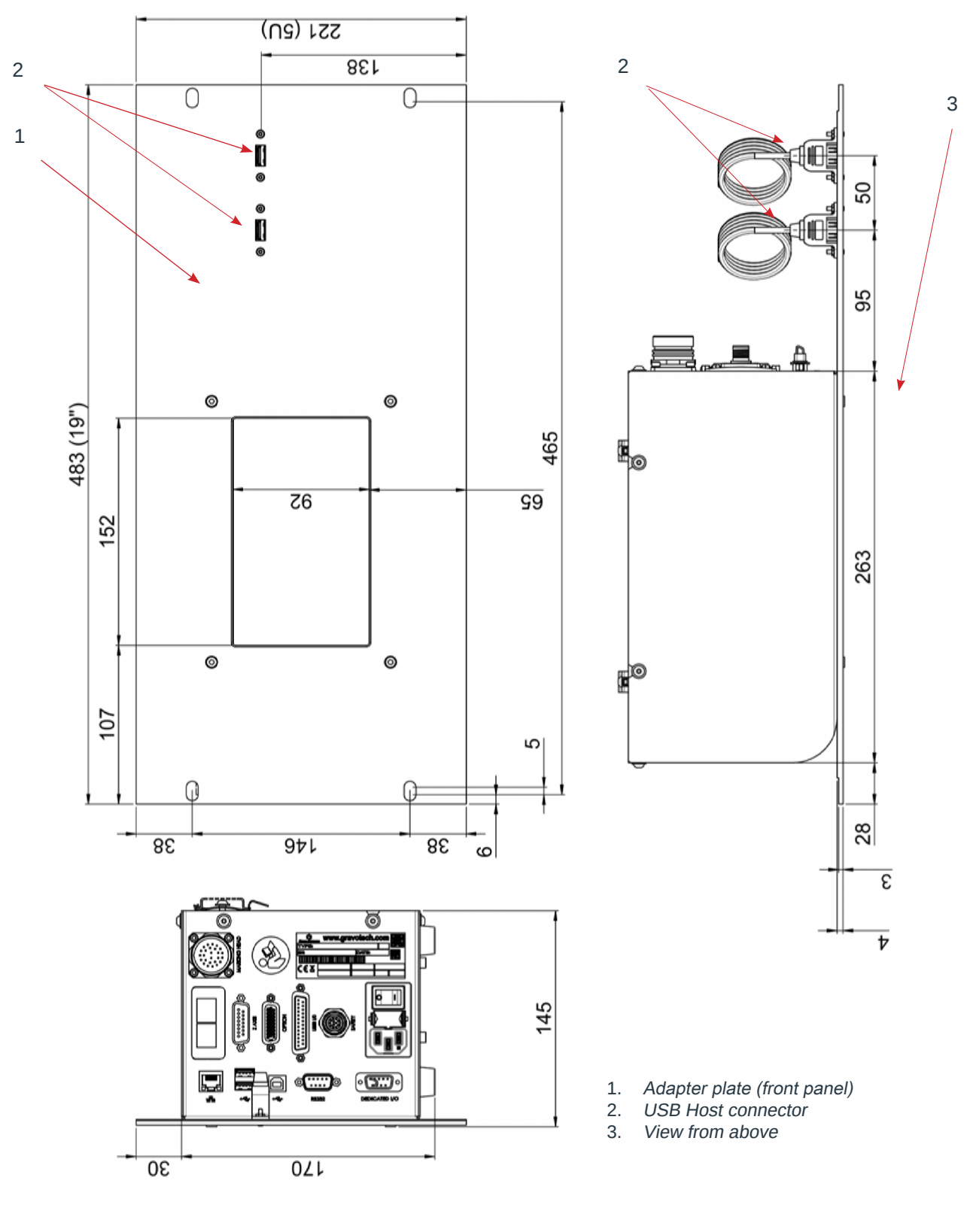
1. Dimensional drawing of the Control Unit in box configuration



Units: mm

Dimensional drawings

2. Dimensional drawing of the Control Unit in rack configuration



1. *Adapter plate (front panel)*
2. *USB Host connector*
3. *View from above*

Units: mm

Dimensional drawings

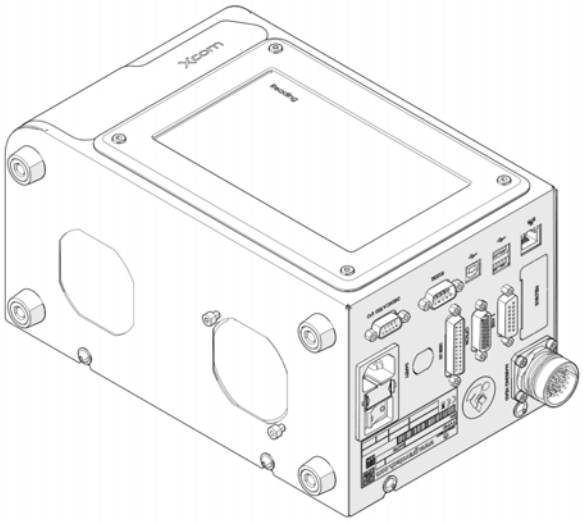
■ CCU assembly in rack configuration

To perform the assembly, imperatively use the mounting kit provided. See the manual delivered with this option.

