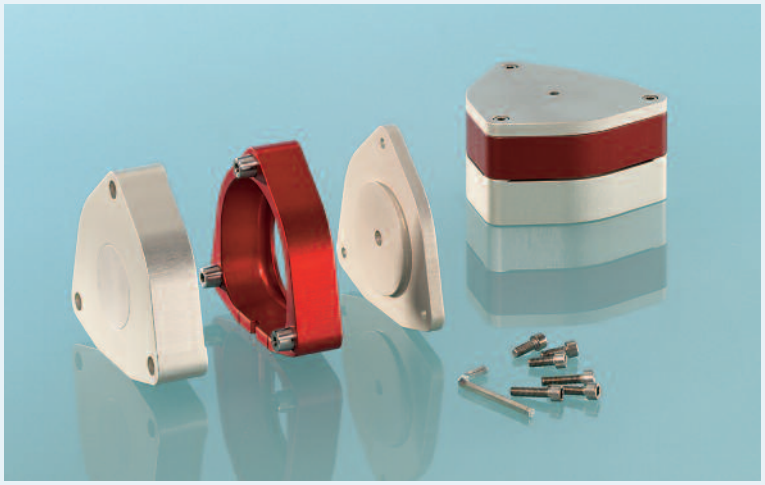
Swiss Jet

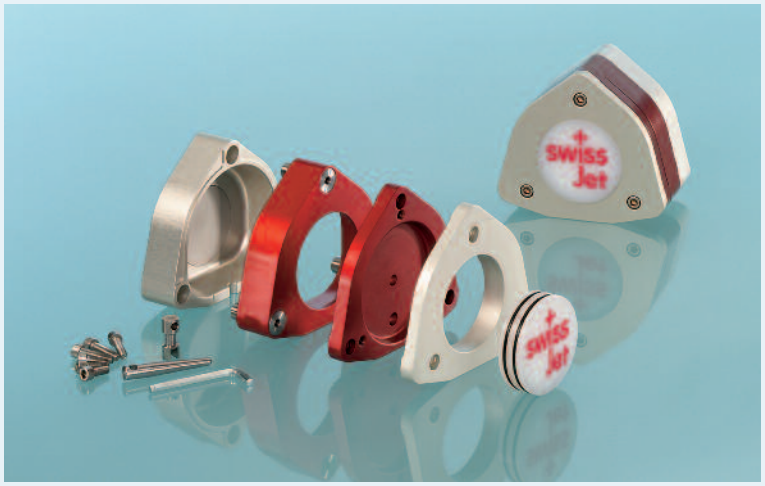
The All-in-One Flask

MERZ DENTAL

Inject and Press

CONTENTS





"Swiss Jet convinces by simple operation and processing of hot-curing and cold-curing polymers with the highest compression and the lowest bite raising."

MDT Max Bosshart, Einsiedeln/Switzerland

Swiss Jet - The All-in-One-Flask
Inject und Press

- No need for additional installations, hydraulic press sufficient
- For heat-curing polymers (e.g. Promolux®)
- For cold-curing polymers (e.g. Weropress®)
- For injecting vinyl resins such as Luxene®, for example
- Optimum height-width-depth relationship due to triangular form
- Extremely wide and high models are also embedded without problem
- Optimum compression of the resin using 100 bar = 40 kN pressure
- Precise closing
- Corrosion resistant

The Swiss Jet flask for the injection and tamping-pressing processes is an allrounder. The corrosion resistant flasks, which close precisely due to the cone fit and which are designed to withstand the highest continuous stresses, are easy to handle and do not require any additional installations such as compressed air and a special water connection. The use of both heat-curing polymers (such as Promolux®) or cold-curing polymers (such as Weropress®) is equally possible. However, the Swiss Jet flasks can also be used to process vinyl plastics (such as Luxene®). This makes the user independent of system providers. Neither cartridge waste and residue nor other costly process-conditioned waste such as sealing rings and injection elements accumulate.

The triangular form of the Swiss Jet flasks offer an optimum height-width-depth relationship so that very wide and high models with protruding functional ridges can also be embedded without problems. In contrast to common metal flasks, no bracket is necessary for Swiss Jet.
The injector is locked in the press under pressure; this ensures that the pressure is maintained in the flask even after removal from the hydraulic press. In addition, the conical fasteners substantially reduce deformations and imperfections. At a pressure of more than 100 bar (equivalent to approximately 40 kN) the resin is optimally compressed and dorsal fissure formation is as good as eliminated. No retainer is necessary for the tamp-press process.

