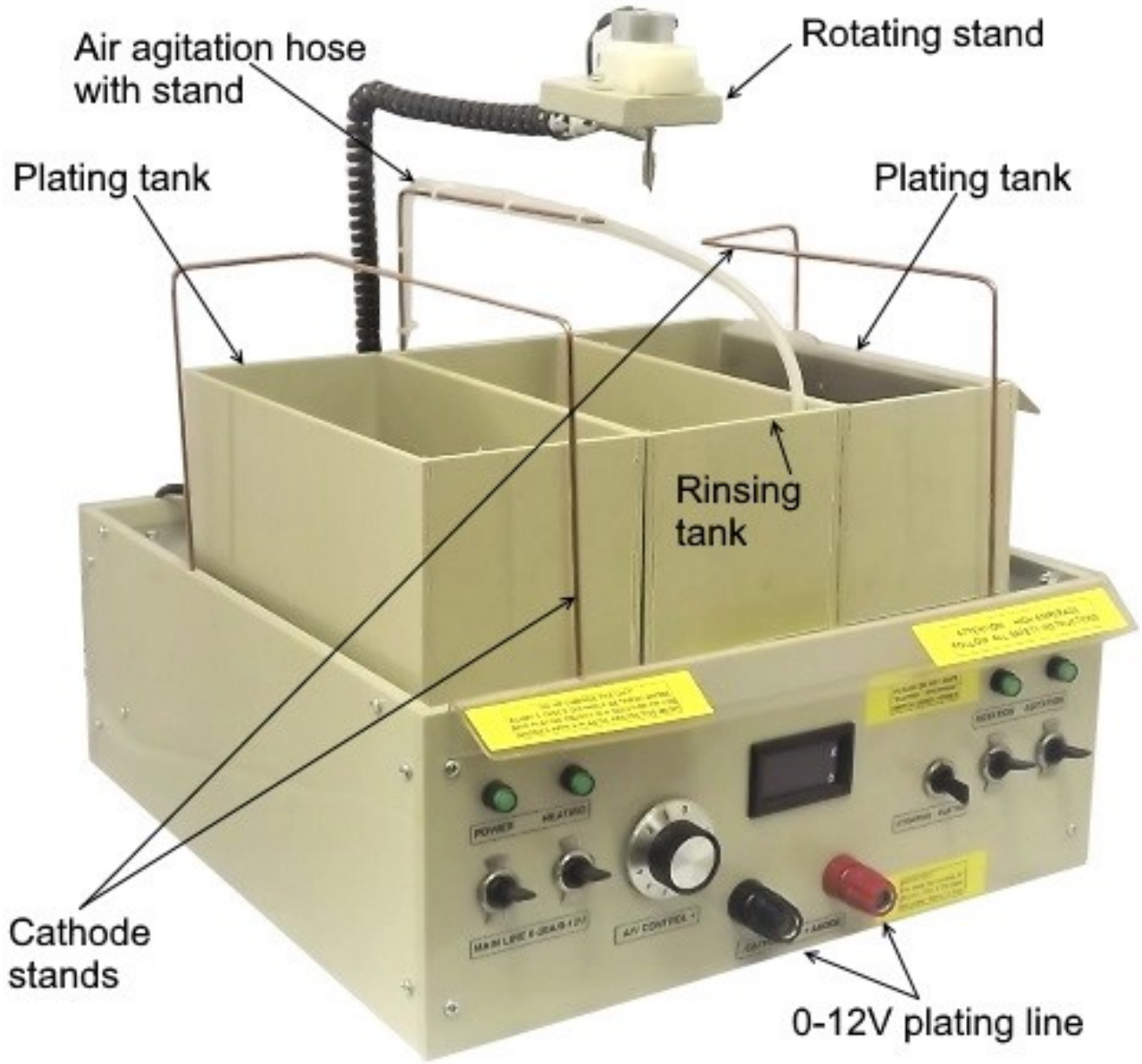
USER MANUAL ON PROFESSIONAL ELECTROCHEMICAL STATION EPS-30A

PRODUCT INTRODUCTION:

