Recommendations for Brush Plating

The plating voltage and time suggested below are a starting point based off our experience with the solution and we recommend using this as a starting point for your project. We suggest starting at the lower voltage and working your way up. Starting at too high of a voltage can result in burning or damaging your piece.

The recommended voltage and plating time can significantly differ depending on what the type of metal you are plating onto, the amount of solution carried in your sleeve, and the amount of pressure applied. Less pressure is always better.

Pre-Treatment Solutions	Anode Required	Brush Voltage	Time	Temperature	Notes:
Electro Cleaner	Stainless Steel	5 - 7 Volts	15 - 30 Seconds	Room	Repeat until surface wets out
Surface Activator	Stainless Steel	6 Volts	15 - 30 Seconds	Room	check for wet-out after activation
Wood's Nickel Strike	Pure Nickel Anode	5 - 7 Volts	20 - 30 Seconds	Room	check for wet-out after strike
Chrome Stipper	Stainless Steel	6 - 8 Volts	As Required	Room	Check for wet-out after stripping
Trival	Platinum Plated Titanium	5 - 7 Volts	10 - 20 Seconds	Room	Inspect for coverage after strike
Copper Strike	Stainless Steel or Copper	2 - 4 Volts	10 - 15 Seconds	Room	Inspect for coverage after strike

Plating Solutions	Anode Required	Brush Voltage	Time	Temperature
24K Brush Gold	Stainless Steel	3 to 4 Volts	30 seconds/ in^2 = ~ 20 µ"	Room
Pen Gold	Stainless Steel	3 - 5 Volts	30 seconds/cm^2 = ~ 80 µ"	Room
Pure Gold	Platinum Plated Titanium	2 - 4 Volts	30 seconds/ in^2 = ~ 40 µ"	Room
Rose Gold - Brush	Stainless Steel	3 - 5 Volts		Room
Rhodium	Graphite or Platinum Plated Titanium	3 - 5 Volts	30 - 60 Seconds/in^2 *	Room
Palladium	Graphite or Platinum Plated Titanium	1.5 - 2 volts	30 - 60 Seconds/in^2 *	Room
Silver NC	Stainless Steel	3 - 5 Volts	30 - 45 Seconds/in^2 *	Room
Bright Nickel	Pure Nickel Anode	3 - 4 Volts	30 - 60 Seconds/in^2 *	Room
Bright Acid Copper	Pure Copper or stainless steel	1 - 3 Volts	2 - 4 Minutes *	Room

* Produces a normal decorative deposit

Recommendations for BATH PLATING with 1 liter setups,
such as the Jewel Master, FreeStyle or Single Auxiliary kits.

The plating voltage and time suggested below are a starting point based off our experience with the solution and we recommende using this as a starting point for your project. We suggest starting at the lower voltage and working your way up. Starting at too high of a voltage can result in burning or damaging your piece.

The recommended voltage and plating time can significantly differ depending on what the type of metal you are plating onto and how much surface area is submerged in the beaker.

Pre- Treatment Solutions	Anode Required	Bath Voltage	Time	Temperature	Notes:
Electro-Cleaner	Stainless Steel	5 - 7 Volts	15 - 30 Seconds	120°F - 140°F	Repeat until surface wets out
Chrome Stipper	Stainless Steel	N/A	As Required	Room	
Surface Activator	Stainless Steel or Graphite	6 Volts	15 - 30 Seconds	Room	check for wet-out after activation
TriVal - acid gold strike	Platinum Plated Titanium or Graphite	5 - 7 Volts	10 - 20 Seconds	Room	Inspect for coverage after activation
Wood's Nickel Strike	Pure Nickel Anode	5 - 7 Volts	20 - 30 Seconds	Room	Inspect for coverage after strike
Copper Strike - alkaline	Stainless Steel or Copper	2 - 3 Volts	10 - 15 Seconds	120°F - 130°F	Inspect for coverage after strike

Plating Solutions	Anode Required	Bath Voltage *	Time	Temperature	Agitation **
24K, 18K, 14K - Bath	Stainless Steel or Graphite	2 - 4 Volts	2 - 4 Minutes	95°F - 105°F	Yes - for plating time over 1 minute
Pure Gold	Platinum Plated Titanium	1.5 - 2.0 Volts	~ Time to deposit one micron ~ 5 minutes	120°F - 150°F	Yes - for plating time over 1 minute
Rose Gold - Bath	Stainless Steel	4 - 6 Volts	30 - 60 Seconds	120°F - 130°F	NO
Eco - Rose Gold	Stainless Steel	3 - 4 Volts	~ Time to deposit one micron ~ 5 minutes	130°F - 140°F	Yes - for plating time over 1 minute
Rhodium	Platinum Plated Titanium	2 - 4 Volts	30 - 60 Seconds	Room	NO
Palladium	Platinum Plated Titanium	2 Volts	30 - 60 Seconds	125°F	NO
Silver NC	Stainless Steel	1 - 3 Volts	1 - 2 Minutes	Room	Yes
Bright Nickel	Pure Nickel Anode	2 - 3 Volts	1 - 2 Minutes	110°F - 130°F	Yes - for plating time over 1 minute
Bright Acid Copper	Pure Copper w/Air Aggitation	1 Volt	2 - 4 Minutes	Room	Yes - for plating time over 1 minute

