

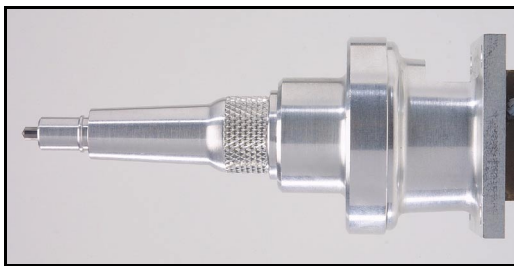
TECHNIFOR MANUAL

Code : DCD01/3032-MTEC4307/0601E0

www.technifor.com

ELECTROMAGNETIC STYLUS

DIFFERENT MODELS



MICRO-PERCUSSION DEPARTMENT



A MARK WHICH DEFIES TIME

TECHNIFOR - IDENTIFICATION AND TRACEABILITY SYSTEMS

Technifor reserves all rights on improvement of its products.

This document is not contractual.

Updates

The updating index A0 corresponds to the first edition of this manual.

The alphabetical character (A) represents the major index while the numeric character (0) represents the minor index.

The minor index will change after an isolated update (modification of only some pages in the manual).

Only the modified pages will bear the new updated index.

The major index will change after a complete updating of the manual, giving forth a new edition.

The minor index will then return to zero.

The chart below will provide a record of the various updates since the first edition.

It is recommended that this procedure be taken into account and and that you insert the modified pages in your manual as they are sent.

REVISION DATE	UPDATED INDEX	MODIFIED PAGES
June 2002	0206A0	First edition
July 2002	0207A1	Using with a UC201
April 2003	0304B0	Addition: using with a CN312Cm machine
August 2003	0308C0	Addition : M1CZ stylus - for CN312Cm machine with motorized Z axis option - see pages 2.21 - 2.24 - 2.25 - 2.28
February 2005	0502DO	Addition: stylus M0C
January 2006	0601E0	Change in certifying organization

1

**STYLUS M1C
DIFFERENT MODELS**

STYLUS M1C DIFFERENT MODELS

1.1 . Using with the CN211Sm - CN211Dm

1.1.1. Introduction

The MIC is an electro-magnetic stylus for the CN211Sm and CN211Dm machines that can mark with a continuous action. The marking obtained is very legible. It can also mark dot-by dot (for the 5 x 7 standard).

This stylus offers a very wide range of use with respect to:

- the impact force,
- the vibration frequency of the point (between 10 and 120 Hz),
- the adjustment height in relation to the part.

Three versions are available:

- MIC : stylus without cooling,
- MICT : stylus with a cooling system by turbine,
- MICA : stylus with a compressed air cooling system.

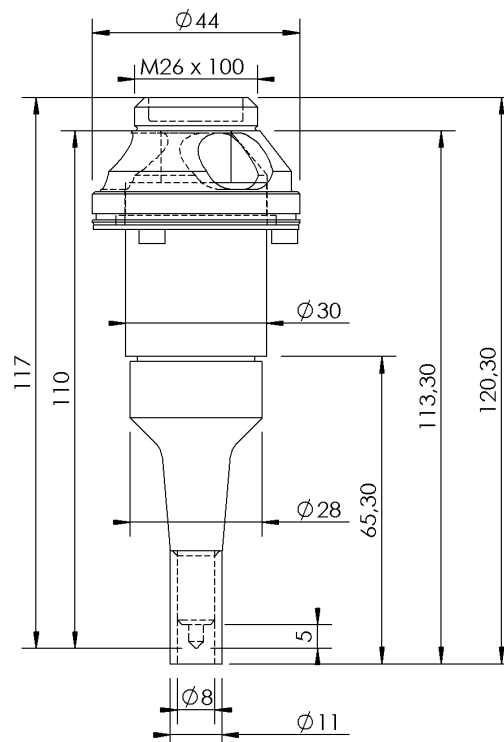
REMARKS

1 - The necessity of cooling will depend on the application (see paragraph 3),

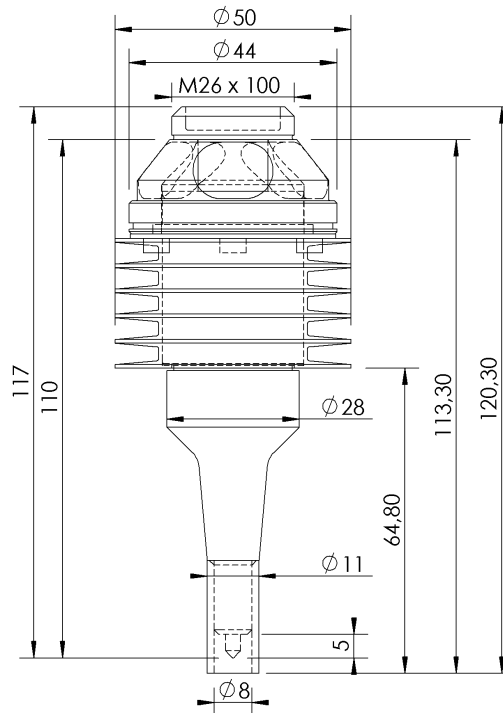
2 - A KIT exists for the transformation of the:

- MIC to MICT,
- MIC to MICA.

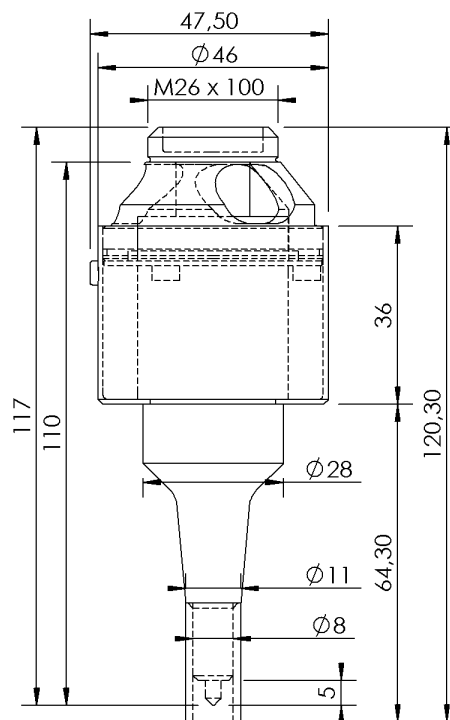
1.1.2. Stylus MIC



1.1.3. Stylus MICT



1.1.4. Stylus MICA



1.1.5. Choice of the stylus

The choice of the stylus will depend on the marking parameters to be used for the application (frequency, impact force, rate of use), as well as the environment in which it will be used (room temperature).

The chart below indicates the possible stylus choices when the maximum impact force is used.

Stylus	Rate of use < 16 %	Rate of use > 16 % with room temperature < 30°C	Rate of use > 16 % with 30°C < room temperature < 45°C
M1C	++	-	-
M1CT	+	+	-
M1CA	+	++	++

Legend :

- : overheating risk (machine interruption),
- + : possible to use,
- ++ : recommended use.

It is possible to increase the rate of use for the M1C stylus if the maximum impact force is not used.

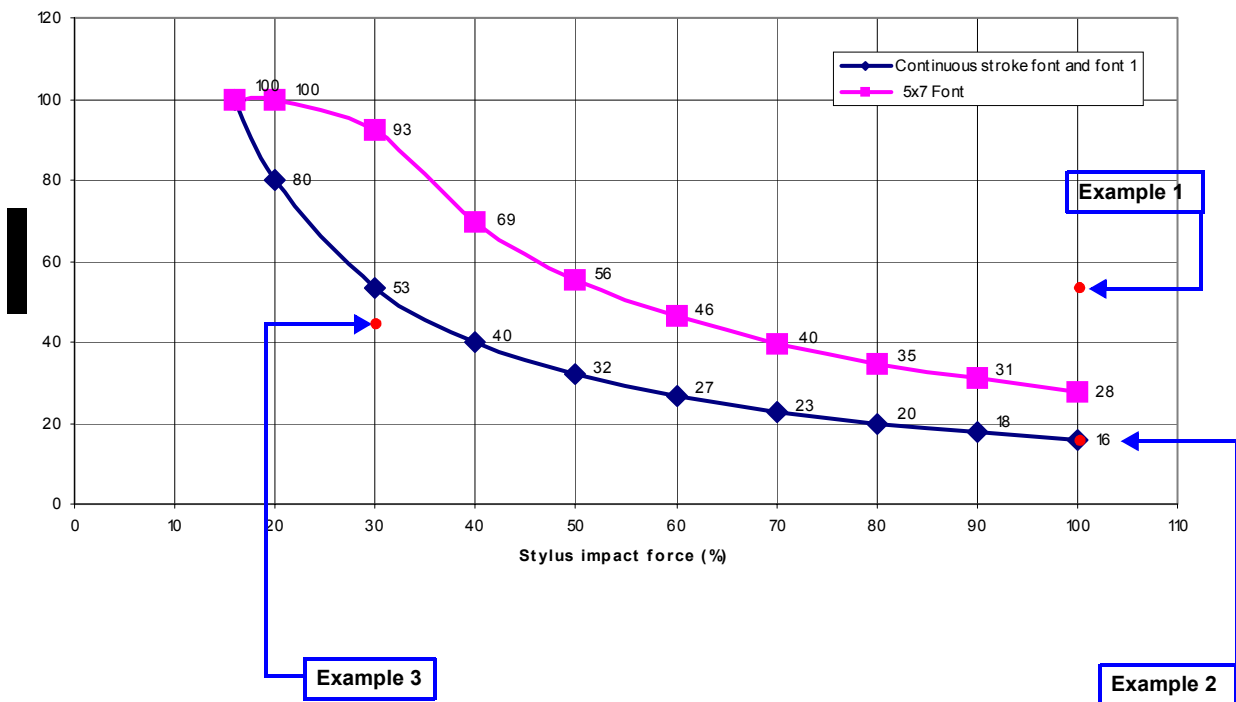
Calculating the rate of use

T_m : cycle marking time.

T : time interval between 2 marking starts

$$\text{Rate} = \frac{T_m}{T} \times 100$$

REPRESENTATION OF THE RATE OF USE IN RELATION TO THE IMPACT FORCE



⇒ The examples 1, 2 and 3 are explained on the following page.

<p><u>Example 1</u></p> <ul style="list-style-type: none"> • Rate : 200 parts per hour • Operating force : 100 % (maximum) • Font number: 14 • Cycle time: 10 seconds 	$\frac{10}{\left(\frac{3600}{200}\right)} \times 100 = 56 \%$	<p>Stylus to be used :</p> <p>M1CT or M1CA</p> <p>since > 16 % (see graph on previous page)</p>
--	---	---

<p><u>Example 2</u></p> <ul style="list-style-type: none"> • Rate : 180 parts per hour • Operating force : 100 % (maximum) • Font number : 14 • Cycle time : 3 seconds 	$\frac{3}{\left(\frac{3600}{180}\right)} \times 100 = 15 \%$	<p>Stylus to be used :</p> <p>M1C</p> <p>since < 16 % (see graph on previous page)</p>
---	--	--

<p><u>Example 3</u></p> <ul style="list-style-type: none"> • Rate : 250 parts per hour • Operating force : 30 % • Font number : 14 • Cycle time : 6 seconds 	$\frac{6}{\left(\frac{3600}{250}\right)} \times 100 = 42 \%$	<p>Stylus to be used :</p> <p>M1C</p> <p>since > 53 % (see graph on previous page)</p>
--	--	--

1.1.6. Temperature protection

All styli are equipped with a temperature protection system. This system will automatically interrupt the machine if the maximum authorized temperature has been exceeded (stylus temperature >85°C). The interruption will occur at the end of the marking underway.