This electrochemical station is a professional, high performance plating/forming equipment designed to plate, form, strip, clean and polish multiple items at a time using electrochemical methods. The station incorporates principles of modern design, performance and convenience of work and is entirely suitable for any type of electrochemical works with both: conductive (metals) and non-conductive (glass, plastic, wood) materials for example for copper, nickel, zinc, yellow passivate, chrome, silver, gold, rhodium and other plating/forming processes. Can be used also for a brash plating process as well. All these processes are widely used in many industries such as electronics, machinery, decorating, jewellery, arts, by watch-makers and restorers and are very profitable. For getting high quality of coating layer this station has all five professional options: smooth linear adjustable currency/voltage option, stripping, heating, air agitation system and a cathode rotation (CRS) stand + three PP plastic welded tanks, four LED indicators and two-lines digital ampere/voltmeter for your convenience + full one-year manufacturer warranty and after-selling services include a free link to an electroplating course for beginners on similar station.



TECHNICAL SPECIFICATION:

Model	EPS-30A
Brand	Technical Supermarket
Input	100 VAC – 250 VAC
Output	1.3V -12V DC
Effective voltage under load	5V-12V DC
Effective amperage (DC) continuously	0A - 20A
Pick currency	30A
Plating lines	1
V/A adjusting option (10-turns potentiometer)	Yes
Air agitation system	Yes
Heating option	Yes
Glass heater (Watt)	50
Internal air pump	1 x 72 L/Hour
CRS (Cathode Rotating Stand)	Yes
Estimated CRS speed (RPM)	5
CRS's currency range	0A-10A
Cut-off overload digital system	Yes
Stripping option (plating-stripping)	Yes
Power, Heating, Agitation & Rotation LEDs	Yes
PP welded tank (190W x 90D x 90H mm)	3
Useful tank's volume (L)	1
Dimensions of station (mm)	315W x 335D x 280H
Weight of station (kg)	4.7
Made in	UK

Delivery specification:

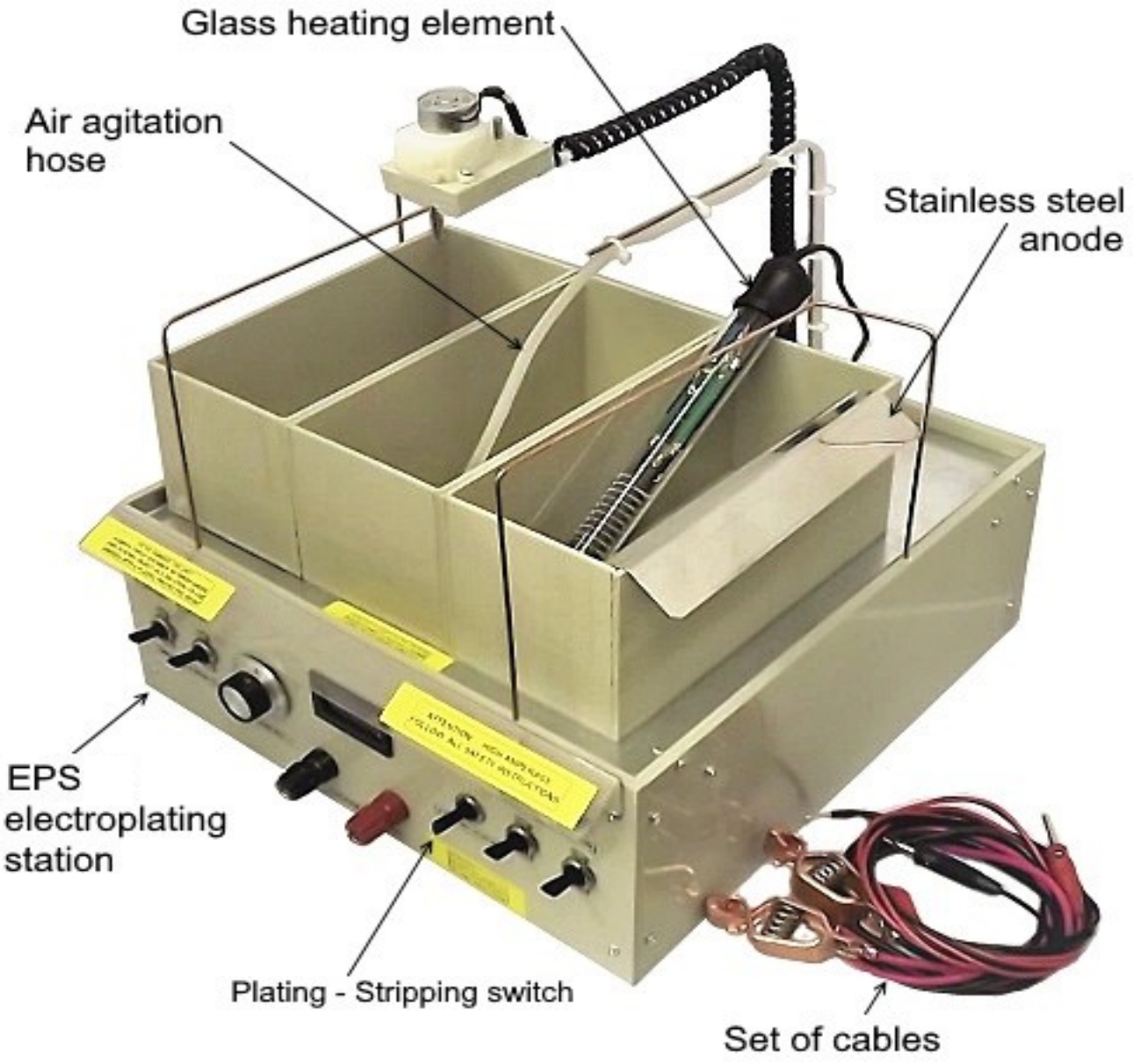
- This EPS-30A station 1
- Set of two cables for plating line 1
- Set of two cables for CRS/Brush 1
- Polypropylene welded plastic tank 3
- Stainless steel 312 anode (for cleaning, gold and silver plating processes 1
- Glass heating element (50 watt) 1
- Cathode Rotating Stand 1
- Downloadable user manual & electroplating course for beginners 1
- One year manufacturer warranty and after-selling services 1

