GOLDTOUCH INC
12801 BEREA ROAD CLEVELAND, OHIO 44111
(800) 940-7874 (216) 941-7400 FAX (216) 941-7472
WWW.GOLDTOUCHINC.COM

Metalforming Instructions

Safety and preparation

Consult the Safety Data Sheet (SDS/MSDS) for each product before use. Wear appropriate protective equipment and work in a well-ventilated area.

Electrical connections

- **Copper, nickel, and gold baths require power.** Connect the positive **red (+) lead** from the power supply to the anode in the bath you are using. Move this connection to the appropriate anode as you proceed through the steps.
- Connect the negative **(–) lead** to the copper wire attached to your part.
- **The immersion tin bath is electroless.** It does not require an anode or electrical power.

1. Attach the wire and apply the conductive paint

Attach a copper wire approximately **8 inches long** to the part using hot glue or super glue. Make sure the attachment is secure and will not come loose during processing.

Spray or brush the conductive copper paint onto the part, following the directions for your product:

Product	Application	Drying time
Metalform-L	Apply 3 light, smooth coats.	Allow 1 hour to dry.
Metalform-A	Apply 2 light coats.	Allow 2–4 hours to dry, or longer if needed.

Make sure the paint is dry before proceeding.

2. Apply the immersion tin coating

1. Stir the immersion tin solution thoroughly.
2. Immerse the part and gently swirl it for approximately **30 seconds**, or until it has a reasonably uniform white coating.
3. Remove the part and rinse thoroughly.

Do not apply power during this step.

3. Copper plate the part

Initial plating: 30 minutes

1. Connect the positive **red (+) lead** to the copper anode.
2. Connect an alligator-clip lead to the negative **(–) terminal** on the power supply. Attach the clip to the copper wire on the part.
3. Set the rectifier to **0.5 volt**.
4. Immerse the part in the copper solution and plate for **30 minutes**.

Continue plating: 1 hour

1. After the first 30 minutes, turn on the air pump and place its hose in the copper bath.
2. Increase the voltage to **1 volt**.
3. Continue plating for **1 hour**.

Check and adjust

Check that copper is depositing on the part. If copper is depositing but remains dull, increase the voltage by **0.2 volt** and check the part at **15-minute intervals** until the copper becomes bright and shiny.

When the copper finish is bright and shiny, remove the part and rinse it in the **copper rinse tank**.

Total copper-plating time is usually 3–4 hours. Do not rush the process. Increasing the power too quickly can cause heavy copper buildup along the edges.

Heat the next baths while copper plating

During copper plating, heat both the **nickel and gold solutions to 140°F**. These solutions take time to warm up, so begin heating them before the copper-plating stage is complete.

4. Nickel plate the part

1. Move the positive **red (+) lead** to the nickel anode.
2. Set the rectifier to **1–3 volts**. Beginners should start at the lower end of this range.
3. Immerse the part in the nickel-plating bath.

4. After **5 minutes**, check the finish. Continue checking until the part has a bright, uniform nickel-white appearance.
5. Remove the part and rinse thoroughly.

5. Gold plate the part

1. Move the positive **red (+) lead** to the gold anode.
2. Set the rectifier to approximately **2 volts**.
3. Immerse the part in the gold-plating bath and gently swirl it for **10–15 seconds**.
4. Remove the part and check the color.
5. Repeat until the desired color is achieved, then rinse thoroughly.

Adjustments and troubleshooting

The voltages listed above are typical working values and may require adjustment.

- **If the finish shows signs of burning:** Reduce the voltage slightly.
- **If plating is slow or does not occur:** Check that all electrical connections are clean and secure, then increase the voltage slightly if needed.
- **If copper builds up heavily along the edges:** Slow down the process rather than increasing the power to speed it up.

Metalforming takes practice and patience. Allow the copper to deposit at its natural rate.