Promolux®

Methyl methacrylate-based heat-curing resin is easily processed for fabricating total prostheses

Advantages

- simple dosage and processing
- high load capacity
- easy to polish
- high final hardness
- color stable

Application areas

- total prosthesis
- hybrid denture / cover denture
- rebasements / base fillings
- Track production

Weropress®

Methyl methacrylate-based cold-curing polymer is easily processed for universal application in partial and total resin prostheses

Advantages

- simple dosage and processing
- high transversal strength
- easy to polish
- allows for spaces running underneath such as distinct tubers without breakage during deflasking
- color stable

Application areas

- total prosthesis in the injection, tamping-pressing and casting processes
- completion of combination dental prosthesis
- fastening of teeth on model casting saddles
- rebasements / base fillings
- repairs
- enhancements
- dental splints / track production

Swiss Jet

MERZ DENTAL

Swiss Jet - Inject and Press
Application in Overview

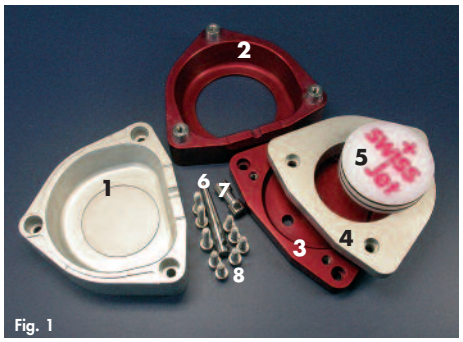


Fig. 1

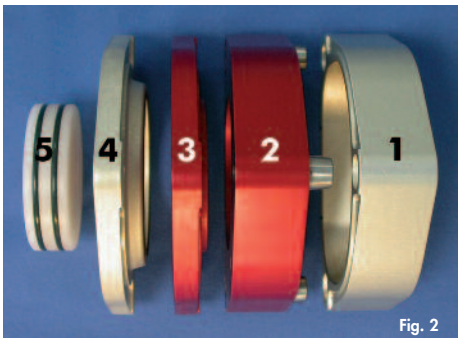
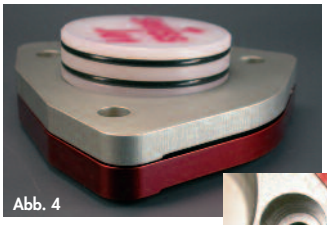


Fig. 2

The parts of the Swiss Jet injection flask
1. Flask bottom part with bottom of the unit and cone admission
2. Flask upper part guidance cones
3. Injector base
4. Injection cylinder with sealing ring
5. Injection piston with sealing rings
6. Channel bolts
7. Turning bolt
8. Allen screws


Fig. 3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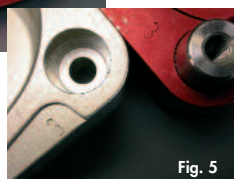
Fig. 5

The flask with the precise conical guides (Fig. 3) and the injector part with the piston (Fig. 4). Numbers are stamped into the flask halves (Fig. 5), in order to prevent mismatching. Before use, coat the flask with a thin layer of Vaseline.


Fig. 6


Fig. 7

Insulate the model before imbedding (Fig. 6). A silicone sleeve can be prepared (Fig. 7).

Tip: Fabricate a pre-impression using TS 5000 and refine it using dental silicone. Once the silicone has cured, trim the edge in order to ensure satisfactory retention. Expose the incisal edges and the cusp tips (Fig. 7).


Fig. 8


Fig. 9

Approximately 300 g of plaster are required for imbedding. Install the turn-type lock into the still plastic plaster (Fig. 8). The turn-type lock is exposed on the front aspect. The cylindrical surfaced remain in plaster up to the equator. Neck of the turn-type lock lies horizontally on the flask and the orifice is turned vertically upward (Fig. 9).

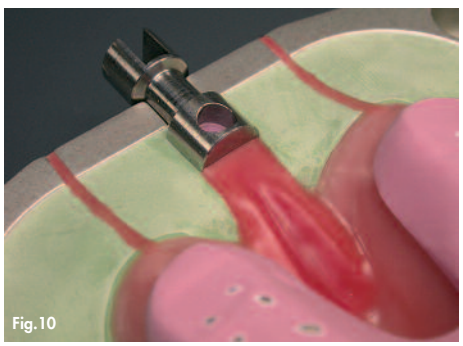
Fig.10

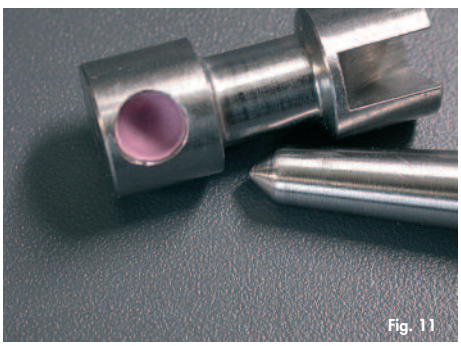
Fig. 11

Install the injection channel with wax. The wax reaches up to the equator of the turn-type lock. Install approximately 2-mm wide ventilation channels (Fig. 10).

