

Technifor 

OPERATING AND MAINTENANCE MANUAL

XE320CP

DOT PEEN MARKING MACHINE
PORTABLE MACHINE - PNEUMATIC VERSION



M_XE320cp_EN_A - Last updated: 06/2017 - Translation of the French original document


GRAVOTECH

Type 3 

PROPEN 

Technifor 

GRAVOGRAPH 

Table of contents

A. Foreword	4
1. Appreciation	4
2. Information	4
B. Legal notices	5
C. Regulation observance	6
D. Introduction	7
1. Presentation	7
2. Identification of the marking equipment	7
3. Work station safety	7
■ Handling the machine	8
■ Warranty conditions and operating instructions	8
E. Unpacking	9
1. Package contents	9
F. Description of the machine	10
1. Operating instructions for the machine	10
G. Recommendations for installation	11
1. Physical installation	11
2. Electrical installation	11
H. Connections - Installation	13
1. Coordinate system	13
2. Compressed air supply	13
3. Connection of the marking head to the CCU	14
4. Mounting the stylus	14
5. Using the T05 program	14
I. Using the machine	15
1. Factors influencing marking depth	15
■ Selecting solenoid valves	15
■ Choosing the marking speed	15
J. Wearing parts	16
1. Wearing parts	16
■ Styli	16
■ Repair kits	16

K. Preventive maintenance	17
1. Every week	18
2. Every month	18
3. Every three months	18
4. Every year	19
5. Changing the stylus	19
6. Detaching the point of the stylus for sharpening (by Gravotech)	19
L. Dimensional drawings	20
1. Dimensional drawing of the machine	20
M. Noise emission of the machine	21
1. Test code	21
■ Measurement method	21
■ Test conditions	21
2. Noise emission information	22
N. Technical specifications	23
1. Physical characteristics	23
2. Marking characteristics	23
3. Noise emission of the machine (ISO 11201 standard).....	23
4. Electrical characteristics	23
5. Environment	24
6. Connections and cabling	24

A. Foreword

1. Appreciation

Thank you for choosing XE320cp - Technifor.

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.technifor.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: 10/15

The purpose of this document is to provide users (hereinafter the User(s)) with information and to ensure their safety. It has no contractual value and Gravotech group (hereinafter Gravotech) reserves the right, at any time and without notice, to make such changes or improvements as it deems fits, or to substitute any new equipment and/or material and/or part and/or image to its equipment, software and/or associated manuals or documentation (hereinafter the Product(s)).

This manual, including texts, images, photos, graphics, design, or any compilation, digital conversion or data contained in it, is subject to copyright. This manual shall not be reproduced, disseminated, transmitted, transcribed, translated or stored electronically, on any medium whatsoever regardless of its format without the express and written permission of Gravotech, to the exception of software backup copies as provided by law.

The intellectual property rights relating to the Products and to this manual, including - but not limited to - patents, trademarks, models, copyright, domain names and also the know-how, trading name or company name, are owned by Gravotech Marking S.A.S or any company of the Gravotech group. Under no circumstances does the transmission of this manual or the supply of Products or services constitute an assignment of or any express or tacit license for any intellectual property right owned by Gravotech.

To the extent permitted by law, Gravotech provides hereby no warranty (in particular no warranties of performance, non-infringement, merchantability or fitness for a particular purpose) relating to the supply of its Products, other than those conferred upon the User by Gravotech's general terms and conditions of sale or any contractual document agreed between Gravotech and the User. Nor does Gravotech guarantee the compatibility of its software with any software package not supplied by it, or any defect in assembly, adaptation, design, compatibility and operation with any or part of a combination created by the User.

Gravotech shall not be liable for any damages, that the User or its property, a third party or the Product itself may suffer, caused by the Product and arising from any inappropriate use or misuse of the Product, negligence, carelessness, inadequate supervision or maintenance, failure to observe the safety or usage instructions described herein or otherwise communicated to the User, the use of poor-quality or non-recommended lubricants, fluids and additives or where there is fault on the part of the User or a third party. As provided in this manual, the User shall furthermore (i) observe the normal conditions of use, (ii) not exceed the recommended maximum number of hours during which the equipment may be operated on and (iii) refrain from proceeding to any Product's repair or make it proceed by any unqualified third party, or without the appropriate personal protective equipment.

