

Technics HUMMER Jr.

Plating Specimen with Gold Deposition

Notes on System Limitation and Safety:

No isolation valve between glass chamber and mechanical pump

No cooling loop for the gold target

Do not switch from PLATE to CLEAN or to PLASMA position when High Voltage ON

Do not over tighten Argon Process Gas Valve or else the valve will be damaged

Load sample, make sure viton ring gaskets are properly seated

Check the system for initial settings:

- *Argon Process Gas Valve*: Closed (fully CW)
- *N₂ Vent Valve*: Closed (down position)
- *Mode Switch*: PLATE position.
- *Power Switch*: OFF
- *Hi Voltage Switch*: OFF
- *Hi Voltage Control knob*: 0 (fully CCW)
- *Timer Switch*: MANUAL

Check pump oil level. Turn on Mechanical Pump to establish base vacuum in the glass chamber.

Convectron gauge reads roughly 20 mT within 2 minutes

Adjust *Argon Process Gas Valve* and bring to 40 mT.

Turn the main *Power Switch* ON.

Push *Test Button*, and Current meter should read approximately 2 mA.

Turn *Hi Voltage Switch* ON. Slowly adjust slowly *Hi Voltage Control knob* until plasma is ignited (from 3 to 10 level based on user's preference (how thick and how fast the gold film deposited on sample should be). Watch the Current meter range: 5 to 15 mA. Turn off the *Hi Voltage Switch* immediately if the current reading is too high

Plate time is 1 to 2 minutes for thin coat. The timer can be set in minutes (from 1 to 14 minutes) by flipping the *Timer Switch* to AUTO. Do not have plasma at high current for extended period, the gold target may be melted due to overheating

Typical gold plating conditions:

Pressure	40-80 mT
Current	10 mA
Voltage Control Knob	9
Plating time	2 minutes

Reduce *Hi Voltage Control knob* to zero

Turn off *Hi Voltage Switch*, and then the main *Power Switch*

Close *Argon Process Gas Valve*

Turn off the pump and immediately vent the system to prevent specimen oil mist contamination by pulling *N₂ Vent Valve* to up position. Wait until the Convectron gauge reads 760 Torr, then remove sample

Check to make sure the main power switch off, and *Argon Process Gas Valve* and *N₂ Vent Valve* are closed

Please report problem to

Quinn Leonard x2420 (office) or 657-0165 (pager)

John Wallace 877-2426 (office) or 657-0159 (pager)

Anhong Ho 877-2421 (office) or 657-0147 (pager)