Tip: Place some wax or silicone in the turn-type lock and insert into the channel bolt. When this is done, no plaster will intrude into the orifice when the plaster counterpart is created (Fig. 11).

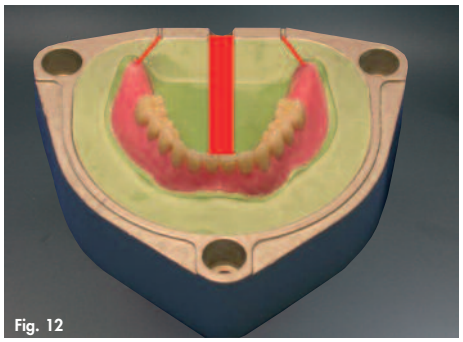
Fig. 12

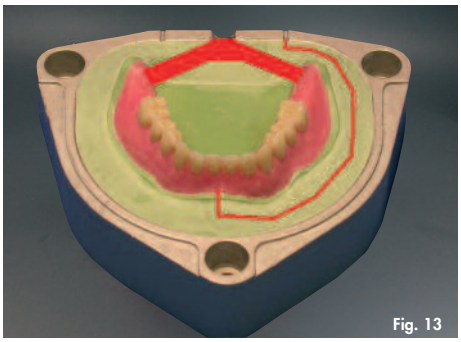
Fig. 13

In the **heat**-curing technique (Fig. 12) provide the injection channels for mandibular prosthesis with an injection channel in the sublingual region. Place the ventilation at the trigones.

In the **cold**-curing technique (Fig. 13) provide the injection channels for mandibular prostheses with two injection channels at the trigones. Place the ventilation in the front.

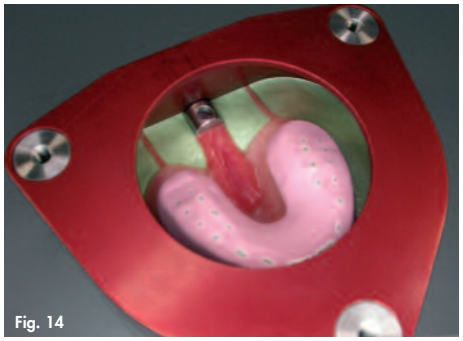
Fig. 14

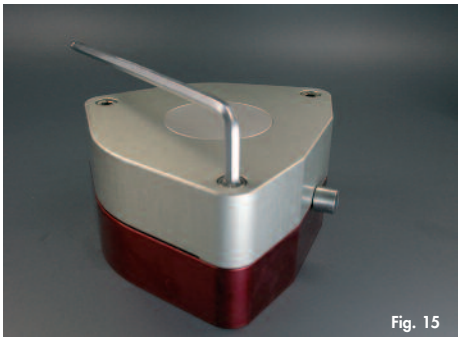
Fig. 15

Insulate the plaster parts with alginate isolation such as PremEco® Line Alginate isolation, for example.
Assemble the flask sections and secure using the three long screws.

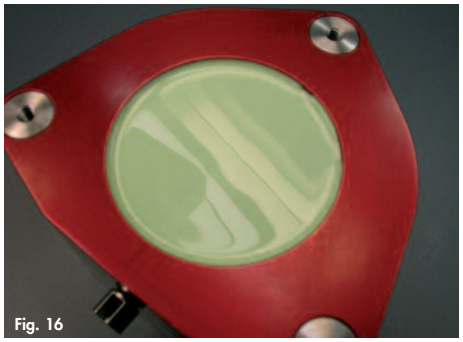
Fig. 16

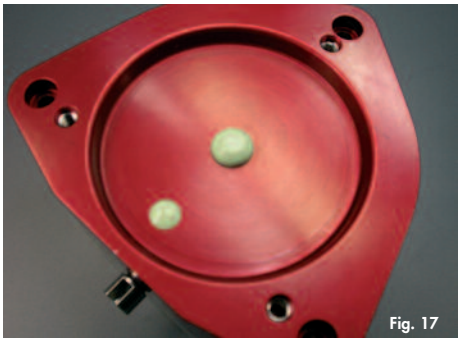
Fig. 17

Fill the flask with plaster (approximately 350 g), mount the injector base and then secure with screws (Fig. 16, 17).


Fig. 18


Fig. 19

Install the channel bolts in the fluid plaster. It enters the orifice of the turn-type lock and remains there until the plaster sets (Fig. 18).
The channel bolt is then removed with a rotary movement (Fig. 19).


