

BARREL PLATING MACHINE



Barrel plating is a process of electroplating large quantities of smaller parts at once. This method of plating is most common among people whose plating project specification is very complicated and where a project must follow a stringent guideline for testing or meet the standards which the industry has in place for metal plating.

There are many plating processes that you can handle the barrel plating machinery. Be it Nickel plating, palladium plating, silver plating, tin, zinc plating, copper plating, tin-zinc, electroless nickel-phosphorous, etc.

Many types of barrel plating machine exist today in the industry. There are large barrels, medium barrels, and low-efficiency barrel plating equipment to deliver enhanced deposit distribution for the application of high-tech conductive, corrosion resistance and bondable/solderable functionality.

In the two types, many people use horizontal barrels more often because these barrels can handle greater varieties and larger volumes of workloads. If you get the most massive horizontal barrel plating machine, it is up to 17 cf (cubic feet). Apart from the larges, other types of horizontal barrels like miniature and portable barrels are also available.

The second type of barrel plating machine which is the Oblique barrel is more open in design and has a lower tumbling action. When you want to handle smaller workloads, it is more advisable to use the oblique type of barrel plating machinery. There are many advantages to using barrel plating equipment for your electroplating project of metal parts. Amongst the so many advantages of barrel electroplating, perhaps the most noticeable advantage is the capacity to plate a high volume of parts at once. This capacity alone has other benefits like saving your time which you would have lost while plating the parts singly and the costs that you will have accumulated for the whole process. The other advantages of using barrel plating are:

1. Use of one vessel

If you want to handle the barrel plating process, you can do everything in just one vessel. Everything involved in the process of cleaning the parts, rinsing them, pickling, sealing, can all be carried out in that single vessel. This simplicity of operation reduces handling and also enhance your overall efficiency.

2. Variety processing

With the barrel plating machine, you can process different kinds of parts in one equipment. Since the common rule is that any part that can fit into the barrel, can pass through plating. You don't have to search for different plating equipment to process varieties of parts.

3. Uniform finish

In a barrel plating machine, the process results in cascading tumbling as the barrel rotate thereby creating a bipolar contact amongst all the parts in the barrel. With the occurrence of this action, there will be a uniform finish of every part in the barrel. This result from barrel plating is very different from what other plating methods like rack plating can realize.

4. Low Investment

If you are operating on a low budget, then barrel plating process is just what you must use for the electroplating project. It is not just you that will enjoy the low-cost of operation, and your customers will also benefit since you will reduce your plating services costs. Sometime, most of the projects that you handle through barrel plating may not require additional fixtures, agitation equipment or even part carriers. You can simply use the standard barrel plating equipment.

5. Not labor intensive

Barrel plating doesn't require many people to handle the processes. Everything occurs in one barrel plating equipment, therefore, there never any need for many people as rack plating.

6. Need for little space

It may not seem like something big till you attach a cost to a larger space. If you are using barrel plating equipment, you don't need additional space. You can set up the equipment in any little space you have and carry on with your project.

Barrel plating like other methods of electroplating also delivers the same result just that it handles jobs in large volumes at a time. The uses of barrel plating are to make the parts resistant to corrosion. It also adds finishes for engineering parts to prevent wear and tear. Finally, plating adds a dazzling shine to parts to make them more beautiful for decorative purposes.

Barrel Series

The body of the barrel is made of PP materials that are imported from German. It is already formed and doesn't require welding. It is firm and can carry heavy weight load. The components of the barrel contain PP fiber for added strength so that the yield resistance and temperature will increase.

There are PP bars and PP lining made with carbon steel for strength as well. There is also a T type copper plate that is high in conductivity and exterior materials that can resist alkaline and acid. Other parts of punching diameter, T type hole, and others make the barrel series very strong and efficient.

2. Beveling open-type barrel

This barrel is different from the others that have traditional structures. It is molded in two-side injection and made up of four pieces. It has high intensity, resistant to bump and no cleavage. It has 45-degree beveling design, net board concealment rabbet lock- type and also feature external welding.

3. Long-shaped barrel; this barrel is made for long plating screws. The plates can be adjusted based on the length of the screw and then conducted by a central axis.

4. Portable electroplating barrel/Portable barrel

These barrel series are your best option when you don't want to go for the full-size barrel. Many sizes of the Portable plating barrels help you to achieve better solution transfer and density when it involves plating varieties of precious metals, smaller loads or delicate parts. The complete assemblies involve drives and high capacity copper cathode contacts.