This security is necessary in the case of an incorrect estimation of the rate of use for the stylus, or a failure in the cooling system. After an interruption of this type, the machine will not restart until the stylus cools.

In the case of the M1CT stylus, the temperature sensor also starts up the turbine. For this reason the turbine will only function if necessary.

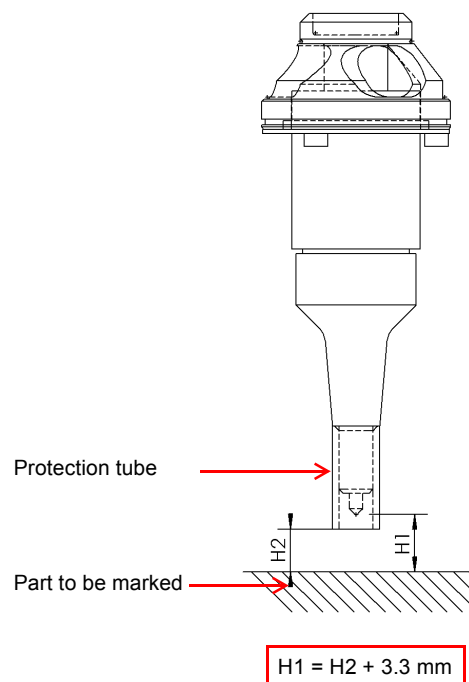
1.1.7. Using the Stylus

I - Adjustment

The adjustment of the height (H1) of the point of the stylus with relation to the part to be marked will depend on the force and frequency of the vibration as well as the presence or absence of the polycarbonate protection tube.

REMARK

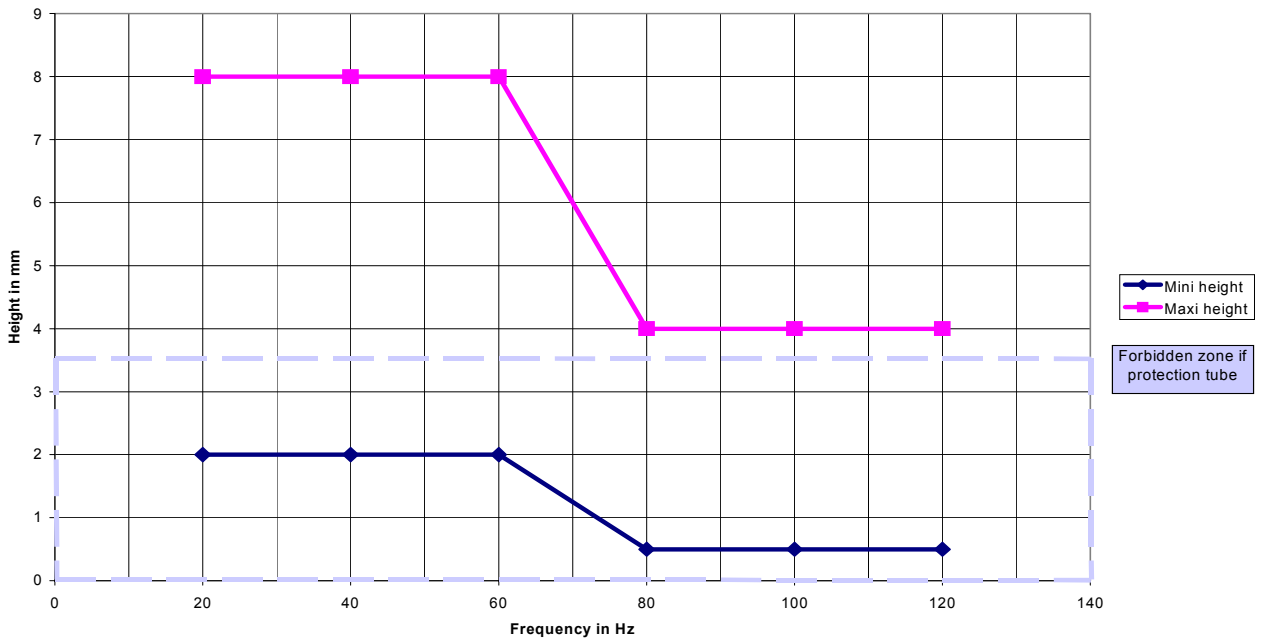
The diagram shown here gives the maximum adjustment amplitude for the stylus **WITHOUT** the protection tube. This tube may be removed using pliers in a case where the maximum amplitude is necessary.



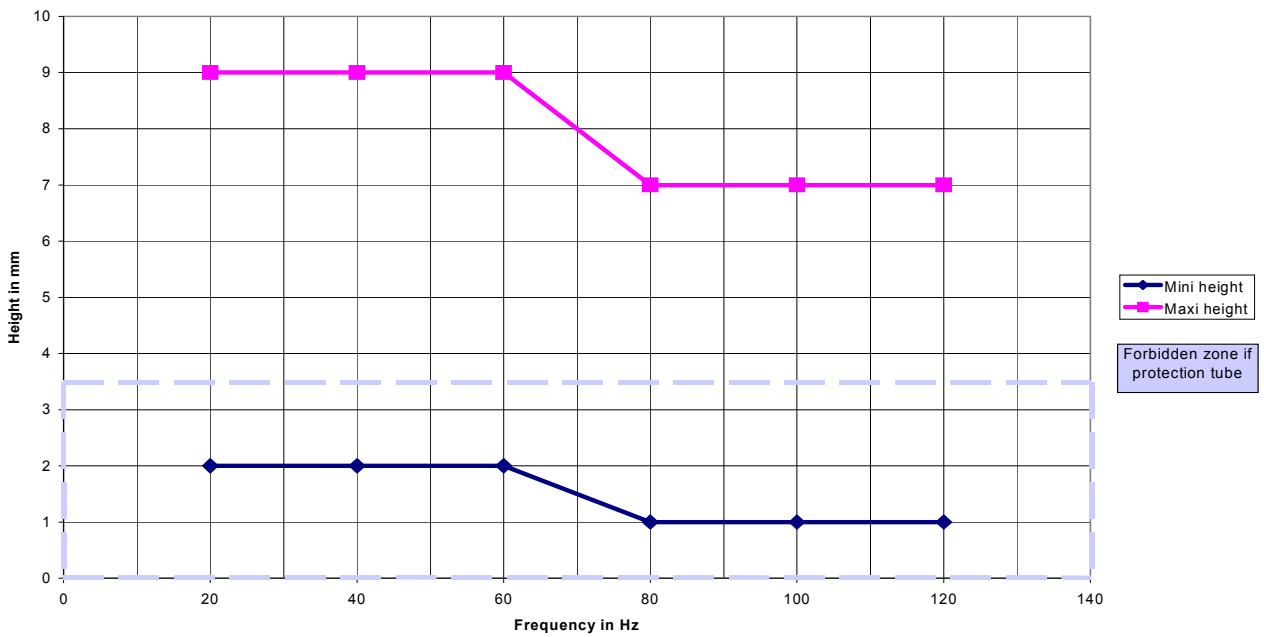
When carrying out this modification, make sure that all safety measures have been taken (wire netting, protection, photodetection cell, etc...) so that the operator does not risk putting a finger or hand under the stylus during the marking cycle.

TECHNIFOR cannot be held responsible if this warning is not taken into account. This operation will be done under your entire responsibility, therefore not incurring that of TECHNIFOR.

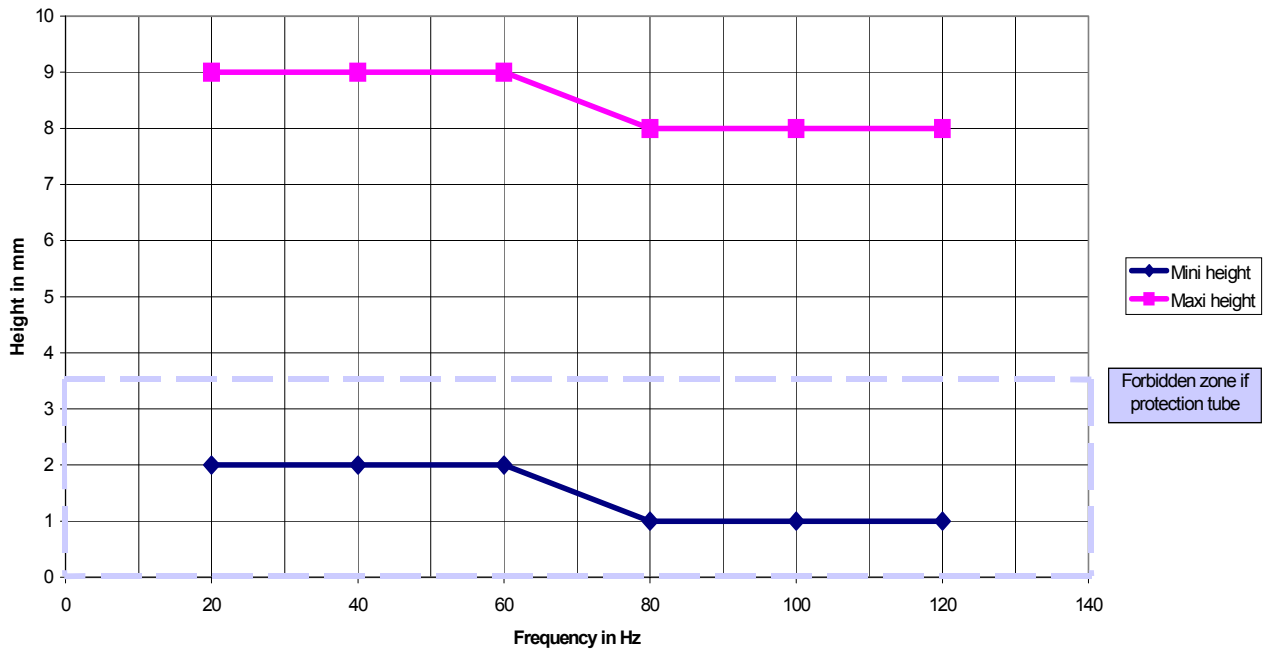
Adjustment height (H1) in relation to the frequency for a 50% force