Fig. 20

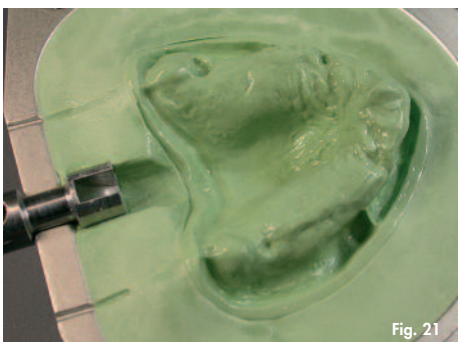
Fig. 21

Remove the three long screws and place the flask in boiling water for five minutes. Open the flask and boil out the wax (Fig. 20).
Treat the plaster parts with alginate isolation. Place the turn-type lock so that the orifice is positioned externally and points vertically upward (Fig. 21).

Swiss Jet - Inject and Press
Application in Overview

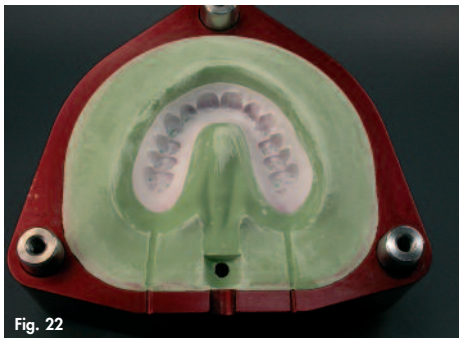
Fig. 22


Fig. 23

Remove the teeth from the plastic mould (Fig. 22), isolate the counter and replace the a roughened teeth (Fig. 23).


Fig. 24

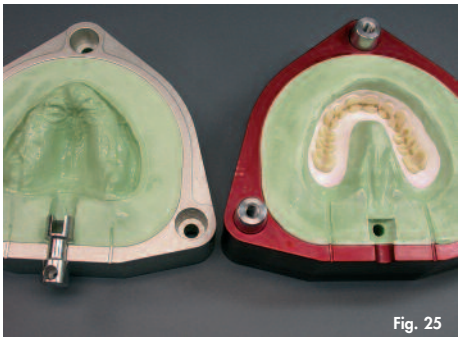
Fig. 25

Tip: Provide the teeth with slots and then roughen with sandpaper (Fig. 24). The prepped flask parts with turn-type locks in the opened position (Fig. 25).

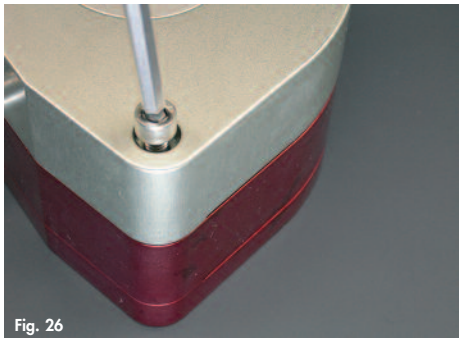
Fig. 26

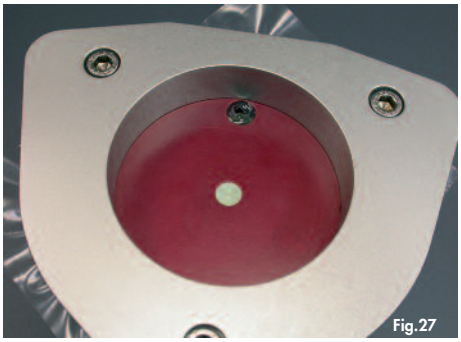
Fig.27

Assemble the flask and connect using the long screws (Fig. 26). Place a thin PE film on the injector base, mount the injection cylinder and secure with screws (Fig. 27).

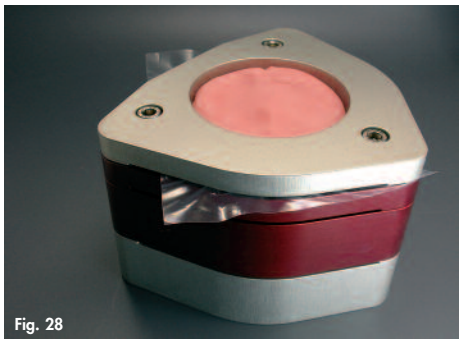
Fig. 28

Fig. 29

Almost any dental resin can be processed in the Swiss Jet flask. Please comply with the relevant manufacture's recommendations but in particular as they relate to: Mixing ratio, swell time, injection time, injection duration and polymerization conditions. The corresponding resin mass is added to the cylinder (Fig. 28) and the piston mounted (Fig.29). The injection process then starts under the hydraulic press..

