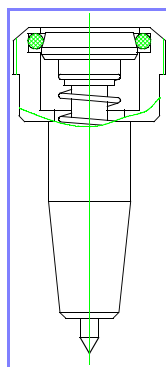


TECHNIFOR MANUAL

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PNEUMATIC STYLI DIFFERENT MODELS



MICRO-PERCUSSION DEPARTMENT



TECHNIFOR - IDENTIFICATION AND TRACEABILITY SYSTEMS

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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
November 2003	0311A0	First edition
January 2006	0601B0	. Change in certifying organization

Preamble

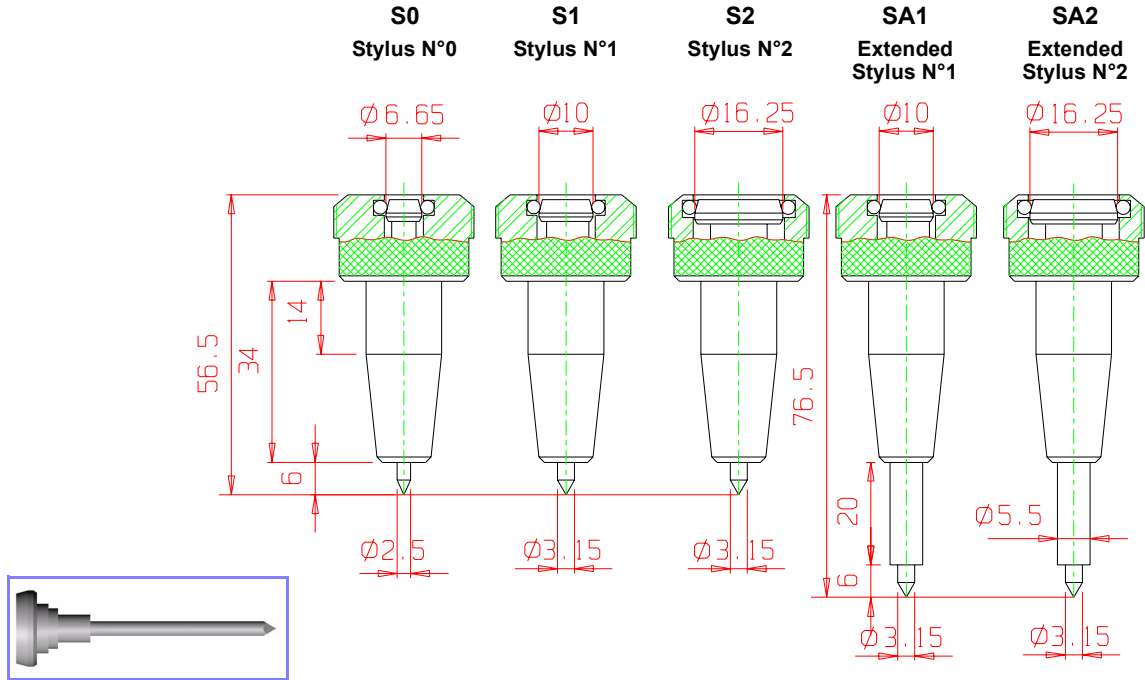
This document aims to draw up an inventory of the different types of styli that can be found at TECHNIFOR, to define the dimensions of operation for each of them, as well as the parameters influencing the quality and depth of marking under normal conditions of use. (see "Start up" chapter of the operation and maintenance manuals).

1- Different styli models

1.1 . Standard styli

There are 3 pneumatic styli of different powers : N°0, N°1 and N°2.

From the weakest, N°0, to the most powerful, N°2, their power varies depending on the diameter of the head of the point.



Replacement point



Taking into account the differences in size which are natural in manufacturing, the dimensions for the length can vary from one styli to another (± 1 mm).

