

# Stainless Steel PVD Coating Machine Proposal

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Model no:- PT-3232  
Proposal No:-012026/01

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Dear sir

We are pleased to represent you as we are serving our service in field of Engineering & Technology. PVD Coating machines are future for the Coating on different metals & non- metals surfaces. Our company is always updated with the latest technology for vacuum coating technology, device specifications and application design.

Physical Vapor Depositor (PVD) Machine is mainly used for coating Stainless Steel Sheets, Pipes or any other decorative parts. By arcing the Titanium alloy a vapor deposition is made on the surface of particle.

This is PVD process is the world most advance coating process which can last its coating for more than 20 years and the only coating process which is environment pollution free process. This vacuum coating process (PVD) in stainless steel surface coated with wear-resisting, resistance to abrasion, high temperature resistant also can have different colors of density board of the membrane of the compounds.

PVD coating machine can process all kinds of colored stainless steel products, color bright beautiful appearance, all show richly luxurious, good resistance to wear and abrasion resistant, high temperature resistant, such as performance, can durable, guarantee the normal color 20 years;

Meanwhile, the technical process after the PVD stainless steel products, and fully keep the original surface, stainless steel, luster and strength, its physical, chemical, and mechanical properties or affect, which can be directly to conduct the follow-up processing, can effectively play stainless steel the green environmental protection metal all features. The coating type decorative coating (titanium nitride coating and carbonization of titanium coating, zirconium nitride film, titanium alloy film, chromium nitride coating etc.), a metal, reaction film, and colorful coating

- *Here are the Technical specifications of machine as follows. :-*

1. **Vacuum Chamber.**

vertical type vacuum chamber having diameter of 3200mm and length of 3200mm. Vacuum chamber is made of Stainless Steel 304 Grade. This particular grade is used as having stress free structure and sustainable for long life.

2. **Structure.**

Vertical side open door.

3. **Required Power for machine**

Total power of the machine Total power is about 425KW (three phase four wires+ ground wire) auxiliary equipment provided by the user.

4. **Auxiliary equipment provided by the user**

- a. Cold water supply 10-25°C (equip with one cooling-water machine of more than 30P) , flux 500L/min, pressure 0.15~0.25MPa.
- b. Compressed air, pressure 6~8kg. High pure gas, Ar, N2 ,etc. Decompress the gas to 0.01MPa before supplying.
- C. Three phase four wires 380V 50HZ

5. Coating time from coating to cleaning to coating to cooling (without loading & unloading time) need around 30min (empty chamber).

**Note: Time can be influenced by coating products material and coating color & thickness**

6. Movement mode of jig shelf Revolution& rotation movement (customized by customers' requirements).

7. Coating material target size Target size Outer diameter  $\Phi$ 95-100 mm× H45 mm.

- *PVD Coating machine relies of its main 4 types of pumps are as follows:-*

1) Rough pump:

Name : rotary type of vane vacuum pump

Manufacturer: important

- Pumping rate: 70L/s Motor Power : 7.5kw Number : 6 sets Features :



1. It can start from the atmospheric pressure directly.

2. It can be use as low vacuum pump separately, also used as backing pump by combined with other high vacuum pump.

3. The series are widely used in the metallurgy, chemistry and light industry, pharmacy, electricity and semi-conductor industry

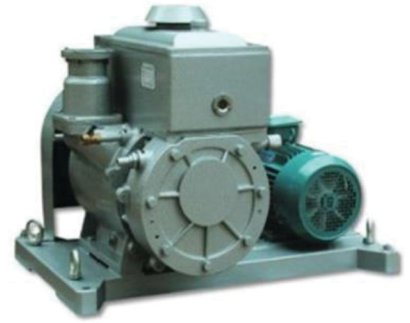
This pump is not suitable for pumping the gas as following: poisonous, explosive, high oxide, easy to reactive with pump oil, corroding the black metal. And it can't be used as compressor and transfer pump.

## 2) Holding vacuum pump

Name: rotary type of vane vacuum pump The origin factory : important

Pumping rate : 30 L/S Motor power : 3 kw

Number: 2 sets



## 3) Booster pump Name : RTO.1200 roots pump

Manufacturer: important

Pumping rate : 1200L/s

Motor power : 7.5kw

Number: 2 sets

Features : S version RTO- series inner-cooling mode over loading protecting roots pump vacuum.

