



Instructions for
Superstructures

SOLARIS

Electroforming superstructures

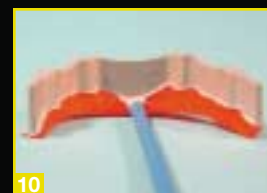
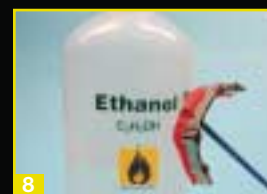
The DeguDent Solaris galvano system can be used for electroforming bar attachments with a surface area of up to 2,200 mm² for one bar and for two bars with a surface area of 1,100 mm² each in a single process. The recommended layer thickness for bar superstructures is 300 µm. The electroforming process for bar superstructures in the Solaris unit is performed at positions 3 and 6. For superstructures, enter S1 or S2 in the *Number of electrodes* field.

S1 Electroforming one bar with a surface area of up to 2,200 mm². For bars with a surface area of up to 1,100 mm², contact is made with only one cathode rod, at position 3. If a surface area of 1,100 mm² is exceeded, contact must be made with two cathode rods, at positions 3 and 6.

S2 Electroforming two bars with a surface area of up to 1,100 mm² each. Contact is made at positions 3 and 6.

Note

It is particularly important to determine the exact size of the bar. If the size of the surface area is overestimated, rough surfaces or local porosity may be the result (excessive current per unit of surface area).



Procedure

Bar attachments can be electroformed directly or indirectly.

Direct method

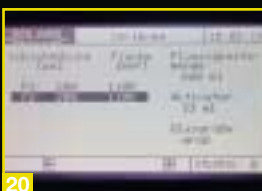
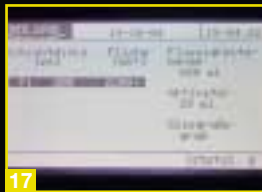
“Direct method” means electroforming by direct deposition on the milled bar. Care must be taken to ensure that the bar is optimally milled, i. e. the milling surfaces must be exactly parallel or conical (as the case may be).

- 1 Create a base in pattern resin.
- 2 Reduce the resin model to the point where the flow of liquid in the beaker is unimpeded.
- 3 Thin out toward the rear.
- 4 Drill a hole through the middle of the bar to attach the cathode.
- 5 Slightly shorten the shrink tube (use the blue cathode)

Note

Use only blue cathodes – the deeper into the bath, the better. Which cathode rod is to be selected will depend on the geometry of the bar.

- 6 Guide the cathode completely to the hole ...
- 7 ... and attach with adhesive (pattern resin). Make sure that the adhesive does not form an insulating layer!
- 8 Degrease and steam-clean the entire setup before applying the conductive silver varnish.
- 9 Apply the conductive silver varnish and ...
- 10 ... make sure that there are two points of contact, one in the front and one in the rear.
Allow the conductive silver varnish to dry for at least 30 minutes (60 minutes for zirconia)!
Blow-dry if required.
- 11 Position the bar so it opens toward the glass (outward).
- 12 The complete electroformed bar.
- 13 Remove excessive material with a rubber cup or wheel.
- 14 When using two cathode rods for one superstructure, the model must be designed accordingly. The two cathode rods are placed in the cathode slots at the respective positions, with the model adapted to fit.



- 15 The structure must not be placed below the anode basket, as this would block the magnetic stirrer. Use the short cathode rods if necessary.
- 16 Recent software versions allow you to choose between processing one superstructure or two superstructures (software version 02.07.00 or later)
- 17 If one superstructure is selected, its surface area may be up to 2,200 mm².
- 18 Superstructures whose surface area exceeds 1,100 mm² are electroformed using two cathode rods.
- 19 Superstructures up to 1,100 mm² are electroformed using only one cathode rod.
- 20 If two superstructures are selected, each of them may be up to 1,100 mm² in surface area.
- 21 In this case, the software will indicate the two positions to use.

Finished restoration



Indirect method

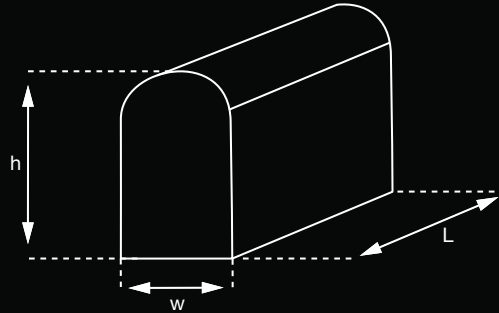
- Mill, duplicate and pour the bar (in acrylic or stone)
- Caution** With large stone models, there is a fracture risk when drilling a hole through the model. If the bar is very delicate, extend the silver varnish to the opposite side and cover with Cergo[®] die spacer (transparent).
- Proceed as for the direct method.**

Additional notes

- Follow the Instructions for Use for the Solaris unit.
- If a large beaker is used and the ends of large bars are not completely submerged in the gold bath, use a small beaker and inner position.

Calculating the sizes/surface areas of superstructures

The DeguDent Solaris galvano system can be used for electroforming bar attachments with a surface area of up to 2,200 mm² for one bar or for two bars with a surface area of 1,100 mm² each in a single process. The recommended layer thickness for bar superstructures is 300 µm.



Calculation examples for bar attachments

Formula: Surface A = (width x length) + 2 x (height x length)

Example:

2 bar abutments (object types 4 and 5) plus bar attachment (length, 25 mm; height, 4 mm; width, 3 mm)

Approximations:

Object type # 1: 50 mm²

Object type # 2: 65 mm²

Object type # 3: 90 mm²

Object type # 4: 115 mm²

Object type # 5: 150 mm²

Object type # 6: 200 mm²

Object type # 7: 265 mm²

Object type # 8: 300 mm²

Calculation:

2 bar abutments: 115 mm² + 150 mm² = 265 mm²

Bar attachment: (3 mm x 25 mm) + 2 x (4 mm x 25 mm) = 275 mm²

Total area: 265 mm² + 275 mm² = 540 mm²

Adverse effects: Reactions that may occur are allergic reactions against metals contained in the alloy or paraesthesia caused by electrochemical reactions. Systemic side effects caused by metals contained in the alloy have been reported in isolated cases.

Interactions: Avoid occlusal and proximal contacts of different alloy types.

Contraindications: Do not use in known insensitivity to one or several metals contained in the alloy. For dental use only.