

Bandage for Rhinoplasty

Surgical Instruments

Reconstructive Biomaterials

PVA Anatomical Swabs

Prostheses for Otosurgery

Disposable Suction Tubes

Prostheses for Stapes Surgery

Self-Crimping Hook
in Superelastic NITINOL



audio[®]
TECHNOLOGIES

What is NITINOL?

NITINOL is a Nickel (Ni) and Titanium (Ti) alloy accidentally discovered by two American researchers at the Naval Ordnance Laboratory (NOL) who called it NiTiNOL, which is the acronym of Nickel (Ni) Titanium (Ti) and the laboratory where it was discovered.

There are 2 types of Nitinol:

THERMIC NITINOL: The molecular reticule takes two different shapes depending by the temperature. This type of Nitinol returns to its original shape when it's subjected to a heating source.

SUPERELASTIC NITINOL: it can be bended and twisted but it always returns to its original shape.

No case of allergy to Nitinol in otologic application has ever been reported in clinical literature. An allergic test for Nitinol is not available and a test for Nickel is generic. It's recommended to gather the patient's anamnesis regarding allergy to metals. In case the surgeon decide not to implant the Nitinol prosthesis we suggest using the Self-crimping piston in elastic Titanium. These prostheses have less elasticity compared to the Nitinol prostheses but are self-crimping anyway.

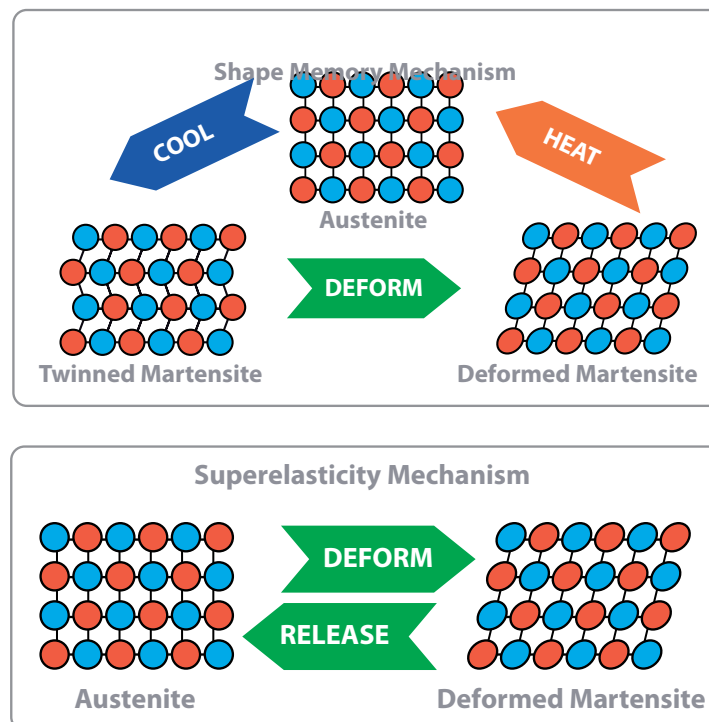
See Audio-Technologies catalogue on the web site: www.audiotechnologies.it

Fields of application

Both the thermal memory **NITINOL** and the superelastic **NITINOL** find application in a number of medical fields, mainly in cardiovascular surgery and in endoscopic surgery.

NITINOL application in otology

Audio Technologies has developed an industrial process to create a prosthesis that is fitted to the long apophysis of the incus with a simple vertical movement requiring only 4 milligram load.



Self-Crimping Superelastic NITINOL / PTFE Piston

Self-Crimping Superelastic NITINOL / PTFE Piston available in diameters of 0.4 - 0.5 - 0.6 - 0.8 mm and lengths from 4.00 to 9.99 mm.