INFORMATION ABOUT AN ELECTROPLATING PROCESS - HOW IT WORKS:

Processes of electroplating is defined as covering any electricity conducting material with an adherent and durable film of metal. This is achieved by placing an object in a tank containing a solution of a specific metal in liquid form and then performing an electrolytic action with the purpose of covering the object with the metal film. If the object you wish to plate is conductive then it can be plated directly.

This electrochemical station uses natural conductivity of the material to complete the electrolytic action that allows the plating process to work. If, however, your object is non-conductive (i.e. glass, plastic, wood etc) the object must first be painted with suitable conductive paint such as: graphite, copper or silver so that the electroplating process can work.

Once the cathode and the anode are submersed in the tank and covered by the solution and the station is turned on, an electric current will flow through the solution, which will cause the formation of an electric circuit and initiate the movement of the metal ions in the solution to transfer to the cathode. This will result in the coating of the cathode. At the same time, an equal amount of the same metal is discharged from the anode into the solution.



STARTING:

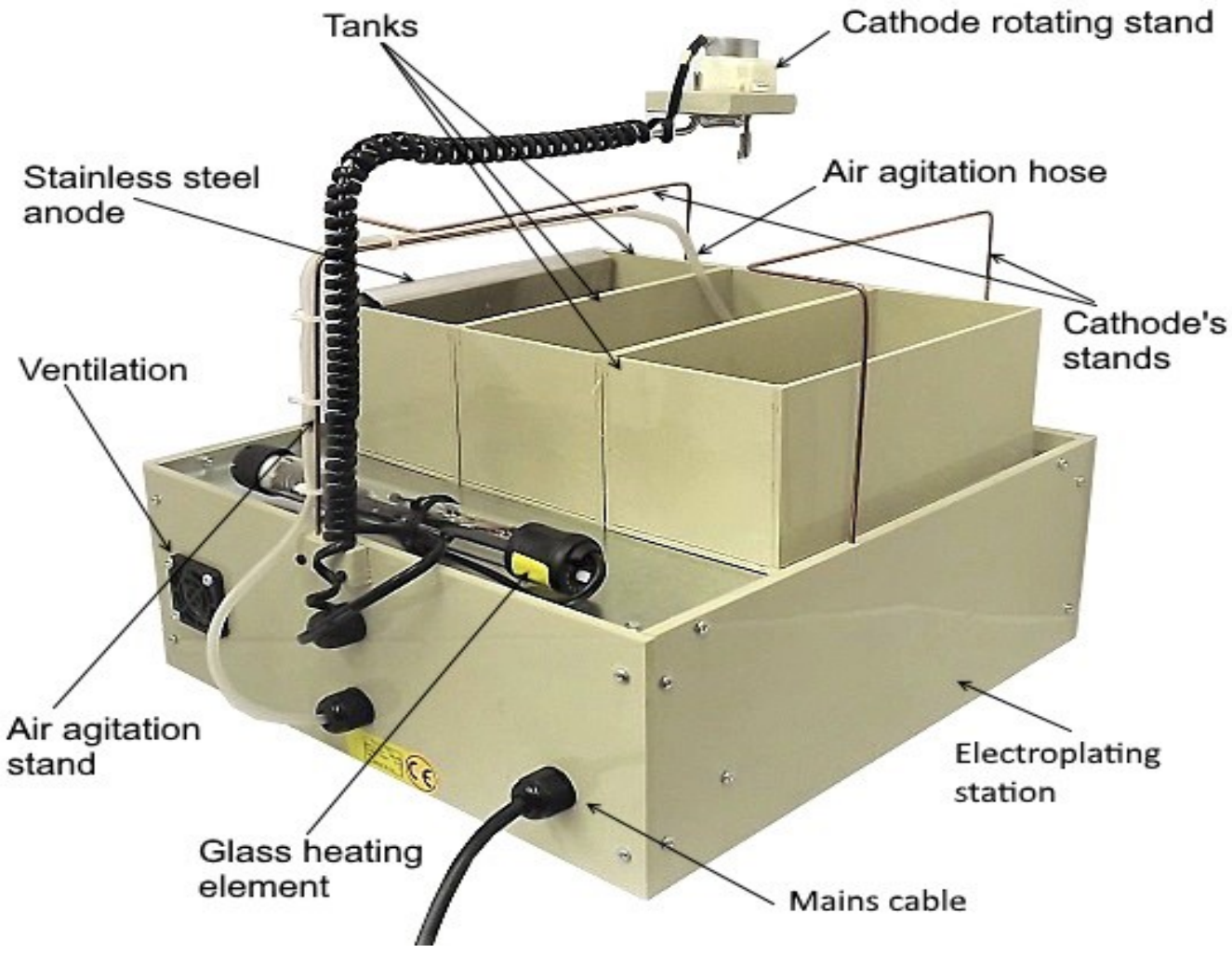
Switch the station “On” by flipping the “Power” switch down. The digital display on the front panel will light.

Place glass heating element into plating solution in tank and switch “On” the “Heating” option on front panel. If the glass heating element is in correct position in solution it is safe to leave it “On” throughout the all working day and it will keep the plating solutions at an optimal temperature all the time. You can slight regulate required temperatures by a small plastic pin on the top of the heating element. Please never touch the glass heating element by glass and remember that depending of your room temperature the initiated heating process can takes up to one hour to get your solution hot enough in a tank.

NOTE: this heating element is designed for KEEPING solution WARM — not for HEATING it UP so, the solution will need to be heating up to about 50-60 C BEFORE filling the tank. It also will helps you for properly stirring plating chemicals with some distilled water when required.

Now turn the potentiometer (voltage control) clockwise until the correct voltage for required process is shown on the digital display. The required voltage for your process can be found on the data sheets for the solution, on internet or by previous tests. The required current can be adjustable by changing voltage or by changing distance between an anode and cathode in tank.

If required, switch “On” the “Agitation” system by placing the end of the PVC hose in the tank with plating solution. This hose has micro-holes on the end for forming small bubbles in plating tank. These bubbles (agitation process) will help you save both, your chemicals and your time during the plating process.