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.

Under no circumstances shall Gravotech be held liable for any indirect, incidental, special, consequential punitive or other similar damages, including any economic loss, loss of profit, loss of data or opportunity, whether or not foreseeable by or communicated to Gravotech, caused by this manual or the supply of Products or services concerned by the said manual.

To the widest extent permitted by law, Gravotech shall only be held liable for direct damage arising from personal injury caused by a fault proven in its Product (including this manual).

Gravotech® - Type3® - Propen™ - Technifor™ - Gravograph® is (are) a used, pending or registered trademark(s) of Gravotech group or one of its subsidiaries.

The products and names of third party companies which appear in this manual are used solely for the necessary purposes of reference, and in particular for issues of compatibility. All the trademarks mentioned in this manual remain the property of their respective owners. Windows® is (are) a used, pending or registered trademark(s) of Microsoft Corporation. Postscript® is (are) a used, pending or registered trademark(s) of Adobe Systems Incorporated.

C. Regulation observance

Last updated: 06/2017

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

Type of machine	Directives - Standards
<p>Dot peen marking: Machine XF500p, XF500m, Medrix Id, MR7000 P5000PN, P5000EM, Impact, Impact eZ</p> <p>Scribing marking: Machine M10 Jewel, M20 Pix, B-Engraver RingCube, TagCube, MedalCube</p> <p>Sharpening by grinding: Machine CG30, CG100</p> <p>Bevelling: Machine B4, B6</p> <p>Engraving by milling: Machine IM3, TXL M20, M20 Jewel, M20 ABC, M20 Pen, M20 Energy, M20 Beauty Cube M40, M40 Deep vice, M40 Gift, M40 ABC IS200, IS200 TX, IS400, IS400 Volume, IS900 IS6, 7, 8000 - XP - XP Milling</p> <p>Hot foil stamping: Machine M20 Artfoil, M40 Artfoil</p>	<ul style="list-style-type: none"> - Machinery: 2006/42/EC - Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU
<p>Dot peen marking: Transportable machinery - Partly completed machinery XF520p, XF530p, XF530m</p> <p>Dot peen marking: Partly completed machinery XF510p, XF510m, XE310p, XE320p</p> <p>Scribing marking: Partly completed machinery XF510r, SV510</p> <p>CCU, Rack, TouchPad UC500, UC500 SV, UC300, UC520, UC Laser Racks IS</p> <p>Laser fume extractor ES10, ES20, ES30, ES40, ES50 LE120HP, LE140HP, LE150HP, LE190HP, LNI900</p> <p>Accessory: Partly completed machinery APF Rotary, APF Laser PFD500 TAG3500 Cylinder attachment DMC, DP RD1, RD2, RDM</p>	<ul style="list-style-type: none"> - Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU
<p>Dot peen marking: Portable machine XM700 M7000</p>	<ul style="list-style-type: none"> - Machinery: 2006/42/EC - Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU - Cells and batteries: 2006/66/EC
<p>CO2, Yag 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</p> <p>CO2, Yag and fiber laser marking: Machine (galvo) Fibre100, Fibre200, Fibre300, Yag200 LW1, LW2 (LaserTop 2000) Laser Solution Hybrid-Series, Laser Solution Green-Series, Laser Solution CO2-Series</p>	<ul style="list-style-type: none"> - Machinery: 2006/42/EC - Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU <p>- Safety of laser products - Part 1: Equipment classification and requirements: EN 60825-1:2008</p> <p>- Safety of laser products - Part 4: Laser guards: EN 60825-4+A1+A2:2006</p>
<p>CO2, Yag and fiber laser marking: Partly completed machinery (galvo) – Class 4 TC500 TD412, TG400 Laser Solution Fiber-Series, TF410, TF420, TF430, TF450</p>	<ul style="list-style-type: none"> - Low voltage: 2014/35/EU - EMC: 2014/30/EU - RoHS 2: 2011/65/EU <p>- Safety of laser products - Part 1: Equipment classification and requirements: EN 60825-1:2008</p> <p>- Safety of laser products - Part 4: Laser guards: EN 60825-4+A1+A2:2006</p>

D. Introduction

1. Presentation

The XE320Cp is a numerically controlled dot peen marking machine.