Check that the assembly is secure.

1

2



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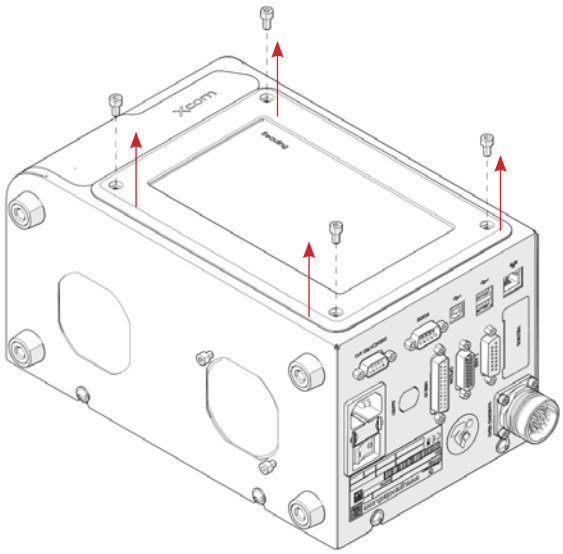

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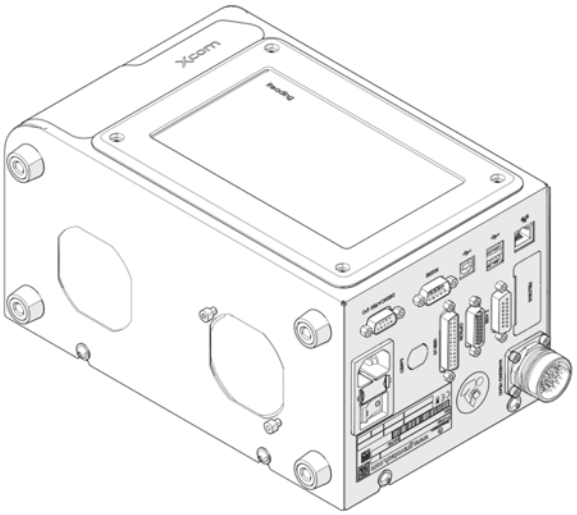
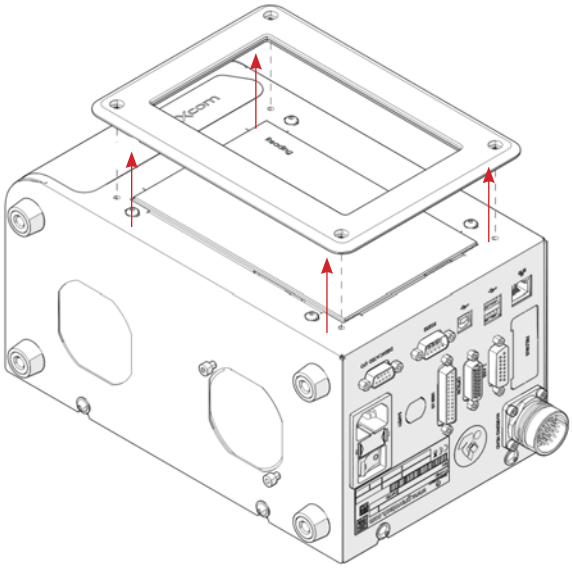


Dimensional drawings

5



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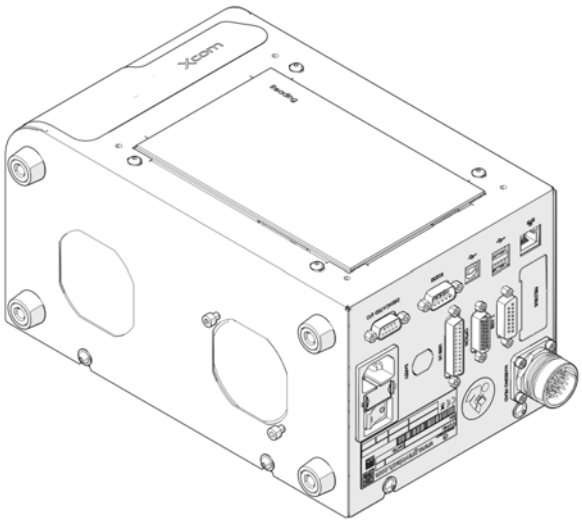

