Work's protocol AcryRobotec® **Total Prosteses Cold curing printing technique**

Sterilize the impression in the laboratory with medical prescription and useful data. It is necessary for registration according to current regulations.

a) Draw up the processing sheet.
b) Establish the type of plaster recommended (type IV plaster or alternatively a good class III plaster).

0. Preparation of the supplied base to create the base of the model

a) Prepare the silicone boxing in two different thicknesses with a height of about 20 millimeters: one for smaller thicker models and one for larger thinner models, in order to reduce or increase the internal volume of the base. Trim the inside with a cutter (Operation only the first time for the entire duration of the boxing, if the silicone is worn out for use, repeat the operation if necessary).
b) Place a 15 mm metal washer to create the magnetic quick coupling, with the split bases for putting into the articulator and with the flask base, both equipped with a built-in magnet.
c) Mix the plaster under vacuum following the proportions and times indicated by the manufacturer. Traditionally pour the impression and use it as usual with an electric vibrator.
d) Invert the casting impression when the plaster istabilized on the base provided, taking care not to compress or deform the impression material, on the appropriate Split Cast of the AcryRobotec flask. The metal washer will be incorporate into the plaster creating the magnetic connection with the various bases of the system.

1. Model preparation

a) Squaring the model. (Possibly dry).
b) Create the model: minimum base **12-15 mm** high and a base in the perimeter edge **4-5 mm** wide. It is necessay to create a "stop" to the silicone, for sealing around the model, just the acrylics do not exit out.
c) Place the models in the articulator using the universal plates for all types of articulators on the market **.**This allows a quick connection with the articulator
d) Assemble the teeth and complete the wax-up of the total prosthesis.

2. Technique

Methods of working for total prosthesis cold curing technique by cold curing printing technique.

a) Suitable for any type of prosthesis
b) Thanks to the silicone counter mold, a duplicate can be ready for a second prosthesis.

3. Realization of the silicone counter mold on the assembly of the teeth in the mobile prosthesis base in wax or resin prosthesis for vases

a) Prepare 50 g A + B of 60 Shore microsil silicone.
b) Mix the silicone for 25 seconds, than adpt the silicone on the wax model by covering the teeth and collars.
c) Cover all the teeth well, keeping 2mm under the collar. Than, press the silicone evenly to avoid distortions.
d) Introduce the model with the silicone in the pressure cooker or in the automatic polymerizer without water and with the start temperature desactivated. Pressure 2.5 - 5 bar maximum! Working time: 5 - 6 minutes.
e) After curing put the model on the split of the flask base.
f) Check the height of the model so that the teeth do not protrude from the cover keeping a depth of 3-4mm. If the model is very high, replace the 20mm spacers in contact with the base in the two axes, insert, and screw the other spacers supplied 25mm. Since the flask is free from the front and rear of the axes and structures of the same, with a single size of AcryRobotec® we can create any type of prosthesis size. (Important advantage unlike other competing products in the market!)

4. Second step, to create the silicone counter mold for the total model

a) Prepare and mix about 180 g A + B of **microsil silicone 80 shore** .
b) Adapt the silicone in the model, remove the excesses, insert the cover in the two axes of the Acryrobotec® flask, press the silicone, adapt it, tighten the clamping screws, compress again the silicone that has come out laterally and above, fill the voids from the upper cover and around to the model.
c) The last operation is made very simple, as the flask is very open, superiorly in the horseshoe shape, laterally, frontally and posteriorly.
d) If the silicone is not sufficient, it can be knead and applied subsequently in the missing spaces. It is advantage of Cut the redundant silicone on the lid AcryRobotec compared to the similar systems competing in the market .
e) In this way, the silicone adaptation is obtained on the second mask and also a perfect sealing.
f) This phase must be carried out with the ulmost care in order to prevent the resin from leaking out during the injection phase.
g) Once hardened finished, unscrew the nuts, remove the flask cover from the two guide rods and remove the model from the silicone counter mold.

5. Preparation of the vent channels for the upper or lower for printing

a) Take the silicone counter mold out of the muffle cover
b) It is recommended to create the u-shaped vent channels with a scalpel in the silicone edge in contact with the plaster stop socket, about 6 (Six channels) 1 (one) at the height of the upper or lower central frenulum 2 (Two) lateral near the canines and 2 (Two) at the height of the upper retromolar tubers or the lower retromolar trigons.
c) In the lower part, also carry out 2 (Two) channels in the central lateral internal part and 1 (One) also located in the internal part in correspondence with the lower lingual frenulum (pinoc zone).
d) In this way the excess resin will flow freely without creating undesired excessive compressions with consequent chewing increases.
e) This creates the input and output channels for the printing acrylic resin.