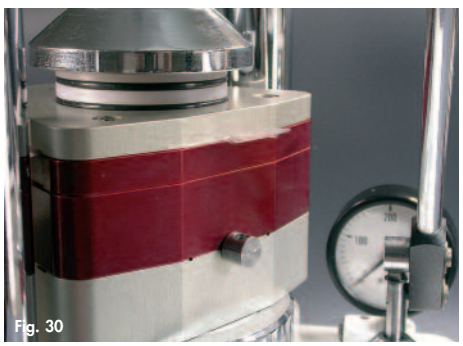
Fig. 30

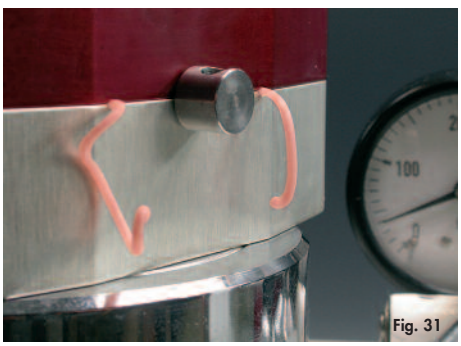
Fig. 31

Load the flask centrally in the press (Fig. 30) until resin extrudes from the vent channels (Fig. 31).


Fig. 32

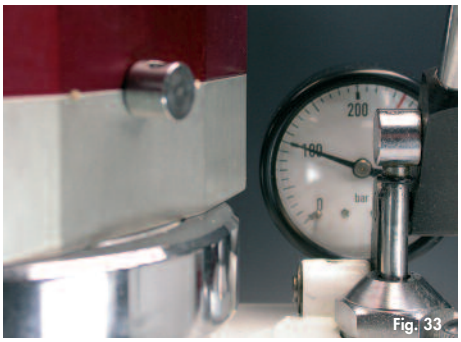
Fig. 33

Using a wooden toothpick, close the vent channel and with a light tap with the mallet secure it (Fig. 32). Slowly increase the pressure to 100 bar (approx. 40 kN) (Fig. 33).

Cold-curing polymers are maintained under uniform pressure for 3-5 minutes. The ideal point in time for closing the injection channel has been reached when a retained bit of resin begins to polymerize. Heat-curing polymers should be left under uniform pressure for at least 30 minutes up to two hours.

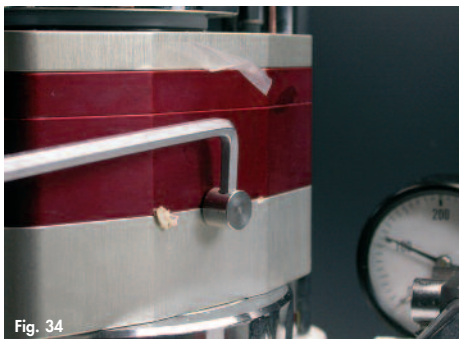
Fig. 34

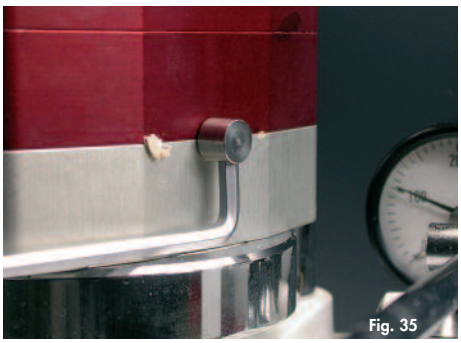
Fig. 35

After completion of the injection phase, close the turn-type lock from the outside by a 180°- turn using an Allen key (Fig. 34, 35). The pressure inside the flask is maintained.

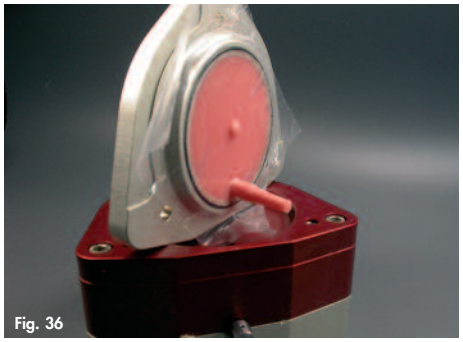
Fig. 36


Fig. 37

Remove the injection cylinder and remove resin residues (Fig. 36).

Cold-curing polymers can be removed from the flask after 20 minutes.

For **heat**-curing polymers we recommend: Placing in cold water and heating to 70° C. Allow to stand at 70° C for 30 to 60 minutes and then boil for 30 minutes. Allow the flask to cool slowly in a water bath (Fig. 37).