XE320Cp is the ideal solution for marking all types of pieces of all shapes and dimensions, on flat or curved surfaces.

2. Identification of the marking equipment

The marking equipment is identified by:

- 1 identification plate on the marking head
- 1 identification plate on the Control Unit

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

3. Work station safety

To ensure security and productivity, read this manual before starting-up the equipment.

- This equipment is not designed for outdoor operation.
- This equipment is not designed for in-line installation on a production line.
- 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.
- Do not remove the power supply cover: risk of electric shock.
- 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.
- This marking equipment is designed to function at a room temperature between 5 °C (41 °F) to 45 °C (113 °F).
- If the room temperature is between 5 °C (41 °F) to 15 °C (59 °F), turn on the machine one hour before use and let it run for a few minutes in order to give time for the bearing lubricant to heat up.
- Position the Control Unit horizontally, in a dry, ventilated area, at least 20 cm (7.874 in) from the floor.
- Never unplug a cable while the Control Unit is turned on.
- Use a male cylindrical 1/4" gas air inlet.
- Do not use this marking equipment in an explosive environment.
- This marking equipment is not designed to operate in damp premises.
- During marking, do not place fingers or objects in the area reserved for stylus movement. Keep hands away from the marking area. Disregard for this recommendation may result in the operator being lightly pinched by the point of the stylus.

Introduction

- Depending on the application (tooling or heavy parts), it is recommended to wear safety shoes and work gloves.
- The air exhaust from the stylus can project metal dust or chips, if necessary wear safety glasses.
- At the time of disposal, wearing personal protective equipment (PPE) is recommended to dismantle the mechanical elements of the machine. Some elements (pinions) can separate when hot and can release toxic fumes.


■ Handling the machine

- The machine must be handled with extreme caution.
- 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 (Lubrication,...).
- The machine must be clean and protected from dust.

■ Warranty conditions and operating instructions

The XE320Cp 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.

This equipment is designed to mark material using Gravotech pneumatic styli only. Any other use, or the use of styli other than those provided by Gravotech is not recommended. Gravotech will not be held responsible for the results.

	<ul style="list-style-type: none">• The compressed air system must meet all standards. Use only clean, dry, non-lubricated air.• The air pressure must remain constant at 6 Bar (87.023 PSI).• Never lubricate any part of the stylus or carriage guide bars.• Clean the stylus/point unit regularly. The point of the stylus must be correctly sharpened.• Position the Control Unit horizontally, in a dry, ventilated area, at least 20 cm (7.874 in) from the floor.• The Control Unit must be powered by constant current. <p>When marking or doing test marking, the stylus must always hit a part. If it strikes only air, these are the risks:</p> <ul style="list-style-type: none">- Mechanical deterioration of moving parts- Void of the manufacturer's guarantee
---	--

Gravotech will not be held responsible for injuries resulting from disregard for the above operating instructions or other general safety rules applicable to the use of this equipment or resulting from misuse. Furthermore, disregard for the instructions will void the warranty.

For more information, please refer to the warranty details delivered with the machine.

E. Unpacking

Unpack the machine with 1 operators.

Keep the packing in case the machine has to be returned.

1. Package contents

Contents of the box (if ordering a pack):

- Machine: XE320Cp + integrated cord
- 1 test plate for the machine
- DVD containing the instruction manual
- 1 PN22 stylus
- Hose clamp(s) (plastic)
- Air filter
- Control Unit UC300
- Power cable
- External keyboard

Additional accessories if ordered:

- 1 (or several) styli
- Marking program + DVD containing the instruction manual

F. Description of the machine

1. Operating instructions for the machine

This machine works by moving the stylus along the X and Y axes of a grid.