6. Cleaning and degreasing the plaster model

a) Wash and degrease the model and the hooks, in case of skeletal prosthesis with steam or boiling water.
b) Immerse the model in water for 10 minutes at a temperature of apripproximately 45 ° C to hydrate. This step prevents that the plaster from absorbing monomer liquid of the resin when injected.
c) Help yourself with a basket that possibly preserves the position of the teeth, alternatively use the traditional method.
d) Steam or degrease with boiling water as usual.
e) Dry with a gentle jet of compressed air from the suitable handpiece.

7. Preparation of the AcryRobotec® flask for resin injection

a) Create the mechanical retentions, by making a low relief around the heel of the teeth with a diamond bur or simply removing the glazing of the resin teeth up to the collar.
b) Make in the teeth a concavity in the lower base with a resin cutter.
c) Reinsert the teeth into the silicone counter mold, respecting the position of the specific tooth-by-tooth housings.
d) Apply a layer of **microAcry Bond**.(Resin / Teeth Primer)
e) Remove the model from the water, with a brush pass a layer of **microSOL Plus** (Alginic insulator)
f) Soak again and drain immediately (This creates a more shiny layer of the surface)
g) Air dry the plaster model.
h) Insert the insulated model into the silicone counter mold after the above processes.
i) Insert the silicone counter mold and model in the cover, making it fit together perfectly.
j) Make sure that the suitable spacers are inserted in the 2 rods.
k) Insert the muffle cover with silicone counter mold and model into the two guide rods and slide it along the steel axes until the split of the plaster model matches the split of the magnetized base of the muffle.
l) Close with the cylindrical fixing screws of the flask.

8. Mixing the acrylic for printing microPRESS H

Mix the Powder (polymer) and Liquid (monomer) in the doses indicated for **microPRESS H-Tec** with a high charge of micro-pearls. (Cold curing resin)

a) For a medium-sized Total Upper or Lower prosthesis, mix about **20 g** of powder and **8 g** of liquid.
b) Put the required amount of liquid in the mixing cup, add the corresponding amount of powder. When dosing individually add the amount of powder needed to absorb the liquid.
c) Firsty, pour the powder gradually into the liquid and mix for **15 seconds**. Leave to rest for 1 minutes.
d) tAtention! The maturation and printing processing times vary according to the ambient temperature!

9. Printing procedure of the acrylics by Cold polymerization

a) Insert the muffle cover to the silicone counter mold and pour the acrylics, inserte the plaster model and press slowly to make the resin come out of the vent channels
b) g) Remove any excess resin with a spatula
c) Insert into the two guide rods and slide it along the steel axes until the split of the plaster model matches the split of the magnetized base of the muffle.
d) Close with the cylindrical fixing screws of the flask.
e) Remove excess resin from the vent channels
f) Important Let the resin **mature for 12-15** minutes before inserting the flask into the polymerizer.

10 Polimerization

a) **Important!** The muffle must be inserted with water at room temperature.
b) **Warning!** The resin must mature as indicated above for **2-3 minutes** before inserting into the polymerizer
c) The excess resin in the cup **must be Plastic phase**,
d) Follow the curing times recommended in the instructions for **microPRESS H-Tec** (**25**minutes at **45°)**
e) **Warning!** The pressure must be set with a range from **2bar** to **2.5** bar maximum.
f) After polymerization, allow to dissolve in water until the ambient temperature is reached.
g) Remove the two resin casting cones from the silicone counter mold . (At the jars of the casting cones, cut the silicone in the back of the counter mold up to the edge creating two grooves with adequate thickness to remove the pouring channels).
h) If you plan to make duplicates of the prosthesis in the future, safeguard the mould counter..
i) Remove the model from the silicone counter mold by instrument levering in the back
j) Proceed to repositioning in the articulator and finish with suitable cutters, polish according to the indications.
k) Before the delery of the prosthesis, soak in water for 24 hours for the release of the residual monomers as usual.

Material

					**Silicone I mold microsil a+b 60 Sh** **Silicone II mold microsil a+b 80 Sh**
Flask AcryRobotec	**Casting Base** **Articulator Base**	**microPRESS H-Tec** **Cold curing**	**Separaing Fluid microSOL Plus**	**Primer Tooth / Acrylics**	**Addition silicone for the mask-mold**