

The following weights are plated on the different types of frameworks (weight in g):

Type	5 µm	10 µm	15 µm	20 µm	25 µm	30 µm
Lingual bar without clasps	0,05	0,10	0,15	0,20	0,25	0,30
Lingual bar with clasps	0,09	0,18	0,27	0,36	0,45	0,54
Transversal connector without clasps	0,08	0,16	0,24	0,32	0,40	0,48
Transversal connector with clasps	0,11	0,22	0,33	0,44	0,55	0,66
Skeletal framework without clasps	0,11	0,22	0,33	0,44	0,55	0,66
Skeletal framework with clasps	0,15	0,30	0,45	0,60	0,75	0,90
Horseshoe plate	0,21	0,42	0,62	0,84	1,06	1,24
Full denture	0,29	0,58	0,87	1,16	1,45	1,74

Friction renewal of telescopic crowns

Note the general information on Solaris gold plating and restoring friction.

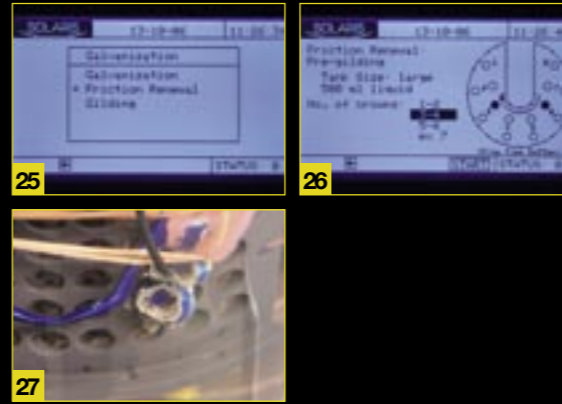
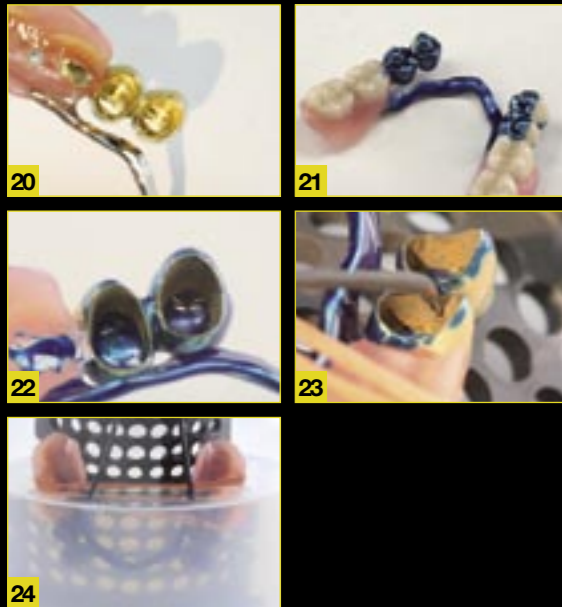
Preparation

After disinfection remove any plaque deposits on the inside of the secondary crowns mechanically. The crown margins of the inner surfaces to be restored should be covered with wax to protect them from damage by sandblasting. Sandblast the inner surfaces with 50 µm glass beads at a pressure of 1-2 bar (20). Then remove the wax and clean the inner surfaces of the crowns with a steam cleaner.

Cover the metal surfaces that are not to be gold plated and the inner occlusal surfaces of the crowns with a light-curing die spacer (e.g. Light spacer blue, Yeti) (21/22). Friction should be restored to approx. two-thirds of the inner surface. Then clamp the denture as close as possible to the bottom of the special Solaris cathode holder. Insert the cathode holder into the cathode block for easier handling. Check the available space in the large Solaris glass beaker. Adjust the position of the denture if necessary.