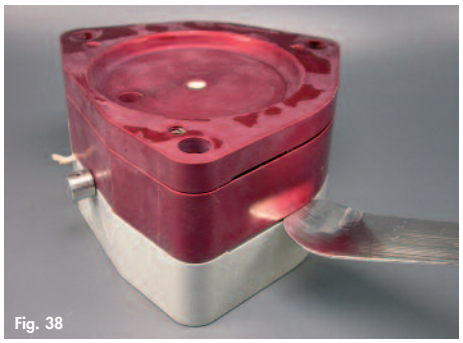
Fig. 38

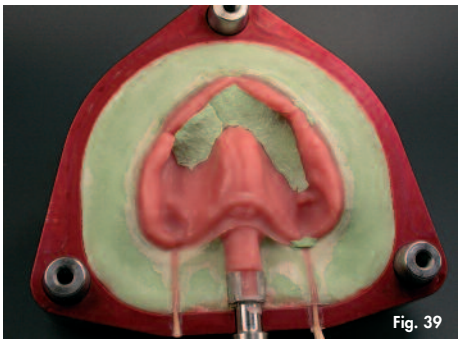
Fig. 39

Remove the screws and carefully open the flask with the aid of a plaster spatula (Fig. 38, 39). Loosen plaster parts using a plastic mallet.

Swiss Jet - Inject and Press
Application in Overview


Fig. 40


Fig. 41

The deflasked and polished prosthesis. Here heat-curing Promulux® was processed in the C34 shade (Fig. 40, 41).

Swiss Jet - Inject and **Press**
Application in Overview

Fig. 1

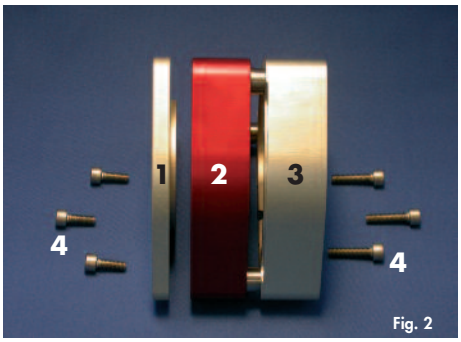

Fig. 2

Component parts of the Swiss Jet Tamp-Press Flask:
1. Flask bottom with base and conical receptacle
2. Flask top with register cones
3. Flask cover
4. Hexagonal socket-head screws
5. Hexagon socket key

Flask Assembly:
The longer screws connect the top part of the flask and the bottom part of the flask. This eliminates the need for a closing clamp. The short screws secure the flask cover. Before use, lubricate the flask with a thin layer grease.

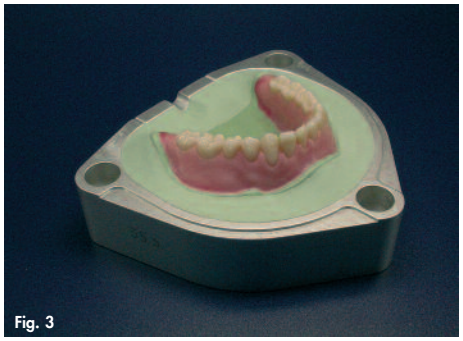
Fig. 3


Fig. 4

Isolate the model before imbedding. Approximately 300 g of plaster are required for imbedding. A silicone sleeve can be prepared.

Tip: Fabricate a pre-impression using TS 5000 and refine it using dental silicone. Once the silicone has cured, trim the edge in order to ensure satisfactory retention. Expose the incisal edges and the cusp tips.


Fig. 5

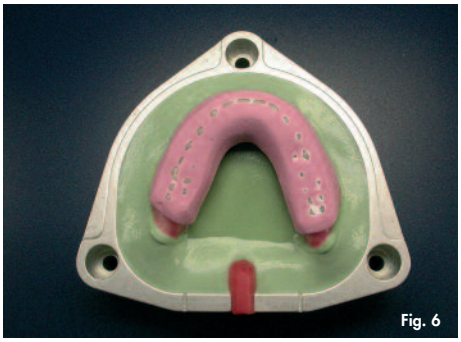
Fig. 6

Install a wax roll for closing the orifice (Fig. 5). This opening is required for the channel system (see Fig. 15 and 17). Isolate the plaster parts with alginate isolation such asPremEco® Line Alginate isolation, for example (Fig. 6).


Fig. 7

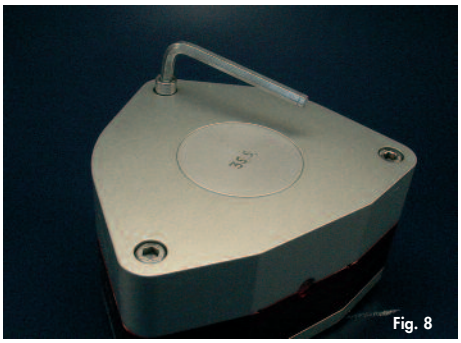
Fig. 8

Assemble the flask parts (Fig. 7) and connect using the three long screws. (Fig. 8).