The pump contains four core techniques :

1 End cover water direct-cooling technique

2 Exterior type pre-exhaust technique

3 Air-cooling strengthen technique

4 Dynamic seal packet re-useable technique.



## 4) Diffusion pump

Name : PTD-1200 oil diffusion pump

Manufacturer: important

Pump rate : L/s

Motor power : kw

Number : 2 sets



**Characteristics :**

- 1、 The pump has no mechanical motion parts, and has no restriction of friction, lubrication, vibration, etc.  
It can be made to the pump with high pump power . It has reliable work and long life. Provided the construction materials of the pump appropriate, it is useful for excluding the corrosion gas, impurity gas and steam.
- 2、 Simple structure, light weight, small occupation area.
- 3、 The working vapor pressure is Pa, and the general metallurgy, chemistry and light industry, pharmacy industry.

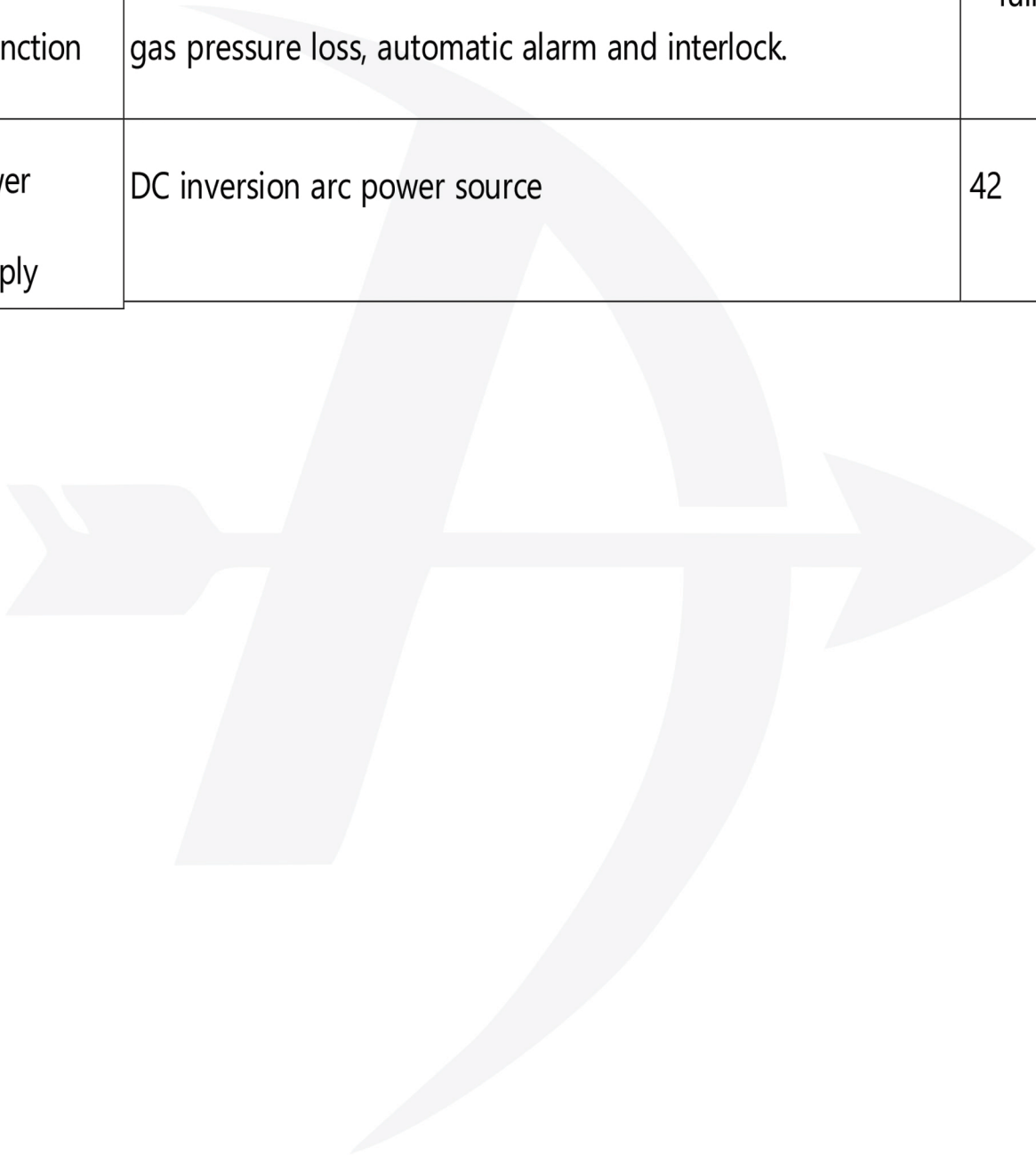
**I. Main configuration:**

No.	Name	Specification	Qty.	Unit
1	Vacuum System	2X-70B mechanical pump	8	sets
		2X-30 holding pump	2	sets
		RTO.1200 roots pump	2	sets
		KT-1000 diffusion pump	2	sets
2	Vacuum Chamber	Chamber size:Φ3200mm*H3200mm, inner stainless steel liner 0.8mm. Spray painting treatment on the surface, rotation shelf 1 set, one set of heater, 2 observation windows; The vacuum chamber has 42 arc target flanges, two sets of stainless steel shields in the inner surface for further cleaning.	full	set
3	Pipeline	The material of the pipeline is stainless steel	full	set
4	Grating valve	Adjustable and keeping pumping speed, manual adjusts and open angel.	full	set