(PTFE: polytetrafluorethylene)

CODE SPL 03.43
SPL 03.44
SPL 03.45
SPL 03.46

Features:

• NITINOL HOOK

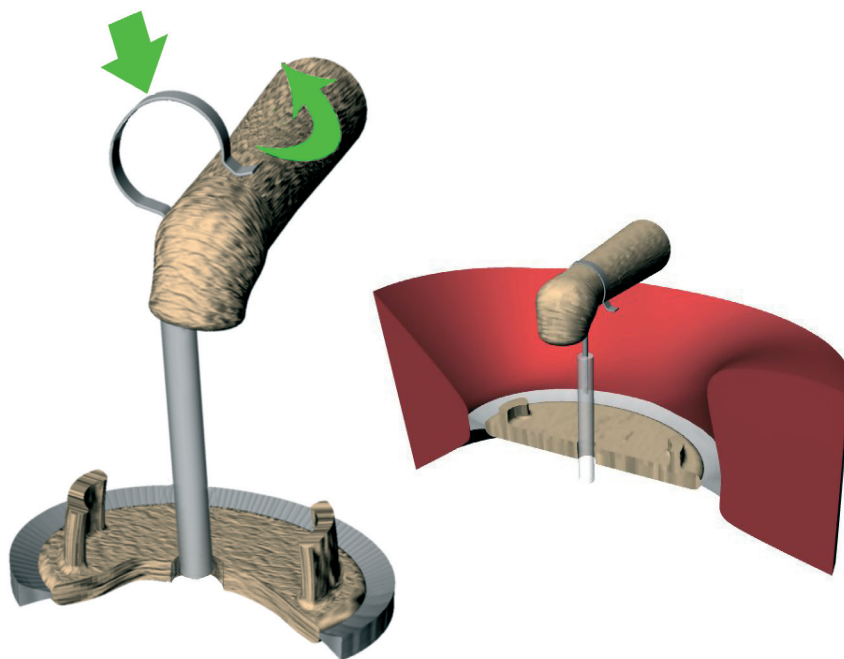
The classic Audio flat hook in combination with the super elastic NITINOL is the result of a unique Audio Technologies manufacturing process. This characteristic is combined with the other good qualities of NITINOL: mechanical resistance, bioinertia, and lightweight.

• SEMPLIFICATION OF THE OPERATION

The hook elasticity reduces the surgery steps and the difficulties that may occur during the closing phase. The hook closes softly, uniformly wrapping the pressure along the total periphery of the long incus process, so to minimize the risk of compressive necrosis.

• EASY ASSEMBLING

The piston attaches to the incus with an easy downward movement. The micro forceps Audio ref. SPL 03.01 grant an easy assembling of the prosthesis to the incus.



Self-Crimping Superelastic NITINOL/PTFE Piston

CODE SPL 03.43

Superelastic NITINOL - PTFE: polytetrafluorethylene

Designed by Dott. Franco Beoni

Dimensions

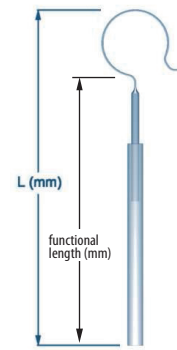
Wire ø: 0.20 mm
Columella ø: 0.40 mm

Packaging

Individually packaged implants.

CODE	L (mm)	FL (mm)
SPL 03.43.400	4.00	3.00
SPL 03.43.425	4.25	3.25
SPL 03.43.450	4.50	3.50
SPL 03.43.475	4.75	3.75
SPL 03.43.500	5.00	4.00
SPL 03.43.525	5.25	4.25
SPL 03.43.550	5.50	4.50
SPL 03.43.575	5.75	4.75
SPL 03.43.600	6.00	5.00
SPL 03.43.625	6.25	5.25
SPL 03.43.650	6.50	5.50

CODE	L (mm)	FL (mm)
SPL 03.43.700	7.00	6.00
SPL 03.43.750	7.50	6.50
SPL 03.43.800	8.00	7.00
SPL 03.43.850	8.50	7.50
SPL 03.43.900	9.00	8.00
SPL 03.43.950	9.50	8.50
SPL 03.43.999	9.99	8.99



Self-Crimping Superelastic NITINOL/PTFE Piston

CODE SPL 03.44

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

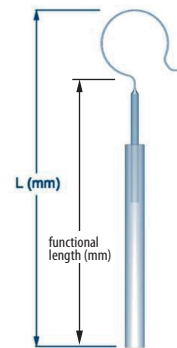
Wire ø: 0.20 mm
Columella ø: 0.50 mm

Packaging

Individually packaged implants.