The Control Unit uses its internal software to process the marking commands.
This combination of technologies allows for rapid marking of alphanumeric characters and logos.




1. Control Unit: UC300
2. Gun/CCU cord
3. XE320Cp marking gun
4. Stylus

G. Recommendations for installation

1. Physical installation

The marking area must be easily accessible.

2. Electrical installation

	<p>The marking equipment must be grounded in order to provide:</p> <ul style="list-style-type: none">• A safety feature for personnel• A set electrical potential which serves as a reference• A means of protection against radiated interferences <p>Grounding must be done according to the regulations in effect to ensure the safety of the personnel. The connection to the single phase power supply is made with a standard, 3 pin plug with grounding. It must be equipped with an adequately calibrated 30 mA differential cut-off and protection device.</p>
---	--

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).

Recommendations for installation

- 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 Technifor/Gravograph accessories.

H. Connections - Installation

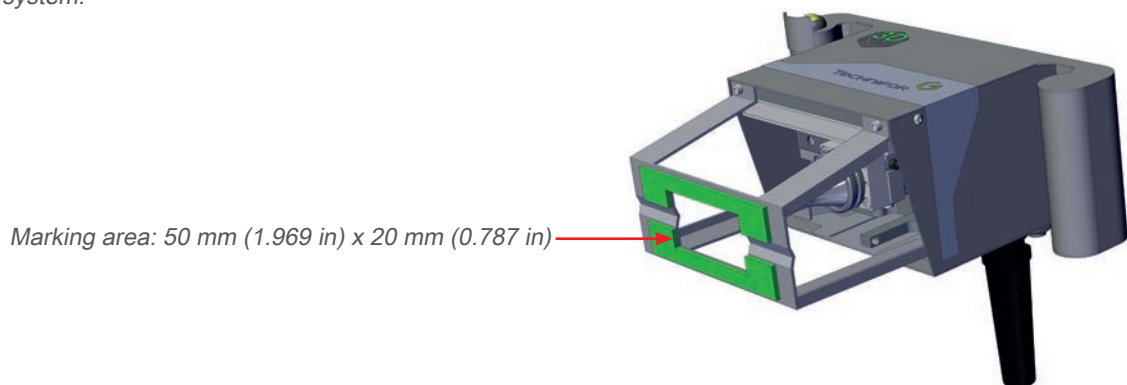
1. Coordinate system

The coordinate system used in our machines is shown in the following diagram.

The Z axis is the vertical position. This axis is used to manually adjust the height of the stylus for marking parts of different sizes. The Z axis position is set with the foot's height.

When a marking cycle is launched, the stylus always begins at the origin point and returns to the origin at the end of the cycle.

Coordinate system:



2. Compressed air supply

Connect the compressed air supply, located near the work station, to the air regulator filter inlet.

No tools are needed to connect and disconnect the air tubes. To make the connection, insert the \varnothing 6 mm (0.236 in) tube into the connector until it stops. To disconnect the tube from the air supply, press the clamping ring and pull the tube out of the connector.

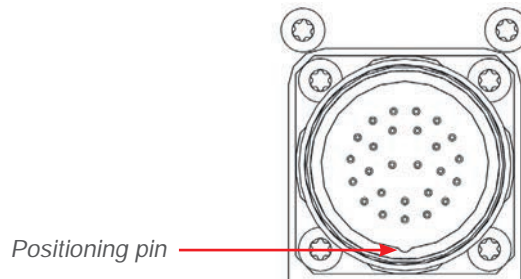
The ideal air pressure is 6 Bar (87.023 PSI). The regulator pressure must not be set higher than 6.5 Bar (94.275 PSI) or lower than 5.5 Bar (79.771 PSI).

For a character 3 mm (0.118 in) high, marked with a PN22 stylus using 2 solenoid valves, the air consumption is 0.4 - 0.7 NI (Normolitre).