5	Heating System	<p>Use 17 pieces infrared heat single pipes with power 8KW, The total power is 136KW. The left of the right each has a thermocouple, U type heat pipeline.(according to final design) Heating from normal temperature to above 300 centi-degree.</p>	full	set
6	Workpiece rotation system	<p>Turntable+trolley system:</p> <ul style="list-style-type: none"> <li>• 2 sets of planetary rotation turntables</li> <li>• 1 movable trolley</li> <li>• 2 sets of platforms</li> <li>• Track system</li> <li>• The entire rotation table can be pulled out for easier loading and unloading</li> </ul> <p>Motor &amp; Speed:</p> <ul style="list-style-type: none"> <li>• 0.75kW motor</li> <li>• Speed range: 3-6 RPM</li> <li>• Frequency control for precise adjustments</li> </ul> <p>Rotation Stands:</p> <ul style="list-style-type: none"> <li>• 2 rotation stands for stainless steel furniture coating</li> </ul>	1	set
7	Measurement controller	<p>Equipped with a ZDF-X (LED) composite pressure measurement instrument, which automatically transitions from low vacuum to high vacuum. It features an LED display for real-time pressure monitoring, ensuring precise control and efficient operation.</p>	full	set
8	Coating System	<p>Evaporation source: 42pcs multi-arc evaporation sources Target material: pre-installed titanium targets, <math>\varnothing</math> 95mm x 45mm x 1.5mm, with copper base Cooling: indirect water cooling system</p> <p>Magnet: cylindrical magnet added for enhanced performance Electromagnetic valves: 4 sets, (1000 sccm: 1 set,3000 sccm: 2 sets,5000 sccm: 1 set)</p>	42	sets

9	Gas quality flow gauge	Mixed gas tank: 1 set 1 electromagnetic stop valve and 1 gas mixing jar, to ensures precise gas delivery and stable mixing for optimized process performance	4	sets
10	Electric control system	<p>1)The main electric parts use the important brand. Manual/Automatic integrated control cabinet.</p> <p>2) Hardware system adopt touch screen with Japan Mitsubishi FX series programmable logic controller (PLC) and I/O boards</p> <p>3)The human-computer interface use 25 inch LCD touch screen.</p> <p>4)Operating system has flexible visual operation interface, which can be divided into manual interface, maintenance interface and automatic interface. Independent manual operating system, can be switched with the automatic system</p> <p>5)Real-time data acquisition and input to hard disk, so as to analyze and improve the process afterwards.</p> <p>6)Independent multi-channel cooling water flow digital embedded real-time monitoring system, water flow sensor detects the cooling water flow status of each sputtering target and other important components, alarms and records;</p> <p>7)Vacuum valve interlock protection and vacuum condition protection;</p> <p>8)Assemble emergency stop switch, once there is a major abnormal situation through the touch switch to stop the equipment, the switch is equipped with protective cover, to avoid misoperation;</p> <p>9) Language operation interface: English.</p>	full	set

11	Protective Function	The equipment has the function of hydraulic pressure loss, gas pressure loss, automatic alarm and interlock.	full	set
12	Power Supply	DC inversion arc power source	42	sets



## Price for machine is as follows:-

Sr no.	Specification	Qty	Unit Price
1.	PT-3232 3200mm (D) X 3200(H)	01 set	

- The Quoted prices are validating for 15 Days only.
- The Duty and freight will have considered at time of delivery of machine or parts at time of filing Bill of entry.
- All India government taxes will extra as applicable
- All civil and plumbing work are in buyer's scope.
- The Installation for machine will be provided by seller, buyer have to arrange all required equipment's like crane other required.
- Payments terms will Advance 50% and 50% at time of delivery.

### Installation and training:

The Seller will provide installation services when the machine arrives at the buyer's company. During this process, the Buyer is responsible for covering the visa charges, ticket charges, and providing accommodation for the engineer

### Warranty:

#### 1. Duration & Coverage

We provide a 1-year warranty starting from the date of lab testing acceptance sign-off. The warranty covers defects in materials and workmanship, but does not include accidents, human error, or improper use. 2

#### 2. Support During

Warranty: For minor issues, the seller will assist the buyer remotely without needing to visit the buyer's location. For major issues (such as machine failure), the seller will send an engineer to the buyer's location to resolve the problem. The buyer is responsible for the tickets, visa charges, and accommodation for the engineer.