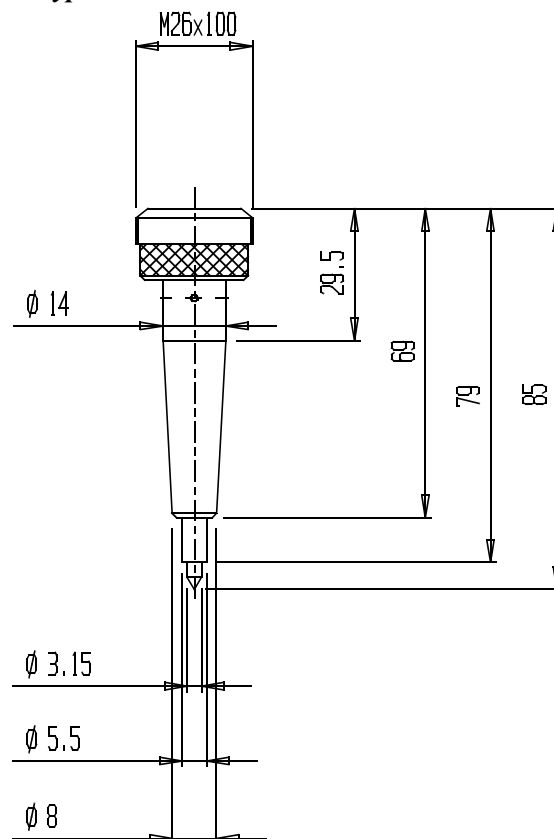
1.2 . Possible angles and radii for carbide points

Stylus N° 0		Stylus N° 1		Stylus N° 2		Extended stylus N° 1		Extended stylus N° 2	
60° point angle									
Radius	Ref.	Radius	Ref.	Radius	Ref.	Radius	Ref.	Radius	Ref.
0,1	S01	0,1	S11	0,2	S22	0,2	SA12		
0,2	S02	0,2	S12					0,2	SA22
		0,5	S15	0,5	S25			0,5	SA25
90° point angle: On request - no reference.									
120° point angle									
		Radius	Ref.	Radius	Ref.				
		0.2	S12-120°	0.2	S22-120°				

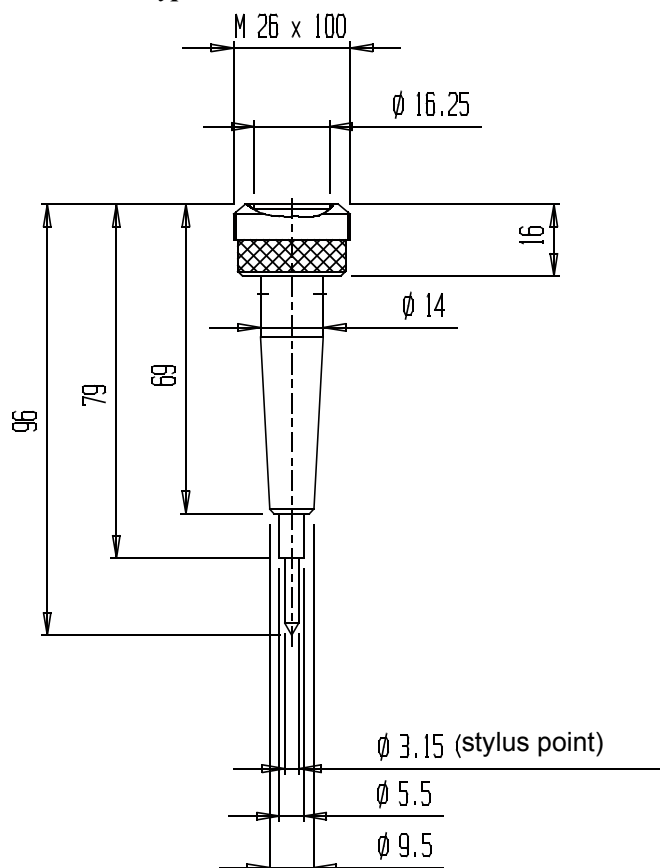
For other styli (length, angle, radius), or diamond point (SD10-SD15) : consult us.

1.3 . Special styli

1.3.1. Extended stylus N°2 - length 85 mm : SSA2-85 type



1.3.2. Extended stylus N°2 - length 96 mm : SSA2-96 type



1.4 . High performance styli

• Stylus N° 1 with increased amplitude (SAA1 type)

This stylus is able to cope with a greater level of unevenness on the surface of the part to be marked.
(see *chapter 4* of operation manual).

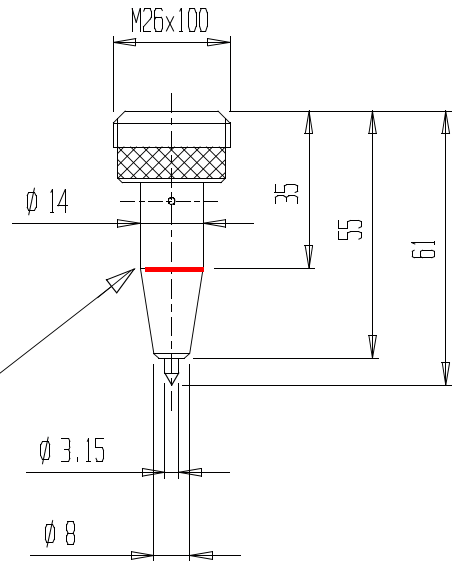
. Standard styli : SAA11 and SAA15.