The thin cathode wires that are fed from the contact socket through the terminal block under spring tension to the denture provide the contact to the inner surfaces to be gold plated (23). The number of wires used depends on the number of crowns. Crowns that do not have a metal connection should have individual contact. The rigid cathode holder facilitates reliable, contact-free transfer of the denture to be gold plated between each subsequent stage. First clean the denture in the cathode holder using a warm soap solution in an ultrasonic unit for approx. 20 min. and then thoroughly rinse under running water (including the inner surfaces of the crown). Do not touch the surfaces to be gold plated after this stage. Pour Solaris Pre-Liquid into a large glass beaker. Degrease and activate the denture in the ultrasonic unit for a further 30 min. at a temperature of approx. 50 °C to 60 °C (24). Then thoroughly rinse the denture again under running water.

Important:
Adhere to the times given for cleaning and degreasing to ensure a bond to the gold layer.



Pre-gilding

Pre-gilding is completed in the left electroplating chamber of the Solaris unit at room temperature without stirring. Select friction renewal from the electroplating menu (25). The inner sockets 3 and 6 for inserting the special cathode holder are displayed in the next stage. Select the number of crowns to be restored (26).

Pour 500 ml Solaris Flash-Liquid into a large, clean, dry Solaris glass beaker and place it in the left electroplating chamber. Check that the sections to be gold plated are completely immersed; if not, add more Solaris Flash-Liquid to the beaker. The magnetic stirring bar is not required. Fill another glass beaker with clean water and place it in the right rinsing chamber. Pre-gilding commences automatically on pressing the Start key. Effective pre-gilding is indicated by effervescence on all the inner surfaces to be gold plated (27).

If there is no effervescence, check the contacts and spring tension.

After pre-gilding has been successfully completed, use the continue arrow to start a one-minute rinse cycle. Pour the Solaris Flash-Liquid back into its original bottle during this time. Rinse the glass beaker thoroughly under running water.

Friction renewal

The next display for setting the friction parameters appears automatically after the rinse cycle (28).

After feeding in the number and type of crowns and the required layer thickness, the selected parameters are shown in the next display as a check (29). Pour approx. 500 ml Solaris gold bath or supra gold bath that has been used only once into the beaker. Check that the inner surfaces to be gold plated are completely immersed; if not, add more gold bath. Insert the magnetic stirring bar, place the glass beaker into the left electroplating chamber and start the electroplating cycle. Gold plating is completed automatically in the same way as electroforming crowns. The current status appears on the display.

Important: Also change the rinsing water in the right chamber and rinse the glass beaker thoroughly under running water to avoid contamination.