Adjustment height (H1) in relation to the frequency for a 75 % force

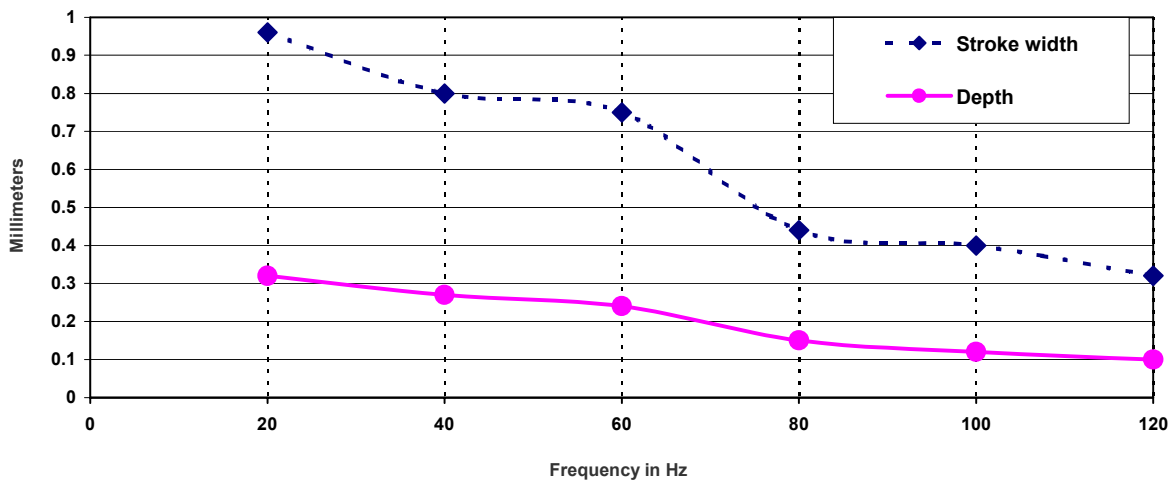


Adjustment height (H1) in relation to the frequency for a 100 % force



II - Marking depth

Modification of the marking depth and width in relation to frequency with a M1C stylus
point at 90° - radius : 0.2 mm - steel plate 110 HB - force : 100% (maximum) - marking speed : 10mm/s



1.1.8. Choice of marking parameters

I - Continuous action (font 14)

The following 4 parameters may be modified :

- Frequency (10 to 120 Hz)
- Force (0 to 100%)
- Marking speed (Vm)
- Movement speed (Vd)

The T201W marking software offers default adjustments for the marking of 3 types of standard material that will depend on the desired marking result : quality, intermediary, cycle time.

The chart below will give you the parameters to be entered in the T201W.

These parameters are determined for a 4 mm. adjustment height of the stylus, for marking steel at 110 HB, aluminum and plastic.

The adjustments given in this chart do not necessarily correspond exactly to the application (curved part, other material). The T201W software offers a manual adjustment mode for specific applications so as to better adjust the values of the various parameters.

		Quality				Intermediary				Cycle			
S T E E L	Size of characters	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd
	0,5 < T <= 2,5	120	66	4	70	120	66	6	90	120	66	8	110
	2,5 < T <= 4	100	77	8	70	100	77	12	90	100	70	15	110
	4 < T <= 6,5	90	80	10	70	90	80	18	90	90	80	25	110
	6,5 < T <= 8	70	93	10	70	60	86	25	90	60	86	40	110
	T > 8	20	77	10	70	40	97	25	90	40	97	40	100

		Quality				Intermediary				Cycle			
A L U M I N I U M	Size of characters	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd
	0,5 < T <= 2,5	120	53	4	70	120	53	6	90	120	53	8	110
	2,5 < T <= 4	100	77	8	70	100	70	12	90	100	77	15	110
	4 < T <= 6,5	90	80	10	70	90	80	18	90	90	80	25	110
	6,5 < T <= 8	70	85	10	70	60	86	25	90	60	86	40	110
	T > 8	20	55	10	70	40	88	25	90	40	88	40	100

		Quality				Intermediary				Cycle			
P L A S T I C	Size of characters	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd	Frequency	Force	Vm	Vd
	0,5 < T <= 2,5	120	53	4	70	120	53	6	90	120	53	8	110
	2,5 < T <= 4	100	55	8	70	100	55	12	90	100	55	15	110
	4 < T <= 6,5	90	55	10	70	90	55	18	90	90	55	25	110
	6,5 < T <= 8	70	50	10	70	60	53	25	90	60	53	40	110
	T > 8	20	44	10	70	40	57	25	90	40	57	40	100

II - Dot by dot font (font 1 or 3)

The following 4 parameters may be modified :

- Tpup (temporization pen up)
- Force
- Marking speed (Vm)
- Movement speed (Vd)

The T201W marking software offers default adjustments for the marking of 3 types of standard material that will depend on the desired marking result : quality, intermediary, cycle time.

The chart below will give you the parameters to be entered in the T201W.

These parameters are determined for a 4 mm. adjustment height of the stylus, for marking steel at 110 HB, aluminum and PVC.

The adjustments given in this chart do not necessarily correspond exactly to the application (curved part, other material). The T201W software offers a manual adjustment mode for specific applications so as to better adjust the values of the various parameters.

Quality	Steel adjustment					Aluminium and plastic adjustment				
	Size of characters	Force (%)	Vm	Vd	Tpup	Size of characters	Force (%)	Vm	Vd	Tpup
	1	59	10	70	70	1	46	10	70	70
	2	55	10	70	70	2	44	10	70	70
	3	57	10	70	70	3	48	10	70	70
	4	60	10	70	20	4	53	10	70	20
	5	55	10	70	10	5	51	10	70	10
	6 and more	37	10	70	10	6 and more	35	10	70	10

Intermediary	Steel adjustment					Aluminium and plastic adjustment				
	Size of characters	Force (%)	Vm	Vd	Tpup	Size of characters	Force (%)	Vm	Vd	Tpup
	1	59	10	90	30	1	46	10	90	30
	2	55	10	90	30	2	44	10	90	30
	3	57	10	90	30	3	48	10	90	30
	4	60	20	90	20	4	53	20	90	20
	5	55	20	90	10	5	51	20	90	10
	6 and more	37	20	90	10	6 and more	35	20	90	10

Cycle	Steel adjustment					Aluminium and plastic adjustment				
	Size of characters	Force (%)	Vm	Vd	Tpup	Size of characters	Force (%)	Vm	Vd	Tpup
	1	59	20	110	20	1	46	20	110	20
	2	55	20	110	20	2	44	20	110	20
	3	57	20	110	20	3	48	20	110	20
	4	60	30	110	10	4	53	30	110	10
	5	55	30	110	10	5	51	30	110	10
	6 and more	37	30	110	10	6 and more	35	30	110	10

1.1.9. Chart for selection of parameters

Desired change	Increase the diameter of the impact	Reduce the diameter of the impact	Increase the density of the dots	Reduce the density of the dots
Restriction required				
Maintain the same density of dots	1. Increase the force 2. Reduce the marking-frequency and speed	1. Reduce the force 2. Increase the marking-frequency and speed		
Maintain the same marking time	1. Increase the force 2. Increase the movement speed, reduce the marking frequency and speed	1. Reduce the force 2. Reduce the movement speed, increase the marking frequency and speed	1. Increase the frequency	1. Reduce the frequency
Maintain the same impact diameter			1. Reduce the marking speed	1. Increase the marking speed

1.1.10. Maintenance**I - Every day**

- Verify the quality of the marking.
- Verify that the stylus is correctly screwed to the carriage.

II - Every week

- Verify the condition of the stylus and proceed to completely clean with alcohol (guide-washer-spring-point).
- Dry the guide with an air gun.
- Verify the condition of the point and proceed to clean it.

III - Every three months

Carry out a complete tune-up of the stylus if necessary.

This operation will be done on our premises and will entail:

- replacing the guide of the point if necessary.
- sharpening the point.
- replacing the spring and the stop washer.

This list has been made for a marking frequency of:

- . 520 000 cycles per year (7 800 000 characters per year),
- . 15 characters 3 mm high per cycle (priority quality marking mode),
- . 8 hours of continuous work on 50 daN/mm² steel.

1.2 . Using With A Cn312Cm - CN312Sm - CN312Dm

1.2.1. Introduction

The MIC is a very powerful electro-magnetic stylus for the CN312Cm machine.

It will permit you to mark using the fonts:

- high legibility, dot by dot,
- 5x7 dot by dot matrix,
- DATAMATRIX code.

Four versions are available.

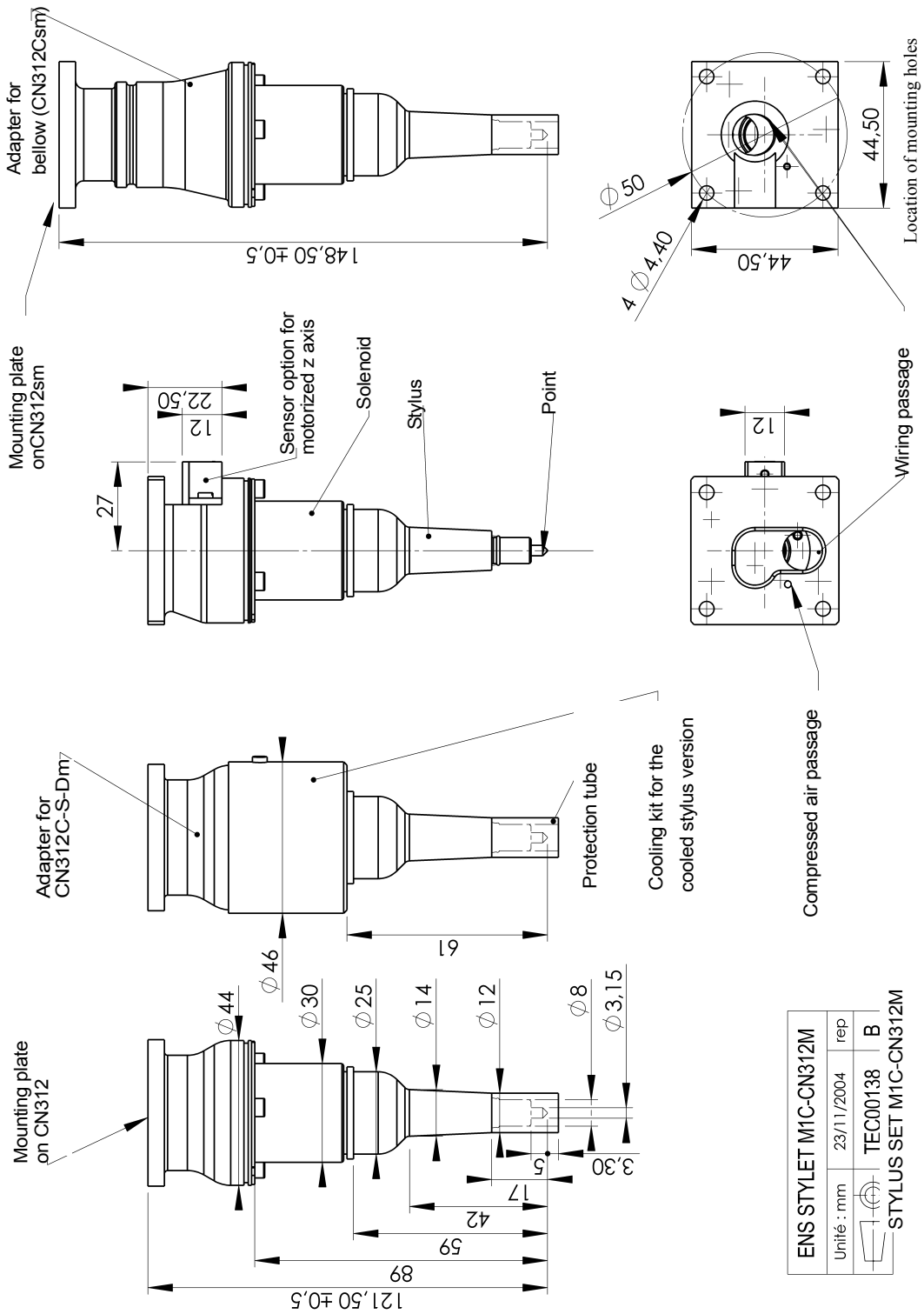
For standard machines

- MIC : stylus without cooling,
- M1CA : stylus using a compressed air cooling system.