CODE	L (mm)	FL (mm)
SPL 03.44.400	4.00	3.00
SPL 03.44.425	4.25	3.25
SPL 03.44.450	4.50	3.50
SPL 03.44.475	4.75	3.75
SPL 03.44.500	5.00	4.00
SPL 03.44.525	5.25	4.25
SPL 03.44.550	5.50	4.50
SPL 03.44.575	5.75	4.75
SPL 03.44.600	6.00	5.00
SPL 03.44.625	6.25	5.25
SPL 03.44.650	6.50	5.50

CODE	L (mm)	FL (mm)
SPL 03.44.700	7.00	6.00
SPL 03.44.750	7.50	6.50
SPL 03.44.800	8.00	7.00
SPL 03.44.850	8.50	7.50
SPL 03.44.900	9.00	8.00
SPL 03.44.950	9.50	8.50
SPL 03.44.999	9.99	8.99



Self-Crimping Superelastic NITINOL/PTFE Piston

CODE SPL 03.45

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

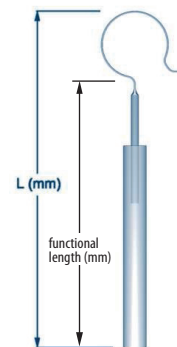
Wire ø: 0.20 mm
Columella ø: 0.60 mm

Packaging

Individually packaged implants.

CODE	L (mm)	FL (mm)
SPL 03.45.400	4.00	3.00
SPL 03.45.425	4.25	3.25
SPL 03.45.450	4.50	3.50
SPL 03.45.475	4.75	3.75
SPL 03.45.500	5.00	4.00
SPL 03.45.525	5.25	4.25
SPL 03.45.550	5.50	4.50
SPL 03.45.575	5.75	4.75
SPL 03.45.600	6.00	5.00
SPL 03.45.625	6.25	5.25
SPL 03.45.650	6.50	5.50

CODE	L (mm)	FL (mm)
SPL 03.45.700	7.00	6.00
SPL 03.45.750	7.50	6.50
SPL 03.45.800	8.00	7.00
SPL 03.45.850	8.50	7.50
SPL 03.45.900	9.00	8.00
SPL 03.45.950	9.50	8.50
SPL 03.45.999	9.99	8.99



Self-Crimping Superelastic NITINOL/PTFE Piston

CODE SPL 03.46

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

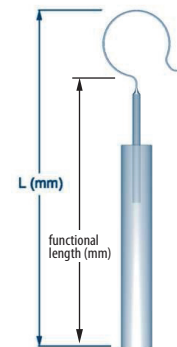
Wire ø: 0.20 mm
Columella ø: 0.80 mm

Packaging

Individually packaged implants.

CODE	L (mm)	FL (mm)
SPL 03.46.400	4.00	3.00
SPL 03.46.425	4.25	3.25
SPL 03.46.450	4.50	3.50
SPL 03.46.475	4.75	3.75
SPL 03.46.500	5.00	4.00
SPL 03.46.525	5.25	4.25
SPL 03.46.550	5.50	4.50
SPL 03.46.575	5.75	4.75
SPL 03.46.600	6.00	5.00
SPL 03.46.625	6.25	5.25
SPL 03.46.650	6.50	5.50

CODE	L (mm)	FL (mm)
SPL 03.46.700	7.00	6.00
SPL 03.46.750	7.50	6.50
SPL 03.46.800	8.00	7.00
SPL 03.46.850	8.50	7.50
SPL 03.46.900	9.00	8.00
SPL 03.46.950	9.50	8.50
SPL 03.46.999	9.99	8.99



Trimnable Self-Crimping Superelastic NITINOL \ PTFE Piston

Self-Crimping Superelastic NITINOL Piston, available in diameters 0.4 – 0.5 – 0.6 – 0.8 mm and length 7.0 mm trimmable to 4.25 mm*.