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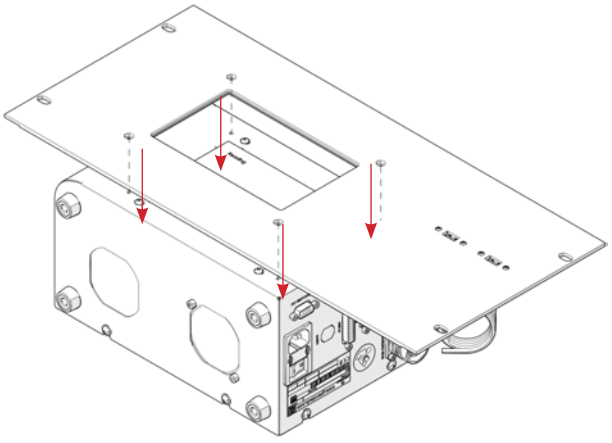

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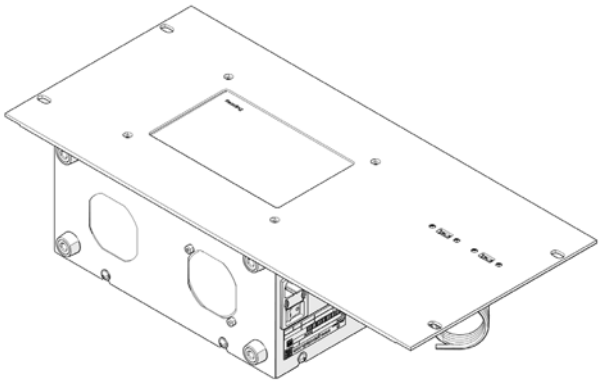

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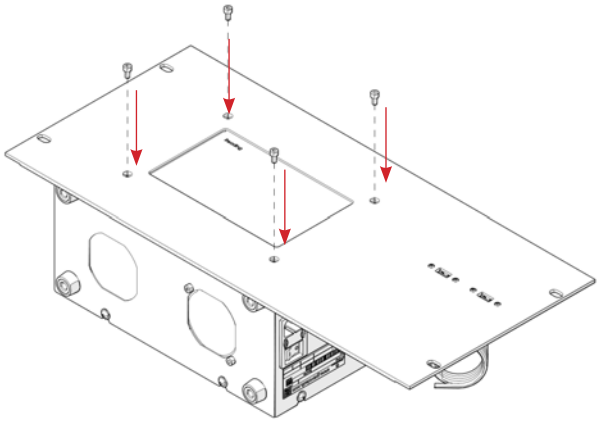

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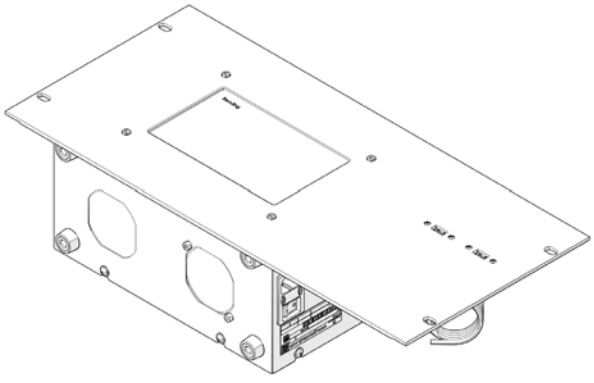

Dimensional drawings

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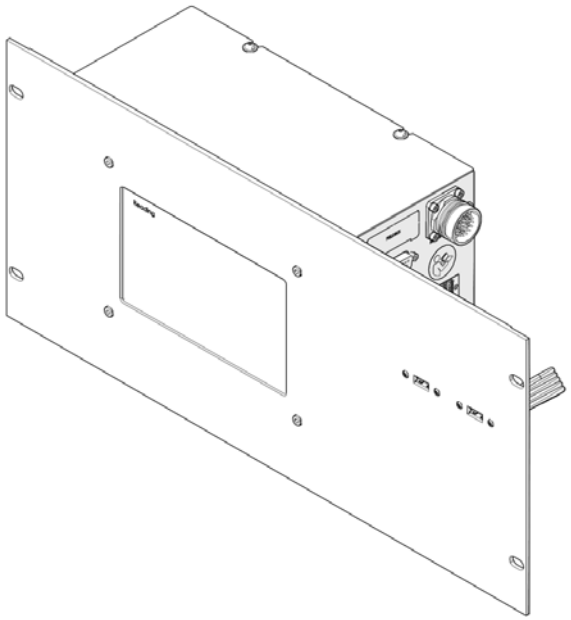

Q. Technical specifications

1. Physical characteristics

	Pneumatic version - Scribing version	Electromagnetic version
Dimensions (L x w x h): machine	287 mm (11.299 in) x 144 mm (5.669 in) x 170 mm (6.693 in)	
Net weight: machine	2.7 kg (5.952 lb)	3.1 kg (6.834 lb)

2. Environment

Operating temperature	5 °C (41 °F) - 45 °C (113 °F)
Storage temperature	0 °C (32 °F) - 50 °C (122 °F)
Humidity level	0 - 80%

3. Electrical characteristics

	Pneumatic version - Scribing version	Electromagnetic version
Nominal voltage	100-240 V AC	
Frequency	50-60 Hz	
Consumption	140 VA	260 VA
Fuse	T4AH250V	
Maximum current	4A	