For machines with the motorized Z axis option

- M1CZ : stylus with sensor, without cooling
- M1CAZ : stylus with sensor, using a compressed air cooling system.

1.2.2. Stylus M1C - different models



1.2.3. Choice of the stylus

The choice of the stylus will depend on the marking parameters to be used for the application (frequency, impact force, rate of use), as well as the environment in which it will be used (room temperature).

The chart below indicates the possible stylus choices.

Stylus	Rate of use <=15 % Font : 1 - 3 - DATAMATRIX Stroke code : 6	Rate of use >=15 % Font : 1 - 3 Stroke code : 6
M1C / M1CZ	++	-
M1CA / M1CAZ	+	++

Legend :
 - : overheating risk (machine interruption),
 + : possible to use,
 ++ : recommended use.

It is possible to increase the rate of use for the M1C stylus if the maximum impact force is not used .

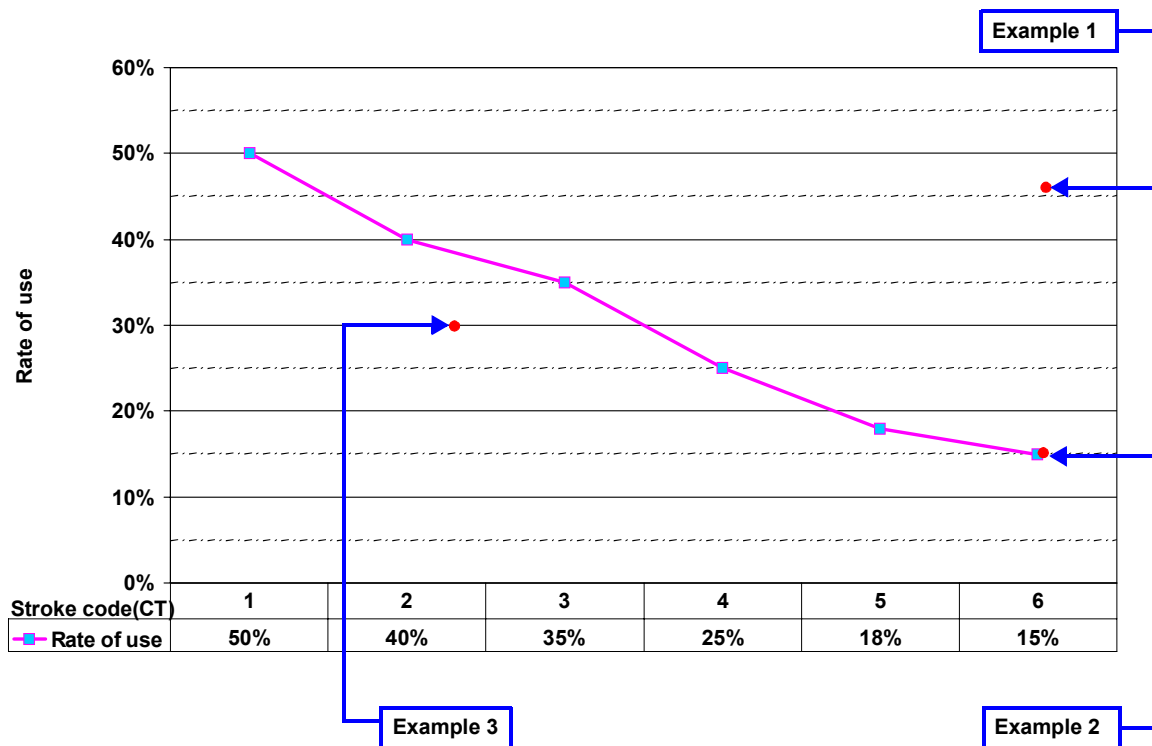
Calculating the rate of use

Tm : cycle marking time.

$$\text{Rate} = \frac{T_m}{T} \times 100$$

T : time interval between 2 marking starts

REPRESENTATION OF THE RATE OF USE IN RELATION TO THE IMPACT FORCE



⇒ Examples 1, 2 and 3 are explained on the following page.

<p><u>Example 1</u></p> <ul style="list-style-type: none"> • Rate : 200 parts per hour • Stroke force : 6 • Cycle time: 10 seconds 	$\frac{10}{\left(\frac{3600}{200}\right)} \times 100 = 56 \%$	<p>Stylus to be used: MICA since > 15 % (see graph on previous page)</p>
--	---	--

<p><u>Example 2</u></p> <ul style="list-style-type: none"> • Rate : 180 parts per hour • Stroke force: 6 • Cycle time : 3 seconds 	$\frac{3}{\left(\frac{3600}{180}\right)} \times 100 = 15 \%$	<p>Stylus to be used: MIC since <= 15 % (see graph on previous page)</p>
---	--	--

<p><u>Example 3</u></p> <ul style="list-style-type: none"> • Rate : 250 parts per hour • Stroke force: 2 • Cycle time : 5 seconds 	$\frac{5}{\left(\frac{3600}{250}\right)} \times 100 = 35 \%$	<p>Stylus to be used: MIC since < 40 % (see graph on previous page)</p>
---	--	---

1.2.4. Temperature protection

All styli are equipped with a temperature protection system. This system will automatically interrupt the machine if the maximum authorized temperature has been exceeded (stylus temperature >100°C). The interruption will occur at the end of the marking underway.

This security is necessary in the case of an incorrect estimation of the rate of use for the stylus, or a failure in the cooling system. After this type of interruption, the machine will only restart once the stylus has cooled.

1.2.5. Using the stylus

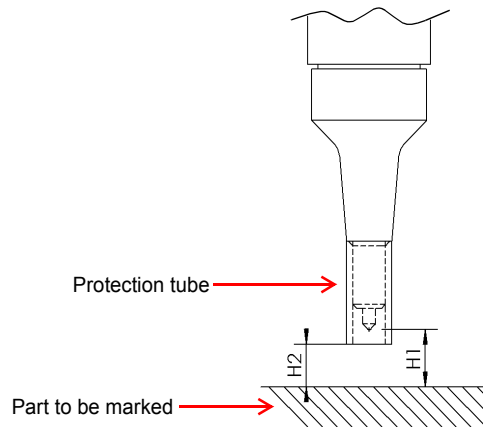
I - Adjustment

The adjustment of the height (H1) of the point of the stylus with relation to the part to be marked will depend on the force and frequency of the vibration as well as the presence or absence of the polycarbonate protection tube.

REMARK

- The diagram shown here gives the maximum adjustment amplitude for the stylus **WITHOUT** the protection tube. This tube may be removed using pliers in a situation where the maximum amplitude is necessary.

- This does not apply to the M1CZ and M1CAZ stylii .