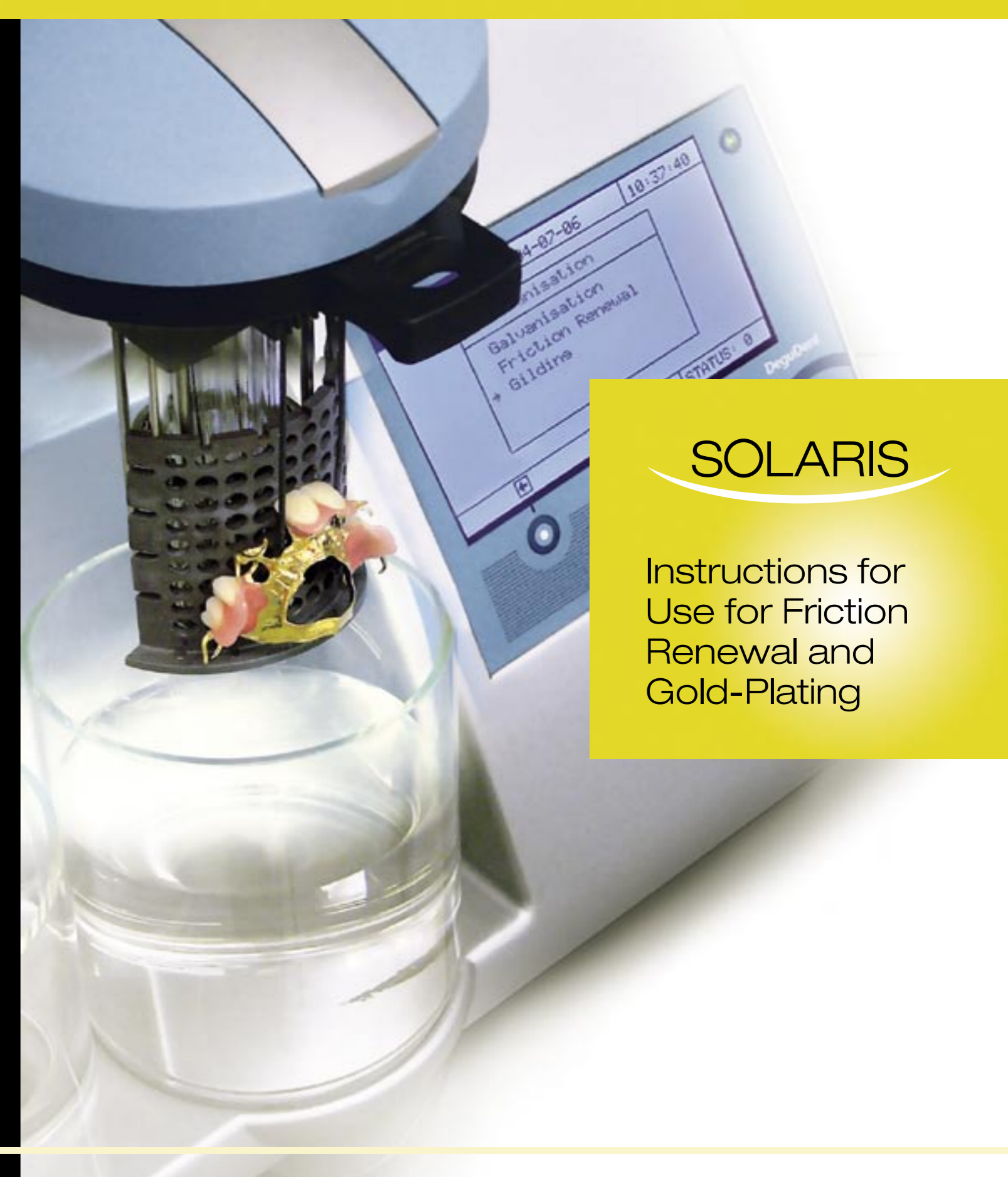
Note: Power is only supplied from socket 3, which is why the contact test is only displayed at this socket. Socket 6 is only used for inserting and stabilizing the cathode holder.

After friction has been restored, there is a further automatic rinse cycle.

The surfaces with friction renewal should have a high-lustre (30).



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SOLARIS

Instructions for
Use for Friction
Renewal and
Gold-Plating

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General information for friction renewal and gold-plating

Solaris units with a software version dated 02.10.00 or later can now also be used for gold-plating e.g. CrCo frameworks or friction renewal of telescopic crowns. The Solaris gold-plating set comprises the following components:

- 1) Solaris friction cathode holder
- 2) Solaris friction cathode wires
- 3) Solaris friction glass beakers (2 beakers)
- 4) Solaris Pre-Liquid (degreasing and activating solution)
- 5) Solaris Flash-Liquid (pre-gold plating bath)

Only Solaris gold-plating components should be used for gold plating in the Solaris unit. Other manufacturers' products are not compatible with the Solaris unit and may damage the unit.

Note:
Adhere to the instructions on the Solaris Pre-Liquid and Solaris Flash-Liquid safety data sheets. After use, return both liquids to their original containers and store sealed. Rinse the glass beakers thoroughly under running water.