(PTFE: polytetrafluorethylene)

CODE SPL 03.43S
SPL 03.44S
SPL 03.45S
SPL 03.46S

* It is advisable to use "Trimnable prosthesis measuring plate" code SPL 03.06 for the prosthesis trimming phase.

Features:

• NITINOL HOOK

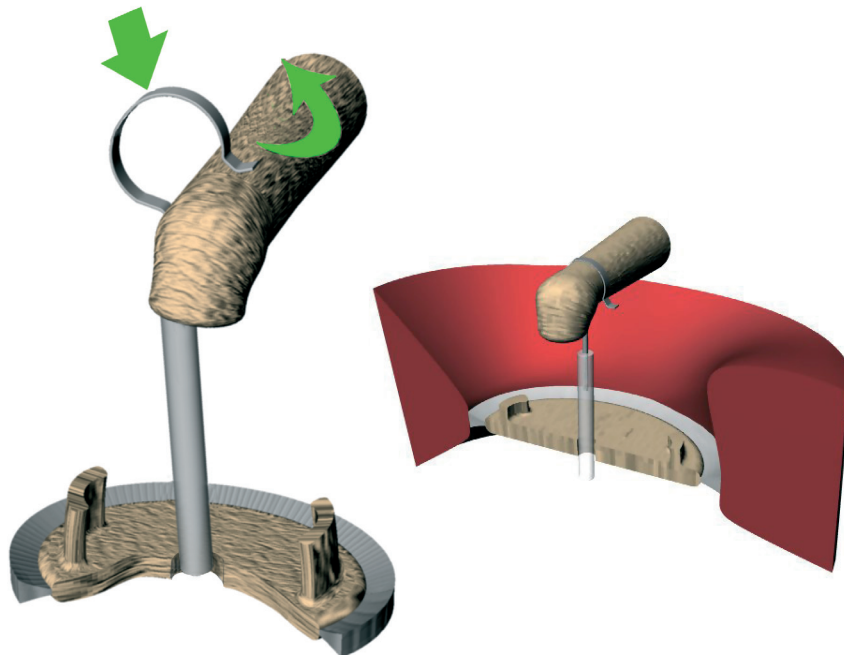
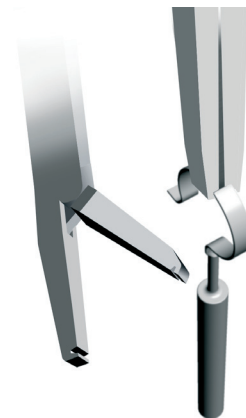
The classic Audio flat hook, in combination with the super elastic NITINOL, is the result of a unique Audio Technologies manufacturing process. This characteristic is combined with the other good qualities of NITINOL: mechanical resistance, bioinertia, and lightweight.

• SIMPLIFICATION OF THE OPERATION

The hook elasticity reduces the surgery steps and the difficulties that may occur during the closing phase. The hook closes softly, uniformly wrapping the pressure along the total periphery of the long incus process, minimizing the risk of compressive necrosis.

• EASY ASSEMBLING

The piston attaches to the incus with an easy downward movement. The micro forceps Audio ref. SPL 03.01 makes it widely easy assembling the prosthesis to the incus.



Trimnable Self-Crimping Superelastic NITINOL \ PTFE Piston

CODE SPL 03.43S

Superelastic NITINOL - PTFE: polytetrafluorethylene

Designed by Dott. Franco Beoni

Dimensions

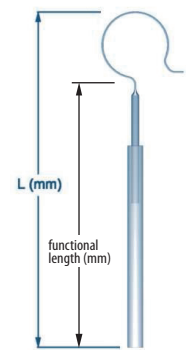
Wire \varnothing : 0.20 mm

PTFE Columella \varnothing : 0.40 mm

Packaging

Individually packaged implants.