Connections - Installation

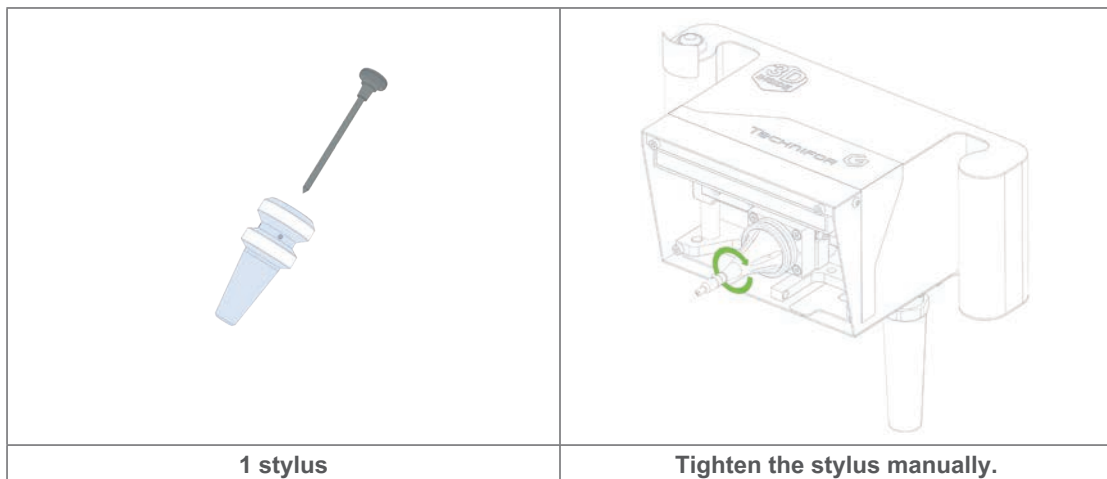
3. Connection of the marking head to the CCU

Connect the marking head to the CCU with the appropriate connecting cable.
Tighten the connector all the way without bending the pins.



Once all the elements of this marking equipment have been turned on, the screen should display the name of the machine connected to the UC. If this is not the case, contact the distributor immediately.

4. Mounting the stylus



5. Using the T05 program


Refer to the user manual for the T05 program.

I. Using the machine

1. Factors influencing marking depth

The principle factors are:

- Selecting solenoid valves
- Choosing the marking speed

	<p>To avoid creating stress on fragile parts, choose the following marking parameters:</p> <ul style="list-style-type: none"> • Stylus PN22 is the preferable choice. • Adjust the air pressure to the minimum. <p>For very fragile parts, validate marking with mechanical resistance tests.</p>
---	---

■ Selecting solenoid valves

The number of solenoid valves, selected from the marking program, will determine the width of the mark. Choose a marking force according to the amount of compressed air required. The table below shows the number of solenoid valves activated depending on the marking force, and the appropriate stylus to use with each force.

Marking force	Solenoid valve(s) 1	Solenoid valve(s) 2	Solenoid valve(s) 3	Stylus to be used
0%	-	-	-	-
33%	Activated	-	-	PN22
66%	Activated	Activated	-	PN22
100%	Activated	Activated	Activated	PN22

Note

Program T05: marking force 

■ Choosing the marking speed

There are 2 speeds:

- The "marking speed", where the stylus moves while vibrating
- The "movement speed", where the stylus moves without vibrating

The choice of speeds influences the marking quality.

Marking speed	Result	Speed	Marking cycle
0% to 33%	Very high quality	Slow	Long
33% to 66%	High quality	Fast	Standard
66% to 100%	Average quality	Very fast	Short

J. Wearing parts

Please give the item codes with your order to speed processing.

1. Wearing parts

A sharpening service is available for all stylus points.