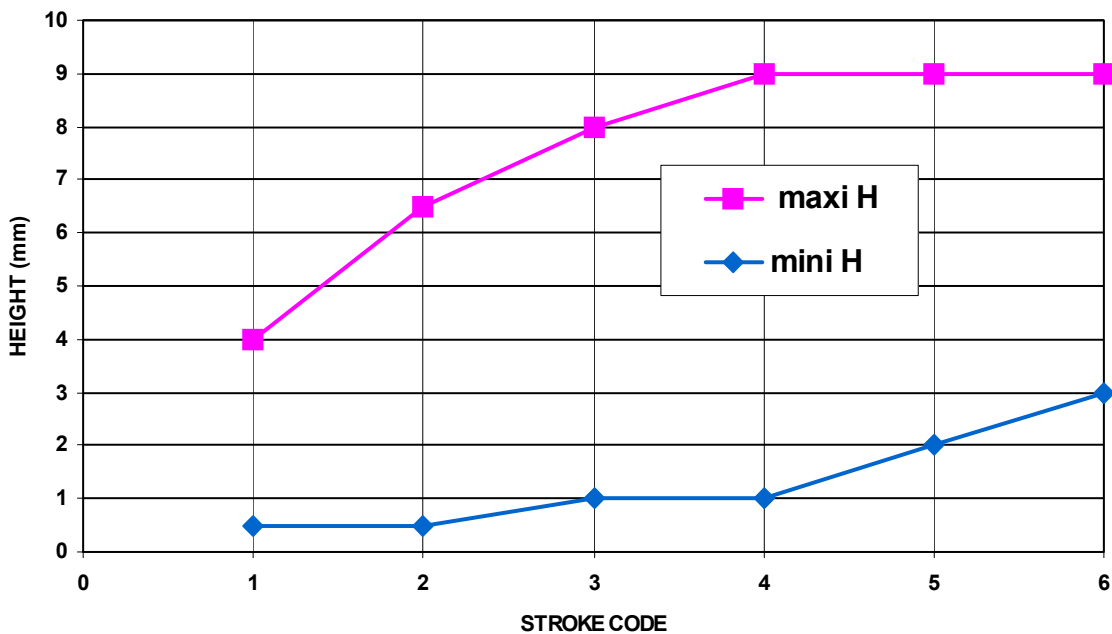
$$H1 = H2 + 3.3 \text{ mm}$$



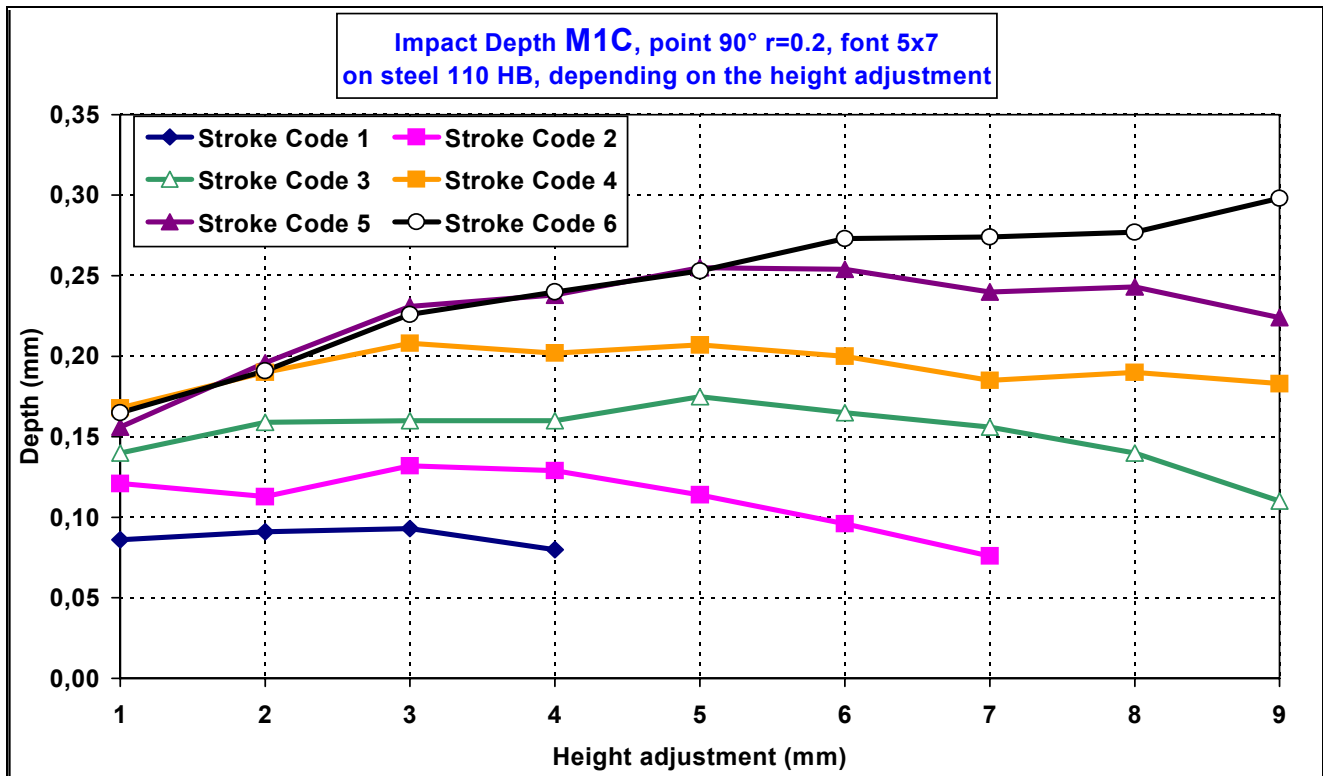
When carrying out this modification, make sure that all safety measures have been taken (wire netting, protection, photodetection cell, etc...) so that the operator does not risk putting a finger or hand under the stylus during the marking cycle.

TECHNIFOR cannot be held responsible for the non respect of this warning. This operation will be done under your entire responsibility, therefore not incurring that of TECHNIFOR.

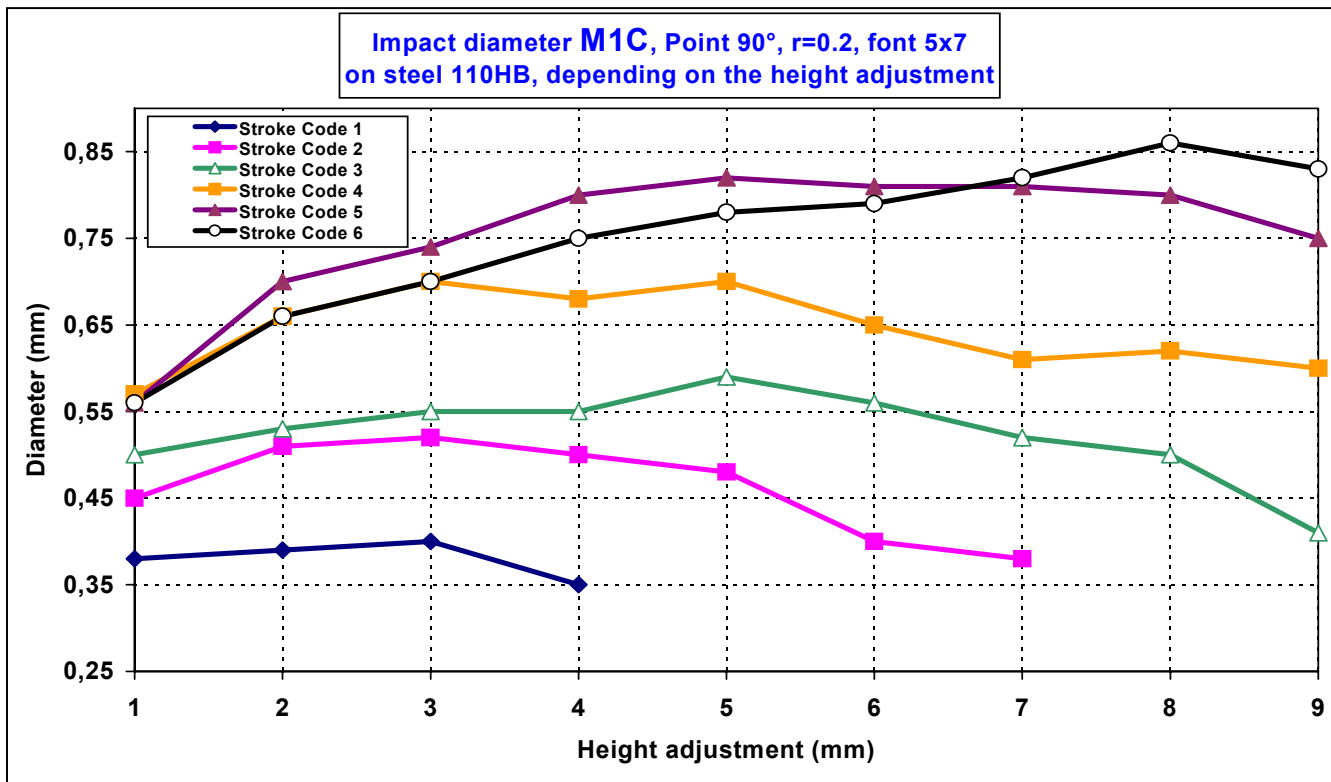
Height adjustment in relation to the stroke code



II - Marking depth



III - Impact Diameter



2

STYLUS M0C DIFFERENT MODELS

2.1 . Using with the CN312Cm - CN312Dm - CN312Sm

2.1.1. Introduction

The M0C is an electromagnetic stylus of average power and small mass which is designed to be used with the CN312Cm - CN312Dm - CN312Sm.

It allows you to mark with the following fonts:

- Highly legible dot by dot,
- 5x7 dot by dot matrix,
- DATAMATRIX code.

There are 4 versions available.

Short versions

- M0C-66 : short stylus without cooling.
- M0CA-66 : short stylus with compressed air cooling kit.
- M0CS-66 : short stylus with adapter for CN312Csm.
- M0CAS-66 : short stylus with adapter for CN312CSm and compressed air cooling kit.

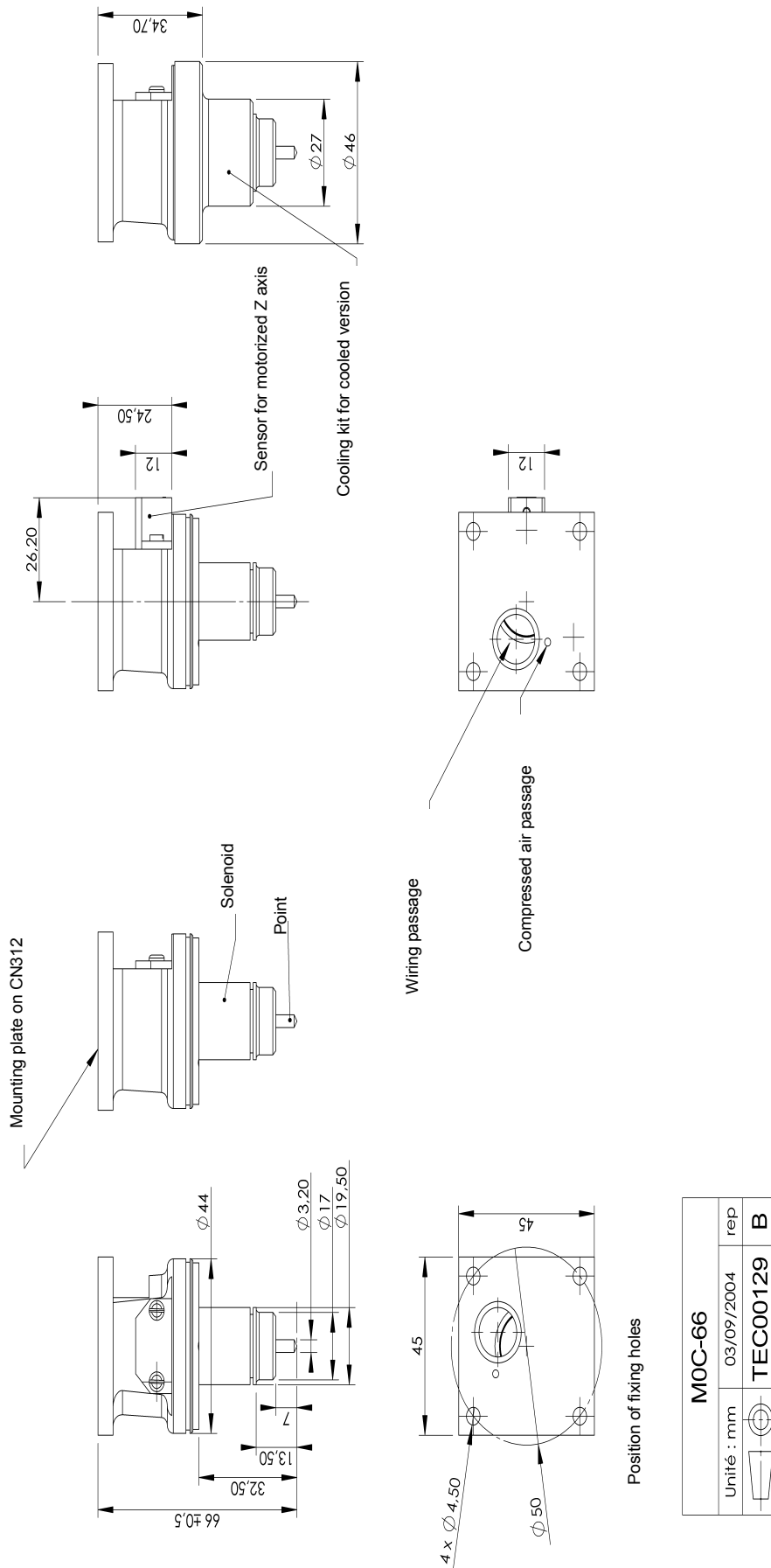
Long versions

- M0C-110 : long stylus without cooling.
- M0CA-110 : long stylus with compressed air cooling kit.
- M0Cs-110 : long stylus with adapter for CN312Sm.
- M0CAs-110: long stylus with adapter for CN312CSm and compressed air cooling kit.