CODE	Tot. Length	Functional Length
SPL 03.43S	7.00 trimmable to 4.25 mm	6.00 trimmable to 3.25 mm



Trimmable Self-Crimping Superelastic NITINOL \ PTFE Piston

CODE SPL 03.44S

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

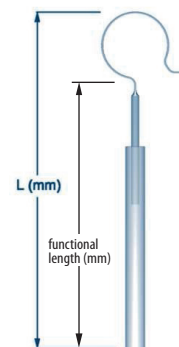
Wire \varnothing : 0.20 mm

PTFE Columella \varnothing : 0.50 mm

Packaging

Individually packaged implants.

CODE	Tot. Length	Functional Length
SPL 03.44S	7.00 trimmable to 4.25 mm	6.00 trimmable to 3.25 mm



Trimmable Self-Crimping Superelastic NITINOL \ PTFE Piston

CODE SPL 03.45S

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

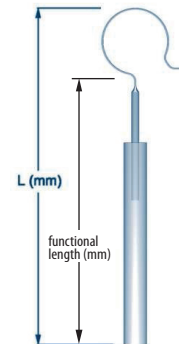
Wire \varnothing : 0.20 mm

PTFE Columella \varnothing : 0.60 mm

Packaging

Individually packaged implants.

CODE	Tot. Length	Functional Length
SPL 03.45S	7.00 trimmable to 4.25 mm	6.00 trimmable to 3.25 mm



Trimmable Self-Crimping Superelastic NITINOL \ PTFE Piston

CODE SPL 03.46S

Superelastic NITINOL - PTFE: polytetrafluorethylene

Dimensions

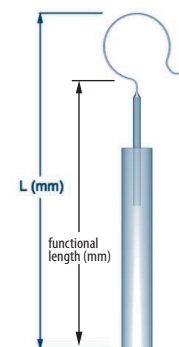
Wire \varnothing : 0.20 mm

PTFE Columella \varnothing : 0.80 mm

Packaging

Individually packaged implants.

CODE	Tot. Length	Functional Length
SPL 03.46S	7.00 trimmable to 4.25 mm	6.00 trimmable to 3.25 mm



Forceps for Nitinol Prosthesis

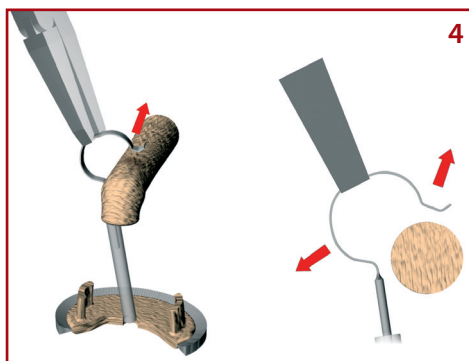
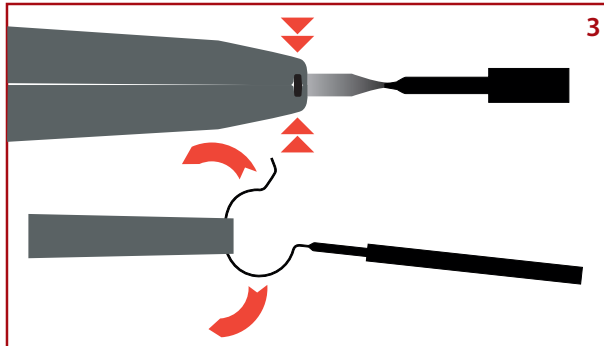
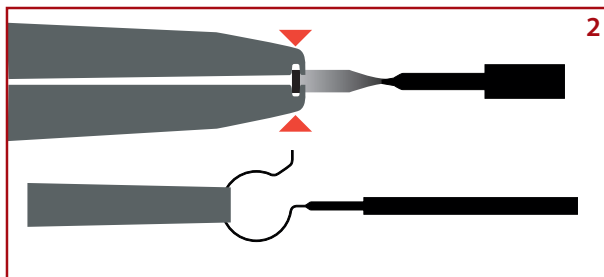
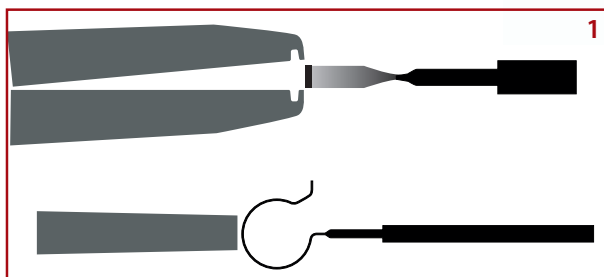
CODICE SPL 03.01