■ Styli

Reference (JDE)	Description
52858	Pneumatic stylus S52 60° carbide point radius 0.2 mm (0.008 in)
71043	Pneumatic stylus S52 120° carbide point radius 0.2 mm (0.008 in)
73104	Pneumatic stylus S52 90° carbide point radius 0.2 mm (0.008 in)
50723	Pneumatic stylus PN12 60° carbide point radius 0.2 mm (0.008 in)
49058	Pneumatic stylus PN22 60° carbide point radius 0.2 mm (0.008 in)
75238	Pneumatic stylus PN22 120° carbide point radius 0.2 mm (0.008 in)
75497	Pneumatic stylus PN12 120° carbide point radius 0.2 mm (0.008 in)
52662	Sharpening angle + radius

■ Repair kits

Reference (JDE)	Description
55124	Repair kit (o-ring /spring) for PN12 stylus
52748	Repair kit (o-ring /spring) for PN22 stylus
52883	Repair kit (o-ring /spring) for S52 stylus

K. Preventive maintenance


Maintenance consists of regular monitoring of marking quality. Intensive use of the equipment can impact the guiding systems of the carriage or the stylus point, and may result in distortion of the characters.

Contact your distributor to schedule an appointment for servicing. This "tune-up" does not take a long time.

The maintenance operations listed here are intended as a guideline, and should be implemented upon reception of the material. In a highly polluted environment, these operations may need to be performed more frequently.

Check the compressed air system regularly. Based on the level of contamination, establish a schedule for cleaning or replacement.

Never lubricate any part of the stylus or carriage guide bars.

	<p>Unplug the power supply plug before beginning any cleaning or maintenance operation. Cut the compressed air intake.</p> <p>Do not apply oil or grease to any element of the stylus or marking head.</p> <p>Never use pliers to tighten the stylus.</p> <p>Purge the filter of the pressure regulator regularly.</p> <p>Operating pressure: 6 Bar (87.023 PSI) nominal, 6.5 Bar (94.275 PSI) maximum.</p> <p>The air must be clean and dry.</p>
--	---

This maintenance list was established based on a marking frequency of:

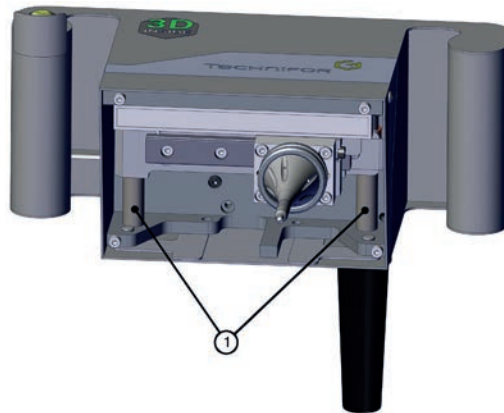
- 520 000 cycles per year (7 800 000 characters per year)
- 15 characters 3 mm (0.118 in) high per cycle
- 8 continuous working hours on steel strength 50 DaN/mm² (72 518.869 lb/in²)

During servicing of the marking head, Gravotech can provide identical rental equipment so that production is not interrupted.

Preventive maintenance

1. Every week

XE320Cp - Top view:



1. *Y carriage guide bars*

Clean the guide bars inside the marking head with a dry cloth (no solvent, oil, or grease).

Check the condition of the stylus, then clean it thoroughly (see: Detaching the point of the stylus for sharpening (by Gravotech)).

Dismantle the stylus. Clean the point with a dry cloth.

Empty the air filter in order to eliminate dust or liquid which may be present in the system. Clean, dry, non-lubricated air will reduce the build-up of grease in the solenoid valves. This will ensure optimal functioning and reliability of the stylus.

2. Every month

Send the point of the stylus for sharpening or for replacement.

The larger the radius, the less small characters will be legible, especially on soft materials.

3. Every three months

Have the stylus serviced by Gravotech.

This operation includes:

- verification of the stylus body
- replacing the o-ring
- replacing the spring
- sharpening the point

Preventive maintenance

4. Every year

Have the marking head serviced by Gravotech.

This operation includes:

- complete dismantling of the machine
- cleaning of the mechanical elements
- replacement of the bearings and guide bars
- replacement of the solenoid valves
- verification of the condition of the motors and the belt
- reassembly and adjustment of mechanical elements
- debugging of the head in an enclosure
- marking tests

5. Changing the stylus

Verify that there are no impurities on the threading of the new stylus to be installed to avoid jamming the unit.