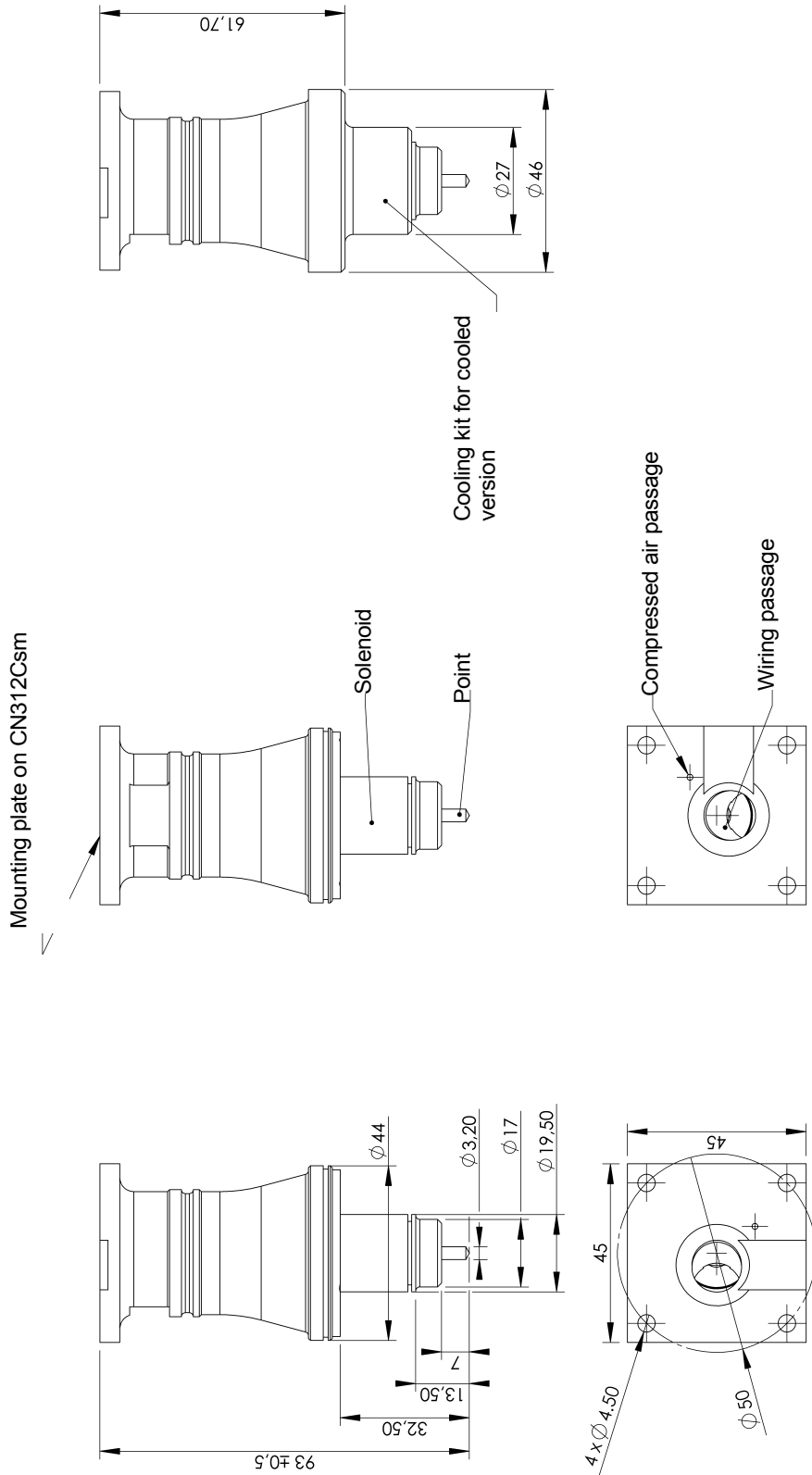
Versions with sensor

- M0CZ-66 : short stylus with sensor, without cooling.
- M0CAZ-66 : short stylus with sensor, with compressed air cooling kit.
- M0CZ-110 : long stylus with sensor, without cooling.
- M0CAZ-110: long stylus with sensor, with compressed air cooling kit.

2.1.2. Stylus M0C-66 / M0CA-66 / M0CZ-66 / M0CAZ-66



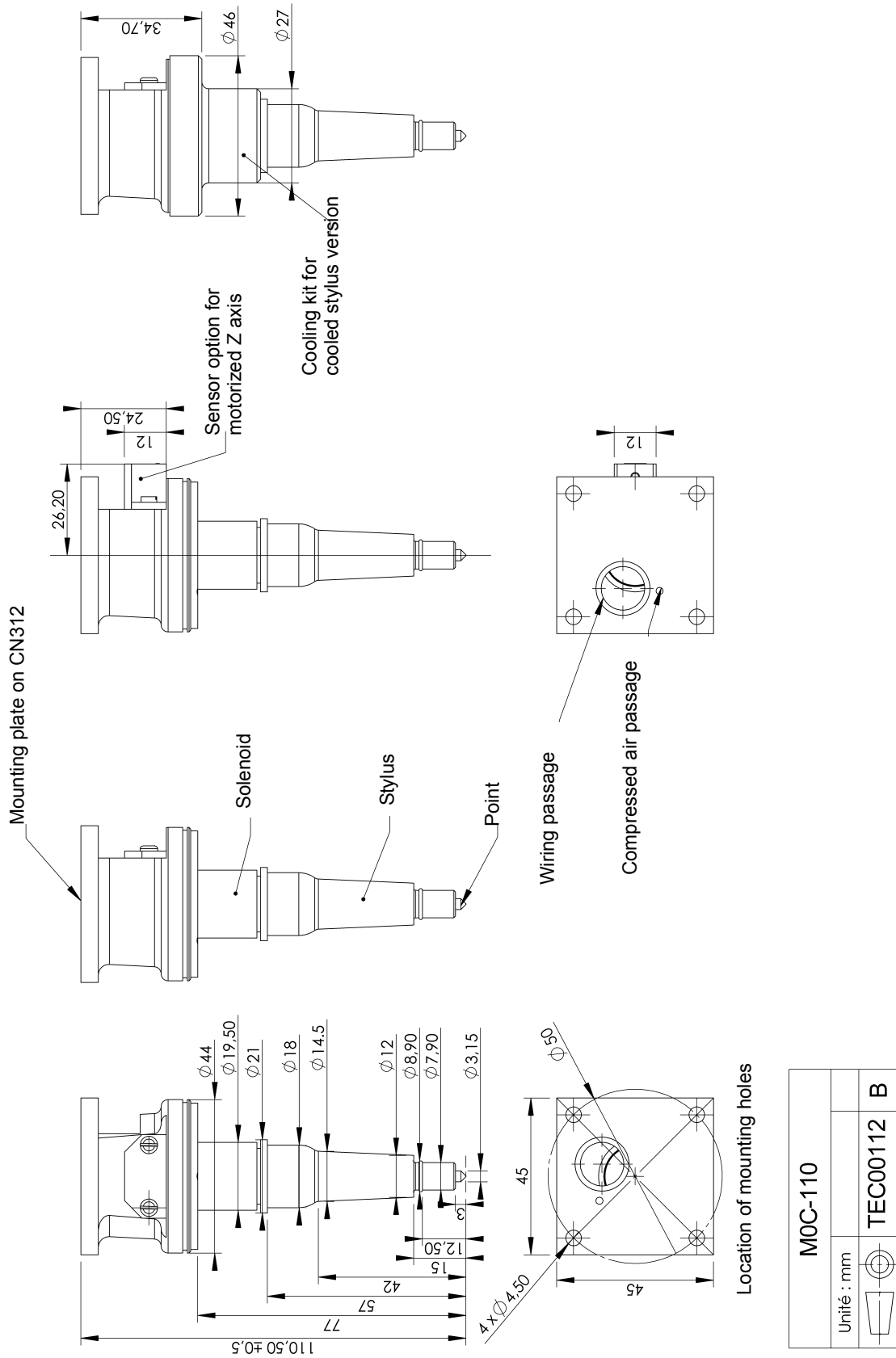
2.1.3. Stylus M0CS-66 / M0CAS-66



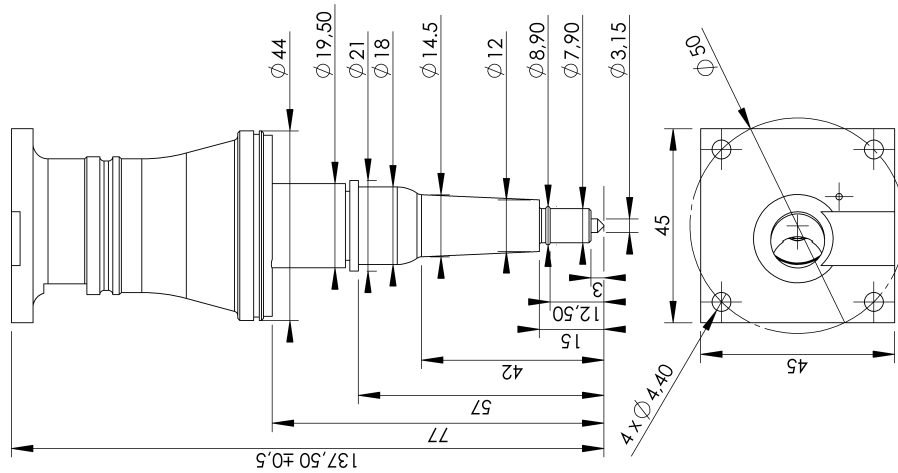
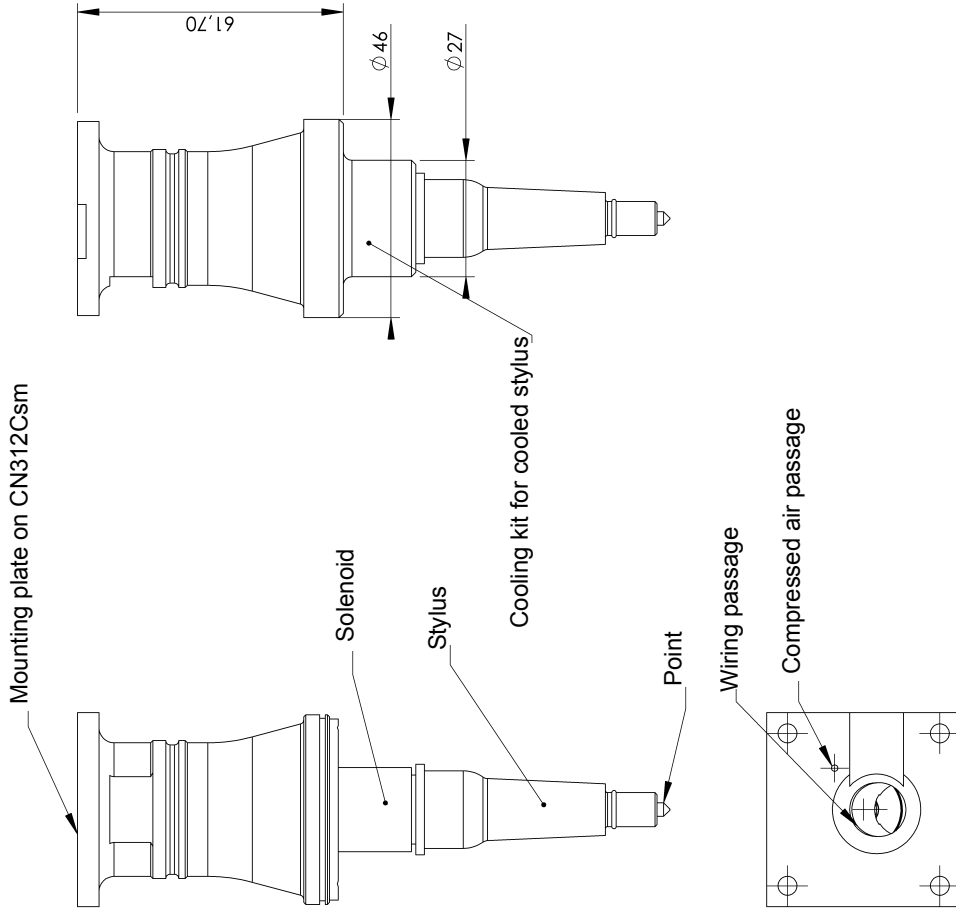
Location of mounting holes