Portable barrels has the following specifications:

1. Fuse-Fab™ Construction
The barrels come in high-temperature premium grade polypropylene material and innovative Fuse-Fab™ body construction which assure users of durability and high-quality barrels. Fuse-Fab™ construction includes some sections which have plastic material using a control thermal process to create one uniform part.
2. Steel-Core™ Reinforcement
There is door handles, side and door ribs with Steel Core™ construction to ensure that there will not be parts loss or even warping while the cascading takes place to enhance the durability of the parts. The Steel technology in portable barrels provides strength that is superior to other barrels and makes them last longer as well.
3. Poly-Ripple Interior
The panels have some parallel grooves that cover the whole surface of the barrel interior. This part enhances material tumbling, increase the flow of the current to the heavy load, eliminate nesting, and ensures that there are faster draining, quicker drying, and little drag-out.
4. There are also the alloy clamps or barrel knobs which resists corrosion and keeps the door secure during the barrel plating process.
5. Separate hubs and self-lubricating gears are attached to the barrel with some alloy fasteners to maximize serviceability.
6. Sometimes, there are air-driven units or variable speed DC drives as the case may be.
7. There are integral motors and 110 VAC

5. Metal Electroplating barrel, Metal barrel.

The metal barrels come in superior materials, durable design and quality construction that can endure rugged use. These metal barrels are made from steel, Carpenter 20, stainless steel, or Monel for pickling, phosphating, cold black or hot oxidizing, burnishing, cleaning, and any other necessary operation. There are also the Power-Matic Door plating barrels that can automatically load or unload metals and there are also the standard barrels that have doors which you can operate manually.

These metal plating barrels has the following features:

1. Commercial size perforations
2. There are tumbling bars in the interior of the barrels
3. Their designs can carry tank bottom, tank rim, or accommodate the support of transfer hoist
4. Metal barrels also contain adapters for automatic hoist pick-up

5. They have optional polymer, stainless steel, epoxy-type coated superstructures that can resist any corrosive environment.
6. There is the availability of Up-rotation to increase drainage speed and also reduce drag-out
7. Presence of self-driven operation or Tank drive
8. Non-metallic bearings and Metal or Polypropylene gears options to provide longer lifespan while operating in highly corrosive environments or where there high temperature.
9. EZ-Change trunnions help to make component replacement simple thereby reducing the cost of maintenance.

6. Maxi Electroplating Barrels

These barrels are designed in such a way that they can equip most automatic and manual hoist/tank systems. There are options in sizes which you can choose to meet your productivity or project goals. If you want to install a Maxi barrel of large capacity in your system, you can do so and increase your output level.

Maxi barrels brings the parts closer to the barrel anodes to enhance faster plating and current densities. There are many advantages of using Maxi electroplating barrels like:

1. Greater capacity
2. High-temperature, premium grade polypropylene
3. Fuse-Fab fusion welded heads and panels
4. Steel-Core ribs
5. Clamp or sometimes knob style door
6. 3/32", 1/8", 5/32", or 1/4" perforations

Cylinder Options:

1. Custom: diameter, length, and panel thickness
2. Optional perforations: profile, diameter, pattern (ie. Higher open area, herringbone etc.)
3. Special: External girths, tumbling bars, partitions
4. Custom contacts: "hairpin", strip, disc, cup, center bar, chain
5. Door options: sectional, fully-automatic, slide-lock, swivel-lock.

Some of the superstructures feature Maxi barrel are:

1. Pick-up hook and heavy-duty frame that will not deflect when you load the barrel
2. Horn or Inverted-V "floating" tank contacts alongside angled Dura-Danglers 4/0 cable that has sleeves to promote adequate electric contact. Etc.

8. Acrylic Plating Barrel

This type of a barrel is made of acrylic materials and the body comes in net-type design. There are round sealing baffles that have press markings for enhancing the barrel's twist and swirl abilities and also avoid the remains of plating materials. For insulation and conduction, the acrylic barrel has a copper head that is triangular in shape. This copper head has a high rate of conduction, speedy deposition, large touching area and strong electrical adhesion. There is also the T type plate that can be molded and covered externally with plastic so that it can be speedy, resistant to corrosion and convenient when you want to assemble or disassemble the barrel.

Barrel Plating Process

The whole operation involves placing the little parts in the electroplating barrel constructed with polypropylene material. When you place these parts inside the barrel, there are center bars which conduct electrical current to make the barrel to rotate. As it rotates, all the parts in it will be cascading or tumbling. This movement will ensure that the coating application on the parts will be even and uniform. One thing you have to know about barrel plating is that there is always a huge amount of contact between all the parts in the barrel. Therefore, if your project is for engineering finishes or ornamental finishes, barrel plating is not the right choice for you.

Some of the parts that you can confidently run through the barrel plating process are nuts, washers, bolts, etc. Parts that can damage or deform quickly should not be plated with the barrel plating method. Also, if the parts you want to plate need to maintain the edges or those that can damage if they collide with metals, don't use barrel plating to avoid regrets as a result of parts damage.

Barrel Zinc Process

There are many metals for electroplating metal parts of which Zinc is part of them. Zinc can be used to electroplate any part whether finished or not finished. If you apply a zinc coating on any metal, be rest assured that the coating will prevent oxidation as it will form a demarcation between the metal and its surrounding environment. Also, the zinc layer on the metal part will:

1. Protect it from abrasion and wear
2. Make it resistant to corrosion
3. Improve its lubricity
4. Make it solderable
5. Enhance its adhesion to paint
6. Increase size of undersized metal parts
7. Improve the decorative quality of the parts
8. Make it non-toxic and biocompatible

Barrel zinc electroplating is very affordable when you compare it to zinc-nickel plating. The result to you is that you can save a lot of money by using barrel zinc electroplating. Therefore, when you have a huge project to execute on a tight budget, barrel zinc plating becomes the right option.