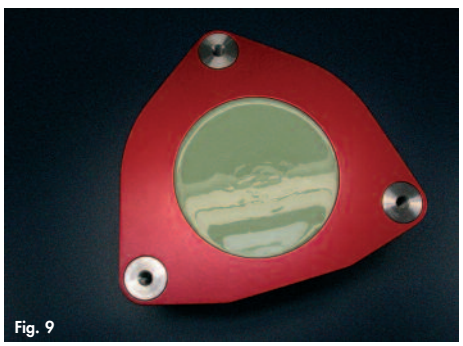
Fig. 9

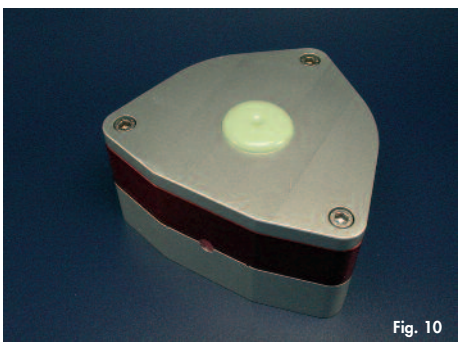
Fig. 10

Fill the flask with approximately 350 g of plaster (Fig. 9), mount the flask cover and secure with the screws (Fig. 10).

Swiss Jet - Inject and **Press**
Application in Overview

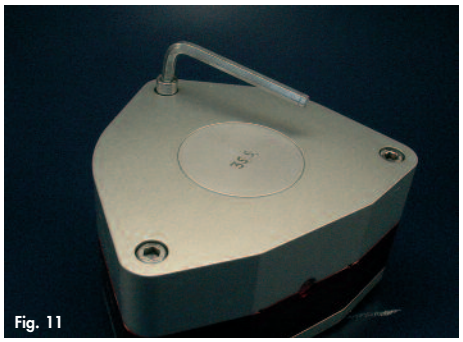
Fig. 11

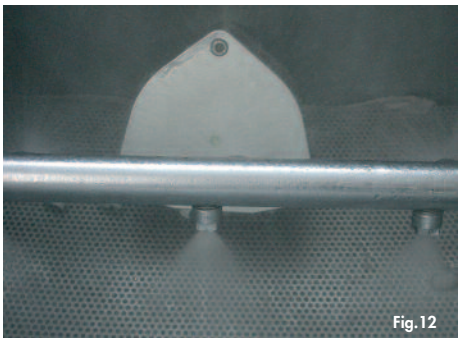
Fig.12

Once the plaster has set, remove all three long screws (Fig. 11) and place the flask for 5 minutes in boiling water or in the boil-out unit (Fig. 12).
Then open the flask and boil out the wax.

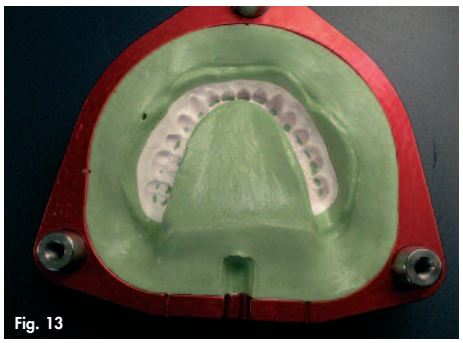
Fig. 13


Fig. 14

Remove the teeth from the plaster counter (Fig. 13). Isolate the counter and replace the roughed teeth (Fig. 14).


Fig. 15

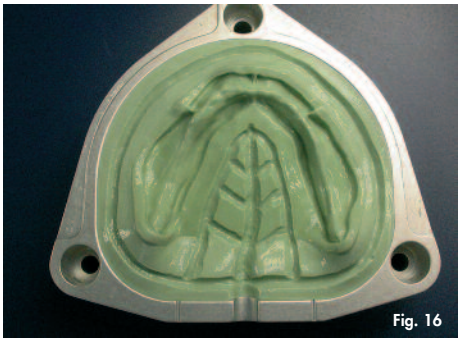
Fig. 16

Clean and isolate the plaster parts (Fig. 16).

Tip: In order to move excess resin from the flask a channel system can be installed using a plaster burr (Fig. 15, 17).

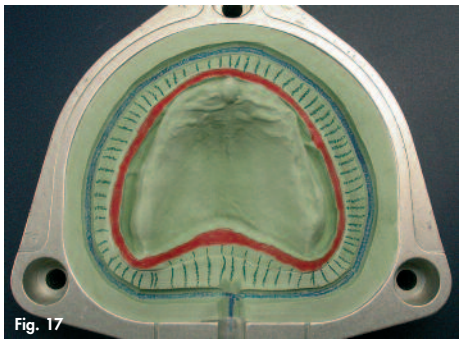
Fig. 17


Fig. 18

Maxillary preparation with channel system (Fig. 17, 18).