M0CS-66	
Unité : mm	03/09/2004 rep
	TEC00130
	B

2.1.4. Stylus M0C-110 / M0CZ-110 / M0CA-110 / M0CAZ-110



2.1.5. Stylus M0CS-110 / M0CAS-110



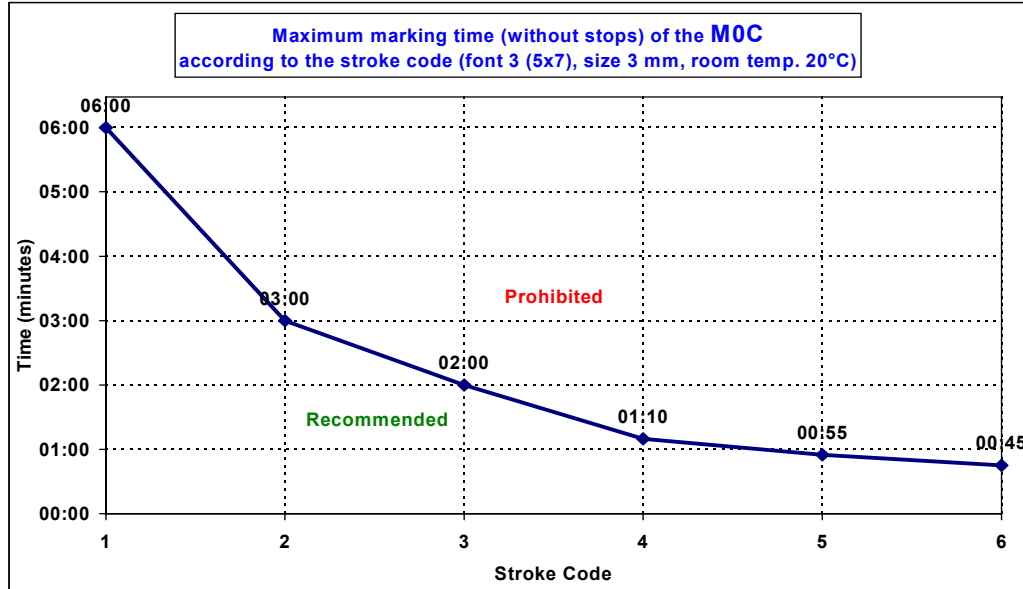
Location of mounting holes

M0CS-110	
Unité : mm	03/09/2004 rep
	TEC00115 B

2.1.6. Choice of the stylus

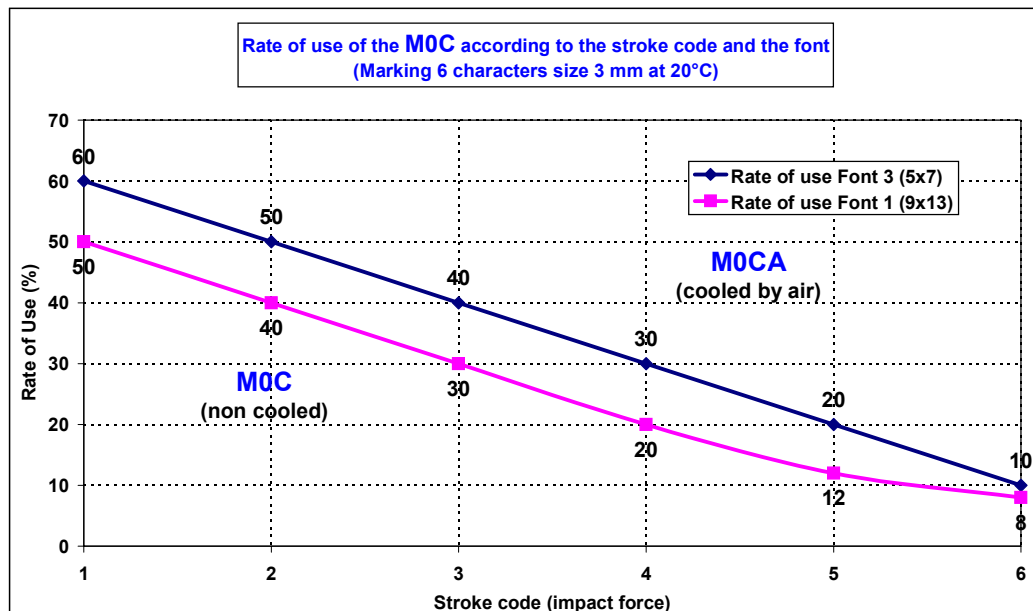
The choice of the stylus depends on the marking parameters to be used for the application (rate of use, font 1 or 3, impact force), as well as the environment in which it is used (room temperature).

The graph below indicates the maximum rate of use with relation to the font and the impact force (stroke code).



For a higher rate of use, it is necessary to use a version of the M0C with cooling (M0CA).

The graph below indicates the maximum marking time one must not exceed when using a M0C without cooling.



<p><u>Example 1</u></p> <ul style="list-style-type: none"> • Rate : 200 parts per hour • Stroke force: 6 • Cycle time: 10 seconds • Font number 1 	$\frac{10}{\left(\frac{3600}{200}\right)} \times 100 = 56 \%$	<p>Stylus to be used: M0CA since > 15 % (see graph on previous page)</p>
--	---	--

<p><u>Example 2</u></p> <ul style="list-style-type: none"> • Rate: 120 parts per hour • Stroke force: 6 • Cycle time: 3 seconds • Font number 3 	$\frac{3}{\left(\frac{3600}{120}\right)} \times 100 = 10 \%$	<p>Stylus to be used: M0C since <= 10 % (see curve on previous page)</p>
--	--	--

<p><u>Example 3</u></p> <ul style="list-style-type: none"> • Rate : 250 parts per hour • Stroke force: 2 • Cycle time: 5 seconds • Font number 1 	$\frac{5}{\left(\frac{3600}{250}\right)} \times 100 = 35 \%$	<p>Stylus to be used : M0C since < 40 % (see graph on previous page)</p>
---	--	--

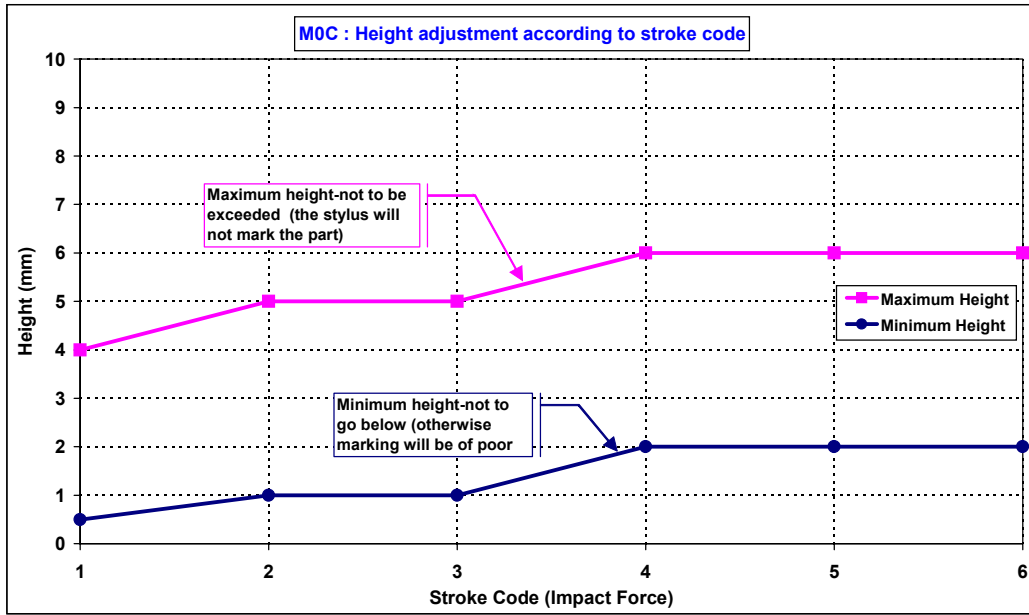
2.1.7. Temperature protection

All styli are equipped with a temperature protection system. This system automatically interrupts the functioning of the machine should the temperature exceed the maximum authorized temperature (stylus temperature > 90°C).

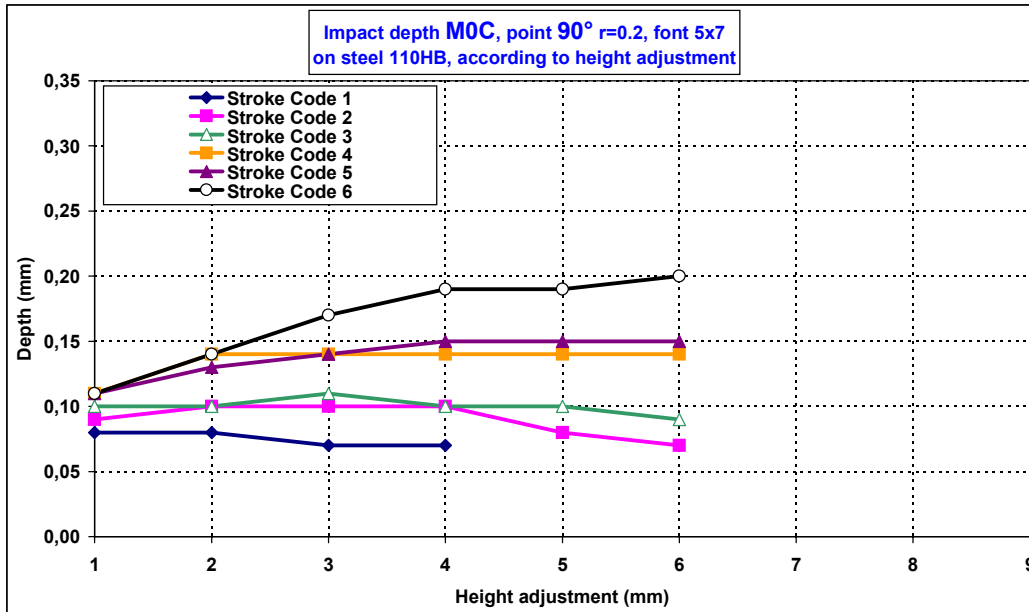
The interruption occurs once the marking underway is completed.