• Stylus N° 2 with increased amplitude (SAA2 type)

This stylus is able to cope with a greater level of unevenness on the surface of the part to be marked.
(see *chapter 4* of operation manual).

. Stylus standard : SAA22.

Marker for quicker visual differentiation between the length of the high performance stylus and that of standard styli (body + 4.5 mm)

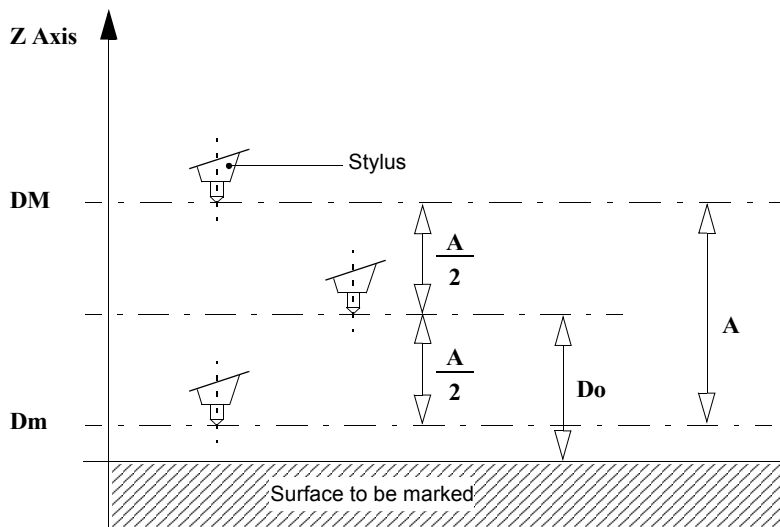


1.5 . Possible angles and radii for carbide points - special/high performance styli

Ultra-extended stylus N°2 Length 85 mm		Ultra-extended stylus N°2 Length 96 mm		Improved Amplitude Stylus N°1		Improved Amplitude Stylus N°2	
60° point angle							
Radius	Ref.	Radius	Ref.	Radius	Ref.	Radius	Ref.
				0,2	SAA12	0,2	SAA22
0,2	SSA22-85	0,2	SSA22-96	0,5	SAA15		
0,5	SSA25-85	0,5	SSA25-96				

For other angles and radii : consult us.

2- Definition of dimensions for marking with a stylus



- Amplitude of a stylus : $A = DM - Dm$
- Dm = minimum distance of adjustment
- DM = maximum distance of adjustment
- Do = optimum distance of adjustment = $\frac{DM + Dm}{2}$

3- Dimensions of operation of a stylus

3.1 . Standard styli

Type of stylus	Stroke code 0		Stroke code 2		Stroke code 4		Stroke code 6	
	A mm	Do mm	A mm	Do mm	A mm	Do mm	A mm	Do mm
S0	1,5	3,0	2,7	4,0				
S1	0,9	2,0	1,9	3,3				
S2	2,4	3,6	2,6	4,4	3,6	4,5	4,1	4,8
SA1	0,9	2,2	1,8	3,0				
SA2	2,2	2,5	3,3	4,5	3,5	4,8	4,1	4,9
SSA2-85			3,4	4,2	4,3	4,5	5,0	4,8
SSA2-96			3,4	4,2	4,3	4,5	5,0	4,8

3.2 . High performance styli

Type of stylus	Stroke code 0		Stroke code 2		Stroke code 4		Stroke code 6	
	A mm	Do mm	A mm	Do mm	A mm	Do mm	A mm	Do mm
SAA1					1,9	3,9	2,8	4,5
SAA2					3,8	3,9	4,0	4,5

3.3 . Stylus for CN13

Type of stylus	Stroke code 0		Stroke code 2	
	A mm	Do mm	A mm	Do mm
N° 2	4,5	5,0	5,2	5,9

4- Parameters influencing marking

4.1 . Power produced by the stylus

This power depends mainly on :

- . The air pressure,
- . The physical characteristics of the stylus.

4.2 . Movement speeds of a standard stylus during operation

- . "Marking speed", if this is too high the characters will be malformed
- . "Displacement speed" : if this is too high, the stylus will lose positioning accuracy.