"Claudia forceps"

Designed by Dott. Franco Beoni

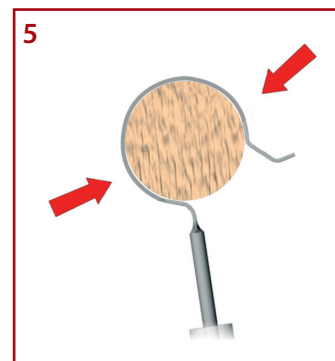
Material:
Stainless Steel
Weight: 12 Gr
Length: 70 mm

Jaws:
Length: 4.0 mm
Width: 0.9 mm



Use:

- 1) Catch the hook of the piston in the micro-forceps.
- 2) Hold the hook of the piston in the jaws of the micro-forceps.
- 3) The hook will open when pressed into the grooves of the micro-forceps.
- 4) The opened hook can be easily assembled onto the incus.
- 5) Open the micro-forceps to release the piston. The hook, thanks to the nitinol super-elasticity, will close automatically and gently on the incus.

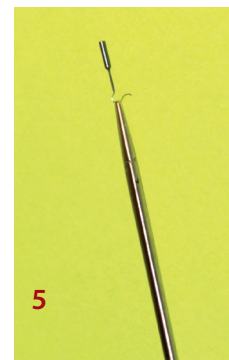
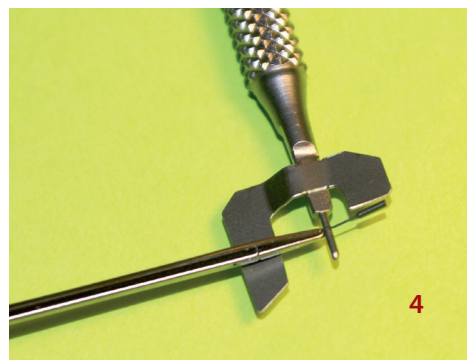
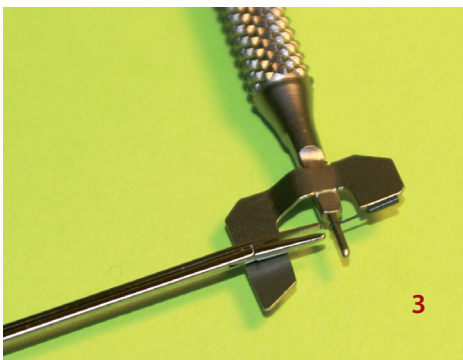
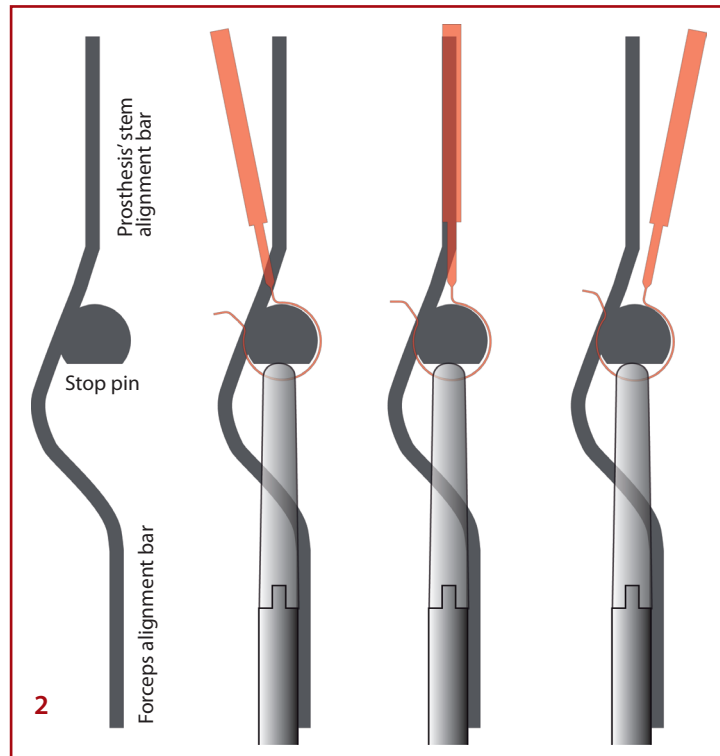
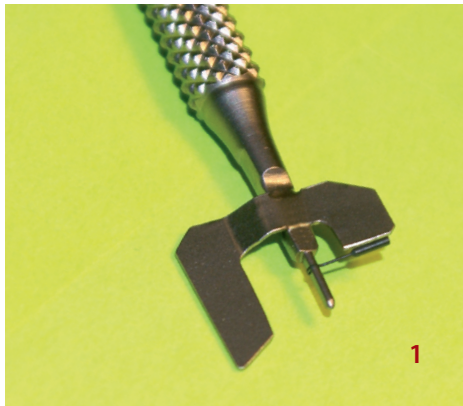