Both liquids can be used several times: Solaris Pre-Liquid approx. 5–10 times or until there is visible contamination or reduced degreasing power; Solaris Flash-Liquid approx. 20–30 times or until there is a less pronounced colour change during pre-gold plating. The liquids can only be used several times if they are stored protected from light in their original containers after use. Avoid contaminating Solaris Flash-Liquid with Solaris gold baths.

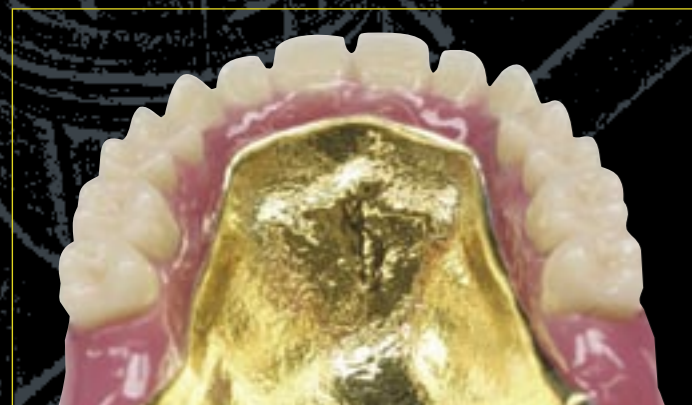
Surfaces that are to be gold plated should be cleaned, degreased and activated outside the Solaris unit. Pre-gold plating, rinsing with water and also electroplating the actual gold layer are completed in the Solaris unit, with the menu taking the operator through the stages in sequence.

The new Solaris gold bath, supra, is used for electroplating the gold layer when gold plating CrCo components. The gold bath can be used several times until there is no more usable gold or it is beyond its use-by-date. After the gold bath has been used once for gold plating, the gold can be replaced with a suitable additive and the solution can then be used for standard electroforming.

If the Solaris gold bath has been used once but not recycled it can be used for electroforming the gold layer to restore friction. The residual gold content in the bath is adequate for restoring friction. An activator does not have to be added. After using the gold bath to restore friction, it is then recycled in the usual way.

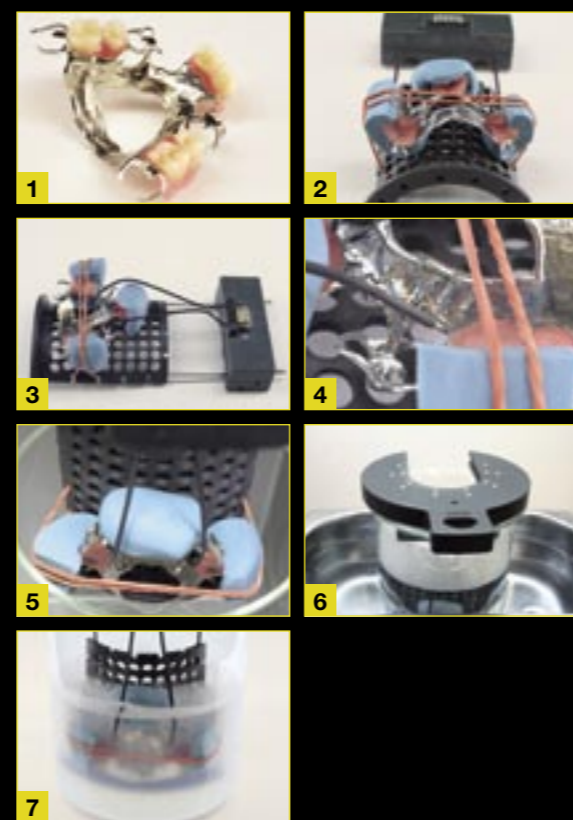
We recommend a layer thickness of 10–20 µm for gold plating. The time required for pre-gold plating is between 1 and 10 min, depending on the size of the denture. The time required for electroplating the actual gold layer is approx. 1.5 h for 20 µm, including heating-up time

Important:
Careful preconditioning of the material to be plated is crucial for successful restoration of friction and gold plating. Degreasing is very important, particularly with CrCo components after polishing. Careful preconditioning is essential in ensuring a permanent bond. The time between degreasing, pre-gold plating and actual gold plating should be kept as short as possible to prevent surface passivation (contact with atmospheric oxygen).