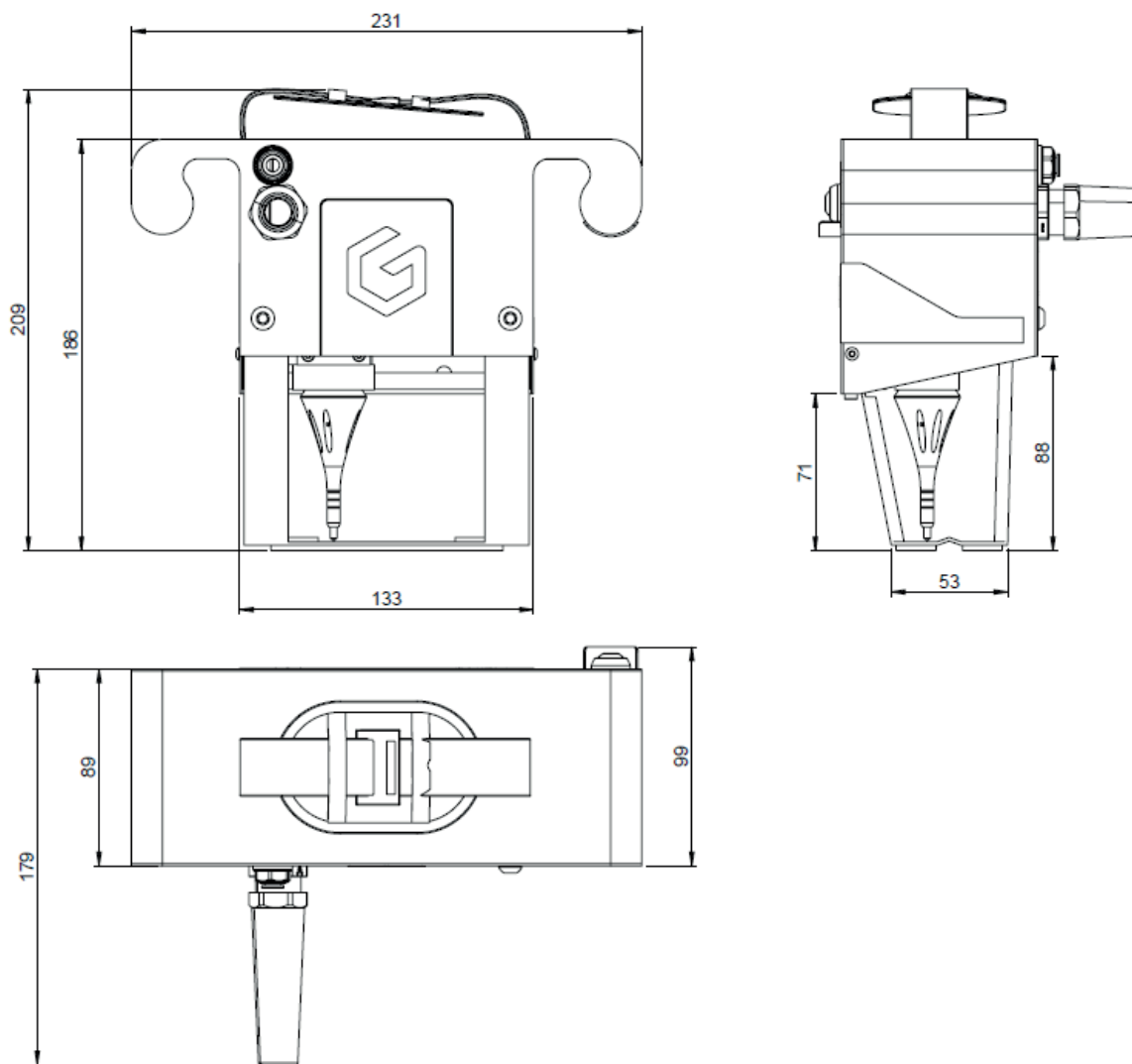
To tighten the stylus, hold it between your thumb and index finger. Do not use any tools.