Designed by Dr. F. Beoni

Ancillary equipment for Nitinol Prosthesis

CODE SPL 03.47

Material:
Stainless Steel



Use

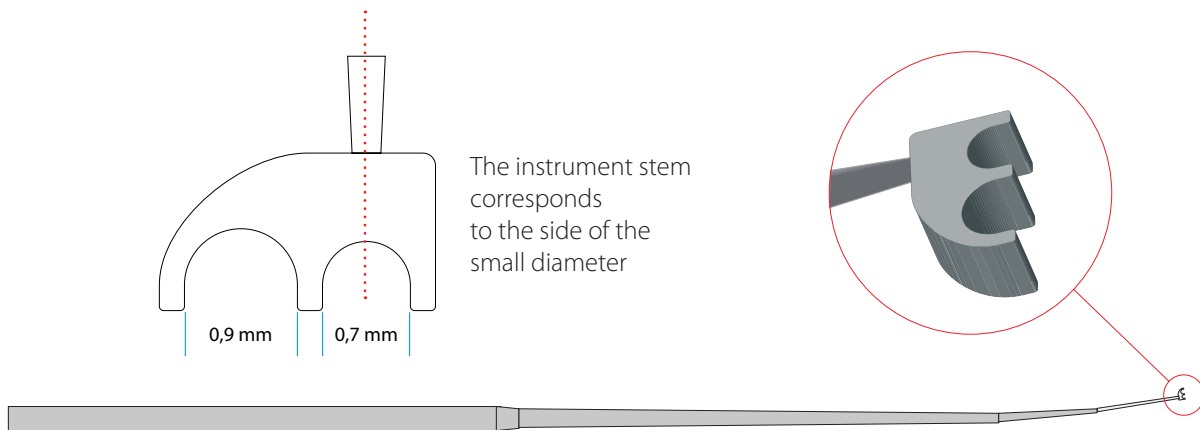
1) The hook of the piston is inserted on the stop pin of the instrument. If it is required that the prosthesis is in axial direction with the forceps, the stem of the prosthesis should be aligned with the alignment bar underneath.