This security system is necessary in case of an incorrect estimation of the rate of use of the stylus, or a defect in the cooling system. After this type of interruption, the machine can be restarted only once the stylus has cooled.

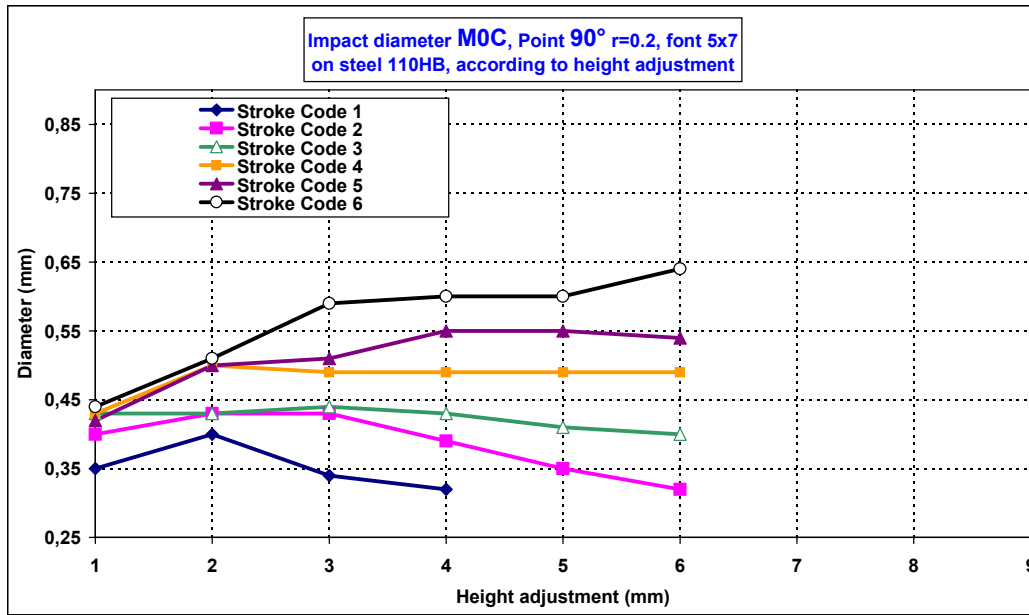
I - Height adjustment according to stroke code



II - Marking Depth



III - Impact diameter



3

LIST OF SPARE PARTS

LIST OF SPARE PARTS

3.1 . List of spare parts

3.1.1. For stylus MIC - MICA - MICT

ITEM CODE	DESCRIPTION
SESY001/27	M1C/211S-D & M1C/312C/s/D stylus nose
MRS6MT6111/2	RM11 A60-R1 point for stylus M0C LG110 and M1A-B-C
MRS6MT6213/1	RM12 A90-R2 point for stylus M0C LG 110 and M1C A90 - R2
MRS6MT6215/1	RM12 A120-R2 point for stylus M0C LG110 and M1C
SESY001/28	Repair kit for stylus M1C-M1CA-M1CT (washer + spring + o-ring)
SESY004/32	Z Sensor kit for M1CZ mounted on a CN312Dm / Sm + board

3.1.2. For stylus M0C - M0CA

ITEM CODE	DESCRIPTION
Shared parts	
SESY001/32	Repair kit for stylus M0C (washer + spring + o-ring)
SESY004/32	Z Sensor kit for M0CZ mounted on CN312Cm + board
SESY004/63	Z Sensor kit for M0CZ mounted on CN312Dm / Sm + board
SESY004/43	M0C wired solenoid set for CN312Cm/Sm/Dm
MCM01/3824	M0C adaptor for CN312C/S/Dm
MCM01/3918	M0CS adaptor for CN312Csm
For stylii M0C -M0CA - Length 66	
MRS6MT6111/3	RM01 A60-R1 point for stylus M0C LG 66
MRS6MT6213/2	RM02 A90-R2 point for stylus M0C LG 66
MRS6MT6215/2	RM02 A120-R2 point for stylus M0C LG 66
For stylii M0C - M0CA- Length 110	
SESY001/31	Stylus set M0C
MRS6MT6111/2	RM11 A60-R1 point for stylus M0C LG110 and M1A-B-C
MRS6MT6213/1	RM12 A90-R2 point for stylus M0C LG 110 and M1C A90-R2
MRS6MT6215/1	RM12 A120-R2 point for stylusM0C LG110 and M1C
SESY004/72	M0C stylus - A60-R1
SESY004/71	M0C stylus - A90-R2
SESY004/74	M0C stylus - A120-R2

To contact TECHNIFOR Group



www.technifor.com








	<p>Technifor SAS - France 114, quai du Rhône 01708 MIRIBEL Cedex Tél. : 33 (0)4 78 55 85 85 Fax : 33 (0)4 78 55 22 94 E-mail: tf@technifor.com</p>		<p>Technifor Inc. - U.S.A. 9800-J Southern Pine Boulevard Charlotte, NC 28273 Tel. : (1) 704 525 5230 Fax : (1) 704 525 5240 E-mail: tfinc@usa.technifor.com</p>
	<p>Technifor Ltd - England Unit 3 Trojan Business Centre Tachbrook Park Estate LEAMINGTON SPA CV34V 6RH Warwickshire Tel. : (44) 19 26 88 44 22 Fax : (44) 19 26 88 31 05 E-mail: sales@ltd.technifor.com</p>		<p>Technifor MARKIERUNGSGERÄTE GmbH - Germany Mauserstraße 13 D-71640 LUDWIGSBURG Tel. : (49) 71 41 29 80 98-0 Fax : (49) 71 41 29 80 98-19 E-mail: tfgmbh@gmbh.technifor.com</p>
	<p>Technifor Srl - Italy Corso Laghi 305 10051 AVIGLIANA Tel. : (39) 011 932 74 47 Fax : (39) 011 932 74 15 E-mail: tf.srl@technifor.com</p>		<p>Technifor Marcadores Industriales SL - Spain C/ Sant Iscle, 29 bajos B 08031 BARCELONA Tel. : (34) 93 407 07 51 Fax : (34) 93 407 17 26 E-mail: tfsl@sl.technifor.com</p>
	<p>Technifor Pictor Ltda - Brazil Av. Dr. Luis Arrobas Martins, 98 04781-000 - SAO PAULO SP Tel. : (55) 11 5541 74 93 Fax : (55) 11 5541 74 93 E-mail: vendas@ltda.technifor.com</p>		<p>Technifor Gravograph - Switzerland Champ Olivier 2 Ch 3280 MORAT Tel. : (41) 26 678 7200 Fax : (41) 26 678 7222 E-mail: sales@gravograph.com.ch</p>
	<p>Gravograph Malaysia SDN BHD - Malaysia Block A12-17 (Lobby 5), Damansara Intan n°1 Jalan SS20/27 47400 PETALIG JAYA, SELANGOR Tel. : (60) 3 71 18 3303 Fax : (60) 3 77 10 3305</p>		<p>Technifor KK - Japan 1-25 Takahata-Cho Nishinomiya-SHI 663-8202 HYOGO Tel. : (81) 798 63 7325 Fax : (81) 798 63 6280 E-mail: tfkk@jp.technifor.com</p>
	<p>Gravograph Singapore Pte Ltd - Singapore No6, New Industrial Road #07-03/04 Hoe Huat Industrial Building 536199 SINGAPORE Tel. : (65) 6289 4011 Fax : (65) 6289 4211 E-mail: sales@gravograph.com.sg</p>		<p>Technifor HKS Co. Ltd. - China Room A8220 - Jia Hua Business Center 808 Hong Qiao Road SHANGHAI 200030 Tel. : (86) 21/ 64 47 32 12 Fax : (86) 21/ 64 47 49 51 E-mail: tfhks@hks.technifor.com</p>
	<p>Technifor Gravograph - Australia Unit 3, 711 South Street RYDALMERE N.S.W. 2116 Tel. : (61) 29 684 2400 Fax : (61) 29 684 2500 E-mail: sales@gravograph.com.a</p>		<p>GravoTech Engineering PVT Ltd - India Gat n° 2323/1 - Reality Warehouse Nagar Road - Haveli Taluka - Wagholi PUNE 412 207 Tel. : (91) 20 / 309 18 577 Fax : (91) 20 / 270 50 642 / 513 E-mail: gravotech@vsnl.net</p>
	<p>GravoTech Nordrad AB - Sweden Vretenborgsvägen, 28 SE-126 30 HÄGERSTEN Tel. : (46) 8 658 15 60 Fax : (46) 8 658 15 64</p>		<p>GravoTech Sp zoo - Poland Ul. Gen. Grota Roweckiego 168 PL 52-214 WROCLAW Tel. : (48) 71 796 04 01 Fax : (48) 71 796 04 02 E-mail: infopl@technifor.com</p>

TABLE OF CONTENTS

1 - STYLUS M1C DIFFERENT MODELS	1-5
1.1 .Using with the CN211Sm - CN211Dm	1-6
1.1.1.Introduction	1-6
1.1.2.Stylus MIC	1-7
1.1.3.Stylus MICT	1-7
1.1.4.Stylus MICA	1-8
1.1.5.Choice of the stylus	1-8
1.1.6.Temperature protection	1-10
1.1.7.Using the Stylus	1-10
1.1.8.Choice of marking parameters	1-14
1.1.9.Chart for selection of parameters	1-16
1.1.10.Maintenance	1-16
1.2 .Using With A Cn312cm	1-17
1.2.1.Introduction	1-17
1.2.2.Stylus MIC - different models	1-18
1.2.3.Choice of the stylus	1-19
1.2.4.Temperature protection	1-20
1.2.5.Using the stylus	1-21
2- STYLUS M0C DIFFERENT MODELS	2-23
2.1 .Using with the CN312Cm - CN312Dm - CN312Sm	2-25
2.1.1.Introduction	2-25
2.1.2.Stylus M0C-66 / M0CA-66 / M0CZ-66 / M0CAZ-66	2-26
2.1.3.Stylus M0CS-66 / M0CAS-66	2-27
2.1.4.Stylus M0C-110 / M0CZ-110 /M0CA-110 / M0CAZ-110	2-28
2.1.5.Stylus M0CS-110 / M0CAS-110	2-29
2.1.6.Choice of the stylus	2-30
2.1.7.Temperature protection	2-31
3-LIST OF SPARE PARTS	3-35
3.1 .List of spare parts	3-37
3.1.1. For stylus MIC - MICA - MICT	3-37
3.1.2.For stylus M0C - M0CA	3-38

Appendix: To contact TECHNIFOR Group