6. Detaching the point of the stylus for sharpening (by Gravotech)

To remove the point of the stylus, moisten the seal very slightly with a drop of oil, then push up on the stylus from the pointed end.

L. Dimensional drawings

1. Dimensional drawing of the machine



Units: mm

M. Noise emission of the machine

1. Test code

■ Measurement method

The measurements were taken according to the regulations of standard ISO 12001:1996.

Measurement equipment used:

- 01dB - Stell integrated sonometer, SIP 95 S, # 20394
- Cal 01 calibrator, # 40141

Material used for marking:

- Type XE320Cp machine mounted on a column stand
- One electronic command unit
- An interface computer (used by the operator)

The unit is placed on a wood workbench in a workshop where the background noise level is negligible compared with the noise emitted by the machine. The work station, situated more than 2 m (6.562 ft) from any separator, is designed for a standing operator.

The marking is carried out using a S52 stylus on a steel plate with dimensions of 110 mm (4.331 in) x 100 mm (3.937 in) x 1 mm (0.039 in) clamped to a base support. A new plate is used for each test.

Definition of the microphone position

The microphone is positioned 1 m (3.281 ft) in front of the machine and 1.3 m (4.265 ft) from the floor.

■ Test conditions

- Marking speed: 100%
- Movement speed: 100%
- Compressed air system pressure: 6 Bar (87.023 PSI)
- Marking quality: 100%
- Stroke force: 50%
- Marking of 2 line(s) of 10 character(s) 5 mm (0.197 in) high
- Steel plate with dimensions 110 mm (4.331 in) x 100 mm (3.937 in) x 1 mm (0.039 in)

Noise emission of the machine

2. Noise emission information

The values given below represent the noise emitted by the machine during marking. When the machine is in use, the values mentioned are independent from the total noise level to which the operator is exposed, since the actual noise level will vary depending on the operator's environment.

- Average level: $L_{Aeq} = 83.2$ dB(A)

(L_{Aeq} = "equivalent" average sound level measured using the A-weighting)

- Peak level: $L_{pc} < 107.5$ dB(C)

(L_{pc} = peak acoustic pressure level)



When marking resonant parts (metallic, hollow, thin), wear hearing protection for sound levels $L_{Aeq} > 85$ dB(A) or $L_{pc} > 137$ dB(C).

N. Technical specifications

1. Physical characteristics

Dimensions (L x w x h): machine	133 mm (5.236 in) x 99 mm (3.898 in) x 186 mm (7.323 in)
Net weight: machine	Maximum: 2.7 kg (5.952 lb)
Dimensions (L x w x h): machine + packing	231 mm (9.094 in) x 171 mm (6.732 in)
Marking area	50 mm (1.969 in) x 20 mm (0.787 in)

2. Marking characteristics

Pneumatic stylus	PN22, PN21, Stylus 3D, S52 (if: Supporting leg =73 mm (2.874 in))
Fonts available	Continuous action (standard) Dot by dot (optional) Size: from 0.5 mm (0.020 in) to 44.9 mm (1.768 in) with increments of 0.1 mm (5/1000 in) Characters: those included in the basic multilingual diagram of the Unicode standard (ISO 10646)
Type of marking	Dates, counters, batch numbers, shift codes, logos...

3. Noise emission of the machine (ISO 11201 standard)

L_{Aeq}	83.2 dB (A)
L_{pc}	107.5 dB (C)

4. Electrical characteristics

Nominal voltage	110 - 230 V AC
Absorbed current	Maximum: 1 A
Frequency	50/60 HZ
Power	120 VA

Technical specifications

5. Environment

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

6. Connections and cabling

Compressed air supply	Operating pressure 6 Bar (87.023 PSI) nominal, 6.5 Bar (94.275 PSI) maximum Pneumatic cylindrical female connection 1/4" gas Compressed air consumption: 0.4 to 0.7 NI/character 3 mm (0.118 in) high
------------------------------	---