Gold plating CrCo frameworks

Note the general information on gold plating and restoring friction with Solaris. Gold plating single clasps: When gold plating clasps, select the relevant settings in the restore friction menu.



Preparation

Disinfect the denture and remove any plaque deposits mechanically (1). Cover metal surfaces that are not to be gold plated with a light-curing die spacer (e.g. Light spacer blue, Yeti). Then secure the denture as close as possible to the bottom of the special Solaris friction cathode holder, e.g. with rubber bands. The surfaces to be gold plated should be out of contact; if necessary use silicone putty (e.g. Alphasil Technik, Omicron) as a spacer (2). The thin cathode wires that are fed from the contact socket through the terminal block under spring tension to the denture provide the contact to the surfaces to be gold plated (3). The number of cathode wires inserted depends on the size of the denture (4). Insert the cathode holder into the cathode block for easier handling. Check the available space in the large Solaris glass beaker (5). Adjust the position of the denture if necessary. Do not touch the surfaces to be gold plated after this stage.

The rigid cathode holder facilitates reliable, contact-free transfer of the denture to be gold plated between each subsequent stage.

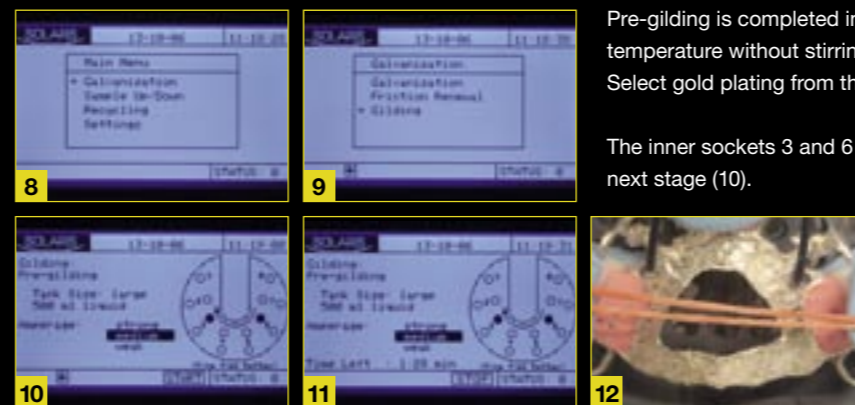
First thoroughly clean the denture in the cathode holder using a warm soap solution in an ultrasonic unit for approx. 20 min. (6) and then rinse under running water. Pour Solaris Pre-Liquid into a large glass beaker. Degrease and activate the denture in the ultrasonic unit for a further 30 min. at a temperature of approx. 50 °C to 60 °C (7). Then thoroughly rinse the denture again under running water.

Important:
Adhere to the times given for cleaning and degreasing to ensure a bond to the gold layer. If degreasing has been effective, the film of water does not ball or break up. If this does happen, repeat the degreasing stage with Solaris Pre-Liquid.