Now you may start any electro cleaning, plating, stripping or forming process by you choose. For this change the Stripping-Plating switch on front panel to “Plating” (for electroplating, electroforming and cleaning processes) position or to a “Stripping” position for a stripping process. This process (stripping) is widely used to remove all residues or unwanted layers from a previously plated object.

Please make sure that all the plating objects are fully immersed in the solution and that they have good contact with the CRS hook or with the left and/or right cathode’s rod/s.

On this station is no need to reverse the polarity of the cables as stated on the data sheets when using the stripping or plating options as the station does this for you. Simply turn the “Plating-Stripping” switch on front panel to “Stripping” or “Plating” position and the required process will begin. Please never change position of this switch under voltage and never use this option with amperage higher then 10 A.

Please use the left and right cathode rods for connecting to them plating objects over their tanks.

Please use a Cathode Rotating Stand’s (CRS) hook for connecting to him by a piece of copper of aluminium wire a plating object for rotating it in solution opposite anode/s for better and equal coating layer. This is very important option for processes, where uniform coating layer is critical. Please NOTE that this option is available only for single plating objects and with current below 10 A DC.

With this station you can use also other size/type plastic or glass, or stainless steel tanks. Just place them around the station and connect your plating objects and anodes by cables to the internal station’s rectifier by red(+) and black(-) terminals on front panel. Additional cables can be supplied by your trader on request.

BRUSHES AND PENS:

This station has possibility to work with brush/pen plating processes as well. For this just connect your brush/pen by supplied red cable to its electrical line (red terminal on front panel) and connect black cable to black terminal and to a plating object. Note that the anode (brush/pen) is always connected to the “+” (red, positive) terminal and the cathode (plating object) is always connected to the “–“(black, negative) terminal on front panel of the station. That’s it.

FEW SAMPLES PLATED ON THIS STATION BY OUR CUSTOMERS:

IMPORTANT TIPS FOR BEGINNERS:

Please ensure that the place where you intend to use your station is able to support the entire weight of the station (about 10 kg). It is best to make sure that a good source of rinsing water is located next to the station and good ventilation is accessible.

If you find cleaning, electroplating, electroforming or stripping processes challenging please feel free to contact us regarding an electroplating course for beginners conducted either on-line or in-person by your choice.

If the station that you receive looks slight different from the model you have seen before please do not worry. You can be assured that any changes that have been made are solely made with the purpose of improving quality, appearance and specifications of the plating station in accordance with our commitment to a continuous improvement process which is based on the feedback provided to us by our clients.

If in connection with a short-cut between your plating object/s and anode/s your station stop works please do not worry — it has an inbuilt cut-off overload secure system that will help you re-start your station again. For this just disconnect this station from its power supply and connect it again after 30 seconds. Please contact your trader is it not helps.

HEALTH AND SAFETY INSTRUCTIONS:

TAKE EXTRA CARE ON TWO MAIN HAZARDS: electrical injuries and poisoning by solutions and their gases.

To avoid electrical injuries, DO NOT touch any exposed leads of the station with unprotected hands. Always use rubber gloves. This will also protect your hands from the harmful effects of the solutions. It will also be necessary to provide a rubber mat to stand on in the operation area.

The chemicals which you will work with are hazardous: many of them are deadly poisons and their combinations often produce corrosive and poisonous gases. Some of them also may contains Cyanides.

Therefore, all general safety precautions should be undertaken when working with them including keeping all chemicals inaccessible to children, wearing eye protection, avoiding skin contact, wearing latex gloves and correct, avoiding inhalation, masks.

Ventilation of your work area must be your number one priority otherwise damaged health is probable to occur.

It is very important to understand that glass heating element cannot be used without solution or with incorrect solution’s level. Always check it before switching ON the heating element for avoiding damages of it and/or an electrical shock.

Keep this station and chemicals out of reach of children!

The appropriate rules of working with chemicals are provided by the supplier of each chemical in MSDS (Material Safety Data Sheet).

HIGH AMPERAGE! FOLLOW ALL SAFETY INSTRUCTIONS FOR WORK WITH ELECTRICITY

THANK YOU FOR YOUR PURCHASE