* This is the voltage after the work is in the solution

** Agitation can be achieved by hand movement of the work or by air agitation

Recommendations for BATH PLATING with a 5000 mL Setup
(Such as the ProLab cm Series)

The plating voltage and time suggested below are a starting point based off our experience with the solution, and we recommend using this as a starting point for your project. We suggest starting at the lower voltage and working your way up. Starting at too high of a voltage can result in burning or damaging your piece.

The recommended voltage and plating time can significantly differ depending on what the type of metal you are plating onto and how much surface area is submerged in the beaker.

Pre- Treatment Solutions	Anode Required	Bath Voltage	Time	Temperature	Notes:
Electro Cleaner	Stainless Steel	5 Volts	15 - 30 Seconds	120°F - 140°F	Repeat until surface wets out
Chrome Stipper	Stainless Steel	3 - 4 Volts	As Required	Room	
Surface Activator	Stainless Steel or Graphite	5 Volts	15 - 30 Seconds	Room	check for wet-out after activation
TriVal acid gold strike	Platinum Plated Titanium or Graphite	5 Volts	10 - 20 Seconds	Room	Inspect for coverage after activation
Wood's Nickel Strike	Pure Nickel Anode	5 Volts	20 - 30 Seconds	Room	Inspect for coverage after strike
Copper Strike	Stainless Steel or Copper	0.8 Volts	15 - 30 Seconds	130°F	Inspect for coverage after strike

Plating Solutions	Anode Required	Bath Voltage *	Time	Temperature	Agitation **
24K, 18K, 24K - Bath	Platinum Plated Titanium or Graphite	2 - 3 Volts	2+ Minutes	95 - 105°F	Yes
Pure Gold	Platinum Plated Titanium or Graphite	1.5 Volts	Time to deposit one micron ~ 5 minutes	150°F	Yes
Rose Gold - Bath	Stainless Steel	4 - 6 Volts	1 -2 minutes	130°F	Yes
Eco - Rose Gold	Platinum Plated Titanium or Graphite	3 - 4 Volts	30 - 40 Seconds	130°F	Yes
Rhodium	Platinum Plated Titanium or Graphite	2 - 3 Volts	30 - 60 Seconds	Room	Yes
Palladium	Platinum Plated Titanium or Graphite	2 Volts	30 - 60 Seconds	120 °F	Yes
Silver NC	Stainless Steel	1 - 3 Volts	1 - 2 Minutes	Room	Yes
Bright Nickel	Pure Nickel Anode	2.5 Volts	1 - 2 Minutes	130°F	Yes
Bright Acid Copper	Pure Copper w/Air Aggitation	1 Volt	2 - 4 Minutes	Room	Yes

* This is the voltage setting **prior to** the work going into the solution

** Agitation can be achieved by hand movement of the work or by air agitation

Required Solution Steps by Metal Type

Pre-Treatment Solutions Required to Activate Surface of Metal *				
Metals	**Step 1**	**Step 2**	**Step 3**	**Step 4**
Stainless Steel	Electro-cleaner	Wood's Nickel Strike or TriVal Gold Strike	Plating Solution	N/A
Carbon Steel /Mild Steel	Electro-cleaner	Copper Strike	Bright Nickel	Plating Solution
Chrome	Chrome Stripper in proper mode	Surface Activator	Plating Solution	N/A
Copper, Brass, Bronze, Nickel, & Silver	Electro-cleaner	Surface Activator	Plating Solution	N/A
Solder	Electro-cleaner	Copper Strike	Bright Nickel	Plating Solution
PVD	Very specific procedures depending on function - call or email for details			
Titanium	Can Not be plated onto using our products			
Zinc plated steel	Strip Zinc	Copper Strike	Bright Nickel	Plating Solution
Solid Zinc	Electro-cleaner	Copper Strike	Bright Nickel	Plating Solution
Aluminum	Can not perform at an amateur level. Please seek a professional plating company to apply nickel onto Aluminum for proper adhesion. Once nickel is applied correctly, then follow pre-treatment recommendations			

* This assumes all polishing and prefinishing has been completed and the item has been carefully cleaned to remove any polishing compound.

Metals requiring diffusion barriers prior to plating	
Metal Type	**Barrier layer**
Copper	Palladium/ Nickel
Brass	Palladium/ Nickel
Silver	Palladium/ Nickel
Cabon Steel	Copper strike then Nickel or Palladium

For more information about diffusion barriers see our page :
" Is a diffusion barrier needed?"
This can be found under the tech support tab.