2) If it is required that the piston stem is moved forward or backward by reference to the forceps' axis, the prosthesis' stem should be positioned forward or backward by reference to the alignment bar underneath

3) Place the forceps on the forceps' alignment bar and move forward till the stop pin.

4) Close the forceps' grasping tips and slip off the stop pin from the prosthesis' hook.

5) The Instrument Nurse will give the forceps with the inserted prosthesis to the surgeon, allowing him to keep watching the operating microscope.



Nitinol superelastic hook is available in 3 sizes



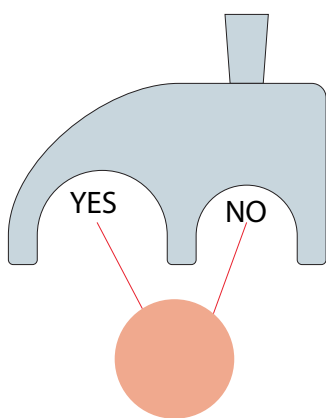
Standard NITINOL Hook:
0.7 mm < Anvil < 0.9 mm



Small NITINOL Hook:
Anvil < 0.7 mm
add "P" to the number code
for example: SPL 03.44.525P

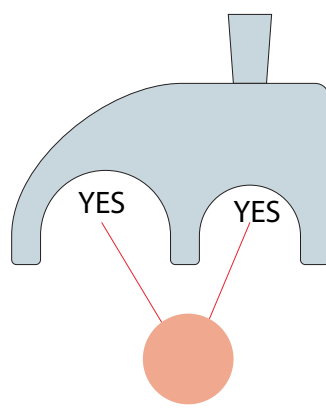


Large NITINOL Hook:
Anvil > 0.9 mm
add "G" to the number code
for example: SPL 03.44.525G



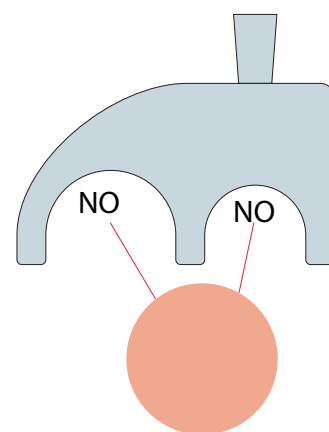
Standard Niti hook
ANVIL diameter: About 0,8 mm

ANVIL doesn't fit the small size and fits in the large one.



Small Niti hook
ANVIL diameter: About 0,7 mm

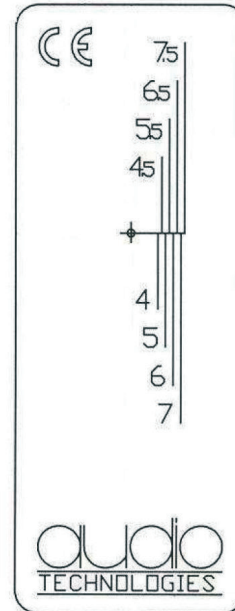
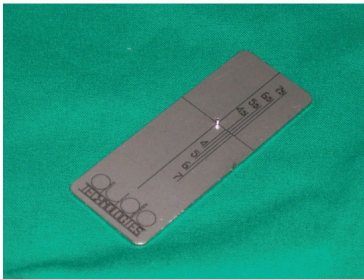
ANVIL fits both the large and the small size.



Large Niti hook
ANVIL diameter: About 0,9 mm

ANVIL doesn't fit the large nor the small size either.

After measuring the distance between incus and footplate by the microsurgical sliding gauge ref. 02.14 insert the prosthesis hook into the plate's pin keeping the prosthesis axis along the guideline, as showed in the picture. Cut the prosthesis in correspondance of the desired length along the reference guidelines by means of a lancet.



Warning
Prostheses have to be handled with care.
When cutting pay attention not to apply a force of traction suitable to disassembly the PTFE piston from the metallic stem. The prostheses are tested up to a 100 gr. force of traction.