4.3 . Frequency of stylus vibration

This is linked to the physical characteristics of each type of stylus

4.4 . Shape of the point

- . Angle of point head
- . Radius of point head

Advice

To maintain a good marking quality, we advise you to sharpen the stylus point at least every 2 to 3 months (depending on your rate of marking).

This value is indicative : it will be set after observation, soon after the start up of the marking equipment.

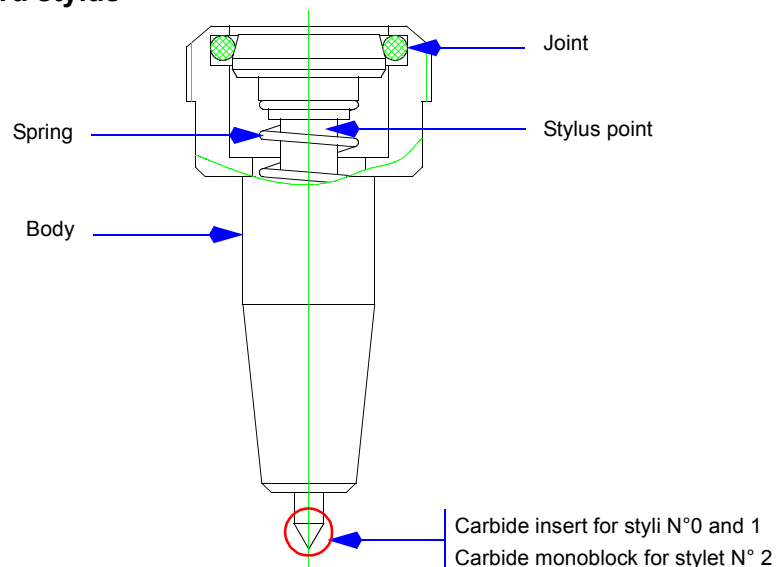
The larger the radius, the more risk there is of the small characters becoming illegible, particularly on soft materials.

4.5 . Material to be marked

- . Composition
- . Condition of the surface (roughness, presence of scale...)
- . Thickness of the part
- . Surface treatment (composition, thickness...)
- . Temperature of the material

5- Composition of a stylus

5.1 . Cut-away of a standard stylus



6- Wearing parts

ITEM	ITEM CODE
RS01 radius 0.1 standard point for stylus #0	MRS11T0131
RS02 radius 0.2 standard point for stylus #0	MRS11T0231
RS11 radius 0.1 point for stylus #1	MRS11T1131/1
RS12 radius 0.2 point for stylus #1	MRS11T1231/1
RS12 - 120° radius 0.2 point for stylus #1	MRS11T1213/1
RS15 radius 0.5 point for stylus #1	MRS11T1531/1
RSD15 radius 0.5 #1 with diamond point	MRS11T1224
RS22 radius 0.2 standard point for stylus #2 and SMC2	MRS11T2211
RS22 - 120° radius 0.2 point at 120° for stylus #2	MRS11T2212
RS25 radius 0.5 standard point for stylus #2 and SMC2	MRS11T2511
RSA12 radius 0.2 extended point #1	MRS12T1231/1
RSAA12 radius 0.2 point for increased amplit. for stylus #1	MRS1AT1231
RSAA22 radius 0.2 point for increased amplit. for stylus #2	MRS1AT2211
RSA22 radius 0.2 extended point for stylus #2	MRS12T2211
RSA25 radius 0.5 extended point for stylus #2	MRS12T2511
RSSA22-85 mm radius 0.2 extra-long point (85mm) for stylus #2	MRS53T2211
RSSA22-96 radius 0.2 extra-long point (96mm) for stylus #2	MRS54T2211
RSSA25-96 radius 0.5 extra-long point (96mm) for stylus #2	MRS54T2511
Repair kit for stylus #0 with O-ring and spring	SESY001/2
Repair kit for stylus #1 with O-ring and spring	SESY001/3
Repair kit for stylus #2 and SSA20 - 85 or 96 + O-ring + spring	SESY001/4
# 0 stylus body with bushes (without: point, O-ring, spring)	MCM01/442
# 1 stylus body with bushes (without: point, O-ring, spring)	MCM01/163
# 2 stylus body with bushes (without: point, O-ring, spring)	MCM01/164
# 1 extended stylus body + bushes (without: point, O-ring, spring)	MCM01/3028
# 2 extended stylus body + bushes (without: point, O-ring, spring)	MCM01/3029
#2 stylus body SSA20-85 or 96 + bushes (without: point, O-ring, spring)	MCM01/8
Sharpening - angle and radius to be specified	MCM01/3715

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