Treat the plaster parts with alginate isolation (Fig. 18).

Fig. 19


Fig. 20

Weigh out the resin according to the manufacturer's recommendations; here the **heat**-curing polymer Promulux® is being used (Fig. 19). Mix the material well using a spatula and allow it to swell for at least 10 minutes. **Cold**curing polymers are also appropriate. At all events, comply with the processing instructions relevant to the resin to be processed.

Prepare the flask parts for the tamp-press process (Fig. 20).

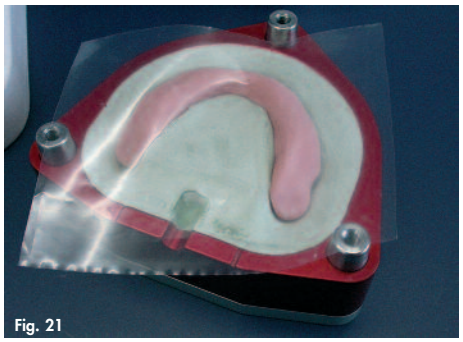
Fig. 21

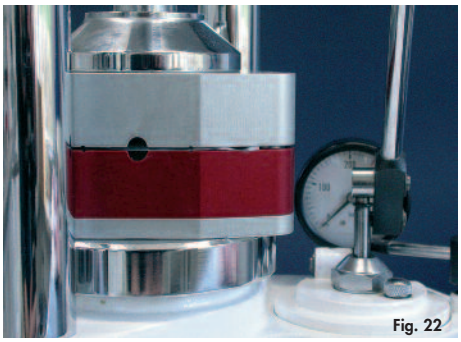
Fig. 22

Once the resin has been stirred to a paste - here a **heat**-curing polymer is being used - install it and place a PE film on top of it as a partition for the intermediate pressing. Close the flask under slight pressure and install it centered in the hydraulic press (Fig. 22). Intermediate pressing is omitted when using **cold**-curing polymers.


Fig. 23

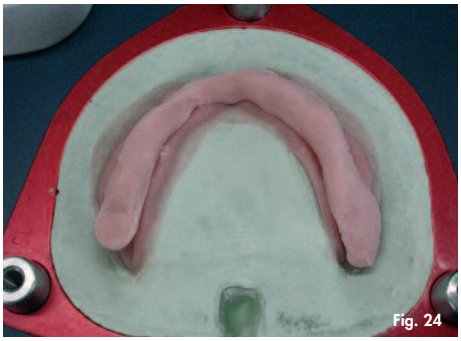
Fig. 24

Re-open the flask halves after the preliminary pressing (Fig. 23) and remove the compression lug.
Re-fill new material (Fig. 24) and re-close the flask.


Fig. 25

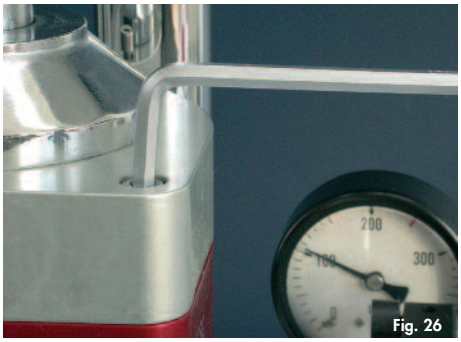
Fig. 26

Increase the pressure slowly to 100 bar (40 kN). Maintain the pressure for at least 30 minutes. Then, under pressure, screw the flask into the hydraulic press (Fig. 26) and polymerize the resin.
When using **cold**-curing polymers deflasking can be done after 30 minutes under pressure.

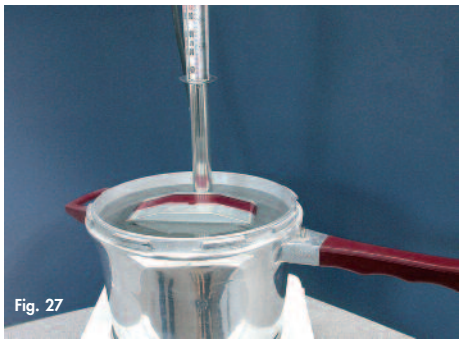
Fig. 27


Fig. 28

For **heat**-curing polymers we recommend: Placing in cold water and heating to 70° C. Allow to stand at 70° C for 40 to 60 minutes and then boil for 30 minutes. Then allow the flask to cool slowly in the water bath (Fig. 27). Remove the screws and carefully open the flask; this is best done using a plaster spatula. Loosen the plaster parts using a plastic mallet.


Fig. 29

The deflasked and polished prosthesis.
Here heat-curing Promulus® was processed in the C34 shade.
(Fig. 29).

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