Pre-gilding

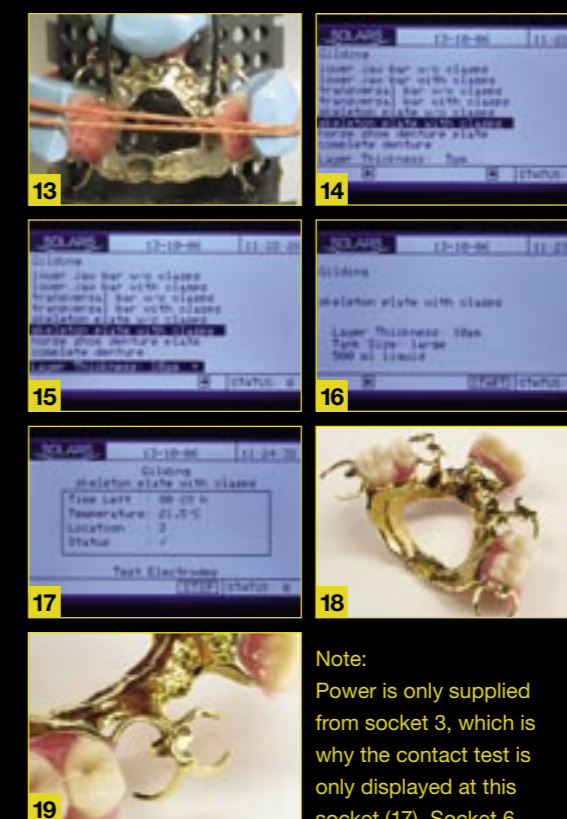
Pre-gilding is completed in the left electroplating chamber of the Solaris unit at room temperature without stirring. Select gold plating from the electroplating menu (8) (9).

The inner sockets 3 and 6 for inserting the special cathode holder are displayed in the next stage (10).



Examples for pre-gilding when gold plating denture frameworks

Type of CrCo framework	Recommended current strength
Small to medium lingual bars	low
Larger lingual bars, Transversal connectors, skeleton frameworks	mittel
Horseshoe plates, full dentures	high



Note:
Power is only supplied from socket 3, which is why the contact test is only displayed at this socket (17). Socket 6 is only used for inserting and stabilizing the cathode holder.

Pour 500 ml Solaris Flash-Liquid into a large, clean, dry Solaris glass beaker and place it in the left electroplating chamber. Check that the sections to be gold plated are completely immersed; if not, add more Solaris Flash-Liquid to the beaker.

The magnetic stirring bar is not required. Fill another large glass beaker with clean water and place it in the right rinsing chamber.

Select high, medium or low for the current strength depending on the size of the denture (11).

Gold plating commences automatically after the Start key is pressed. Effective pre-gilding is indicated by effervescence over the entire surface of the section to be gold plated (12) and with silver-coloured denture frameworks by a change in colour to high-lustre gold (13).

If there is no effervescence or it is only visible at the contact wire, check the contact and spring tension at the framework. If there is no visible change in colour, repeat the pre-gilding process until the required result is attained or, if necessary, select the next higher level of current or use new Solaris Flash-Liquid.

After pre-gilding has been successfully completed, use the continue arrow to start a one-minute rinse cycle. Pour the Solaris Flash-Liquid back into its original bottle during this time. Rinse the glass beaker thoroughly under running water.

Gold plating

The display for setting the gold plating parameters appears automatically after the rinse cycle (14) (15).

After feeding in the type of CrCo framework and the required layer thickness, the selected parameters are shown in the next display as a check (16). Pour 500 ml new supra gold bath into the large Solaris glass beaker. Check that the sections to be gold plated are fully immersed; if not, add more Solaris supra gold bath until they are fully covered. Insert the magnetic stirring bar, place the glass beaker in the left electroplating chamber and activate electroplating. Gold plating is completed automatically in the same way as electroforming crowns (17).

Important:
Also change the rinsing water in the right chamber and rinse the glass beaker thoroughly under running water to avoid contamination.

After gold plating has been completed there is a further automatic rinse cycle. The gold plating should have a high lustre (18) (19).

WARNING: Please refer to the directions for use regarding contraindications, side effects, and interactions when using Solaris Flash-Liquid.

Warnings: May cause cancer by inhalation and skin. Hydrocyanic acid may cause all levels of intoxication. Protective measures: Avoid aerosol and steam formation (use neither steam cleaners or pressurized air for cleaning and/or drying). Use your personal protective gear (protective goggles, gloves). For other important information on protective measures, consult the Material Safety Data Sheet (MSDS).