

Stop worrying about pinholes and unevenness in the alloy



Vacuum Centrifugal Casting Machine TCP-5400

- melt up to 400g of PT
- mold of up to 89.1 x 110 mm
- Minimize pinholes and discoloration
- PT WG with palladium

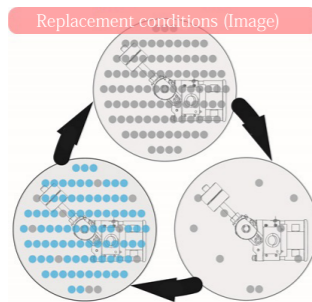


PT950
Ruthenium 2%
Weight :210.0g

Here is why people choose the TCP-5400

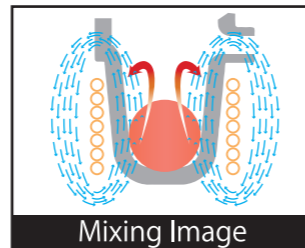
With its large capacity, the TCP-5400 can melt up to 400g of platinum in a mold of up to 89.1 x 110 mm. It has its customized pressure and rotation control programs, various types of sensors, and various operation modes (automatic, semi-automatic, and manual). With this, you can be assured of the highest quality of casting. Equipped with large-size, color touch panel for easy operation.

Minimize pinholes and discoloration through inert gas replacement



Capable of doing melting in various conditions such as regular atmosphere, vacuum, or replacement with inert gases. For alloys that can be easily oxidized, you can do atmosphere replacement up to three times. (With the first replacement, 90%, with the second replacement 99%, with the third replacement, 99.9% or higher)

Minimize unevenness and achieve efficient melting with the automatic-matching low-frequency oscillator



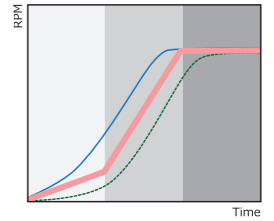
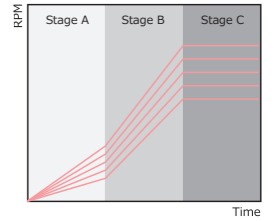
This high-spec oscillator can automatically adjust its frequency depending on the type and condition of the alloy, thus allowing for efficient melting in a short amount of time. The low frequency oscillator effectively mixes the alloy and floats it inside the crucible, melting it uniformly and minimizing damage and wear to the crucible.

Pressure control mechanism for minimizing pinholes and shrinkage / Customized rotation control for achieving steady, high quality

Through accurate control of pressure and rotation, pinholes and shrinkage are minimized, and highly-detailed casting becomes possible. Digital control enables you to have exactly repeatable casting conditions. You will be able to securely create high quality casting. Various settings can be chosen for all types of alloys and shapes of workpieces.

- Stage A: From start to basin : The melted alloy is poured from the crucible to the mold, and using our unique rotation program developed through years of experience, spillage is avoided and a smooth flow to the mold is accomplished. Through this smooth flow, unwanted intake of air is avoided, hence minimizing pinholes. For alloys that are difficult to cast, controlling the speed is essential. With the TCP-5400, you can set the ideal rotation speed for this.

- Stages B and C: From basin to mold: After the alloy has been poured from the crucible to the mold, the alloy is pulled into the most detailed portions of the mold through accurate control of pressure and centrifugal force, thus minimizing pinholes and shrinkage. When melting, the vacuum conditions can be used in the chamber to assist the smooth movement of the alloy from the crucible into the mold. After the alloy has filled in the mold, the vacuum chamber conditions are instantly returned to regular atmosphere, so that the casted alloy hardens quickly, thus minimizing pinholes and shrinkage. The maximum rotation speed is 500 rotations per minute. Until the alloy hardens, the centrifugal force continues, to reduce shrinkage of the alloy in the mold. The same centrifugal force is maintained, regardless of the weight of the mold and the alloy.



— TCP-5400 with any amount of alloy
— Other machines with 50g alloy
— Other machines with 100g alloy

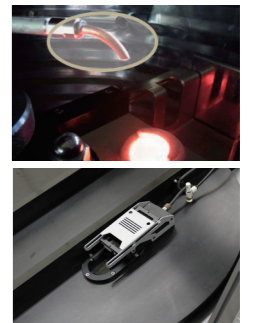
Radial thermometer and smoke removal / Automatic and manual operation

- The radial thermometer is capable of measuring temperatures between 750°C and 2000°C. This can handle the higher melting points of metals such as platinum and white gold. As the smoke from the melted alloy can interfere with temperature measurement, the gas from the nozzle scatters the smoke from the crucible, allowing for accurate measurement. You will not mistake the perfect timing for casting. (The optic sensor of the radial thermometer is set for platinum, but white gold is also an option.)

- Melting and pouring can be done in both automatic and manual modes.

- Automatic mode: Through the temperature detection of the radial thermometer and the automatic oscillation power adjustment, melting and pouring are done automatically.

- Manual mode: You can adjust the oscillator power by yourself while observing the melting condition. After that, at the right timing you can press the button to start casting. You can also switch from automatic to manual mode during operation.



Maximum alloy amount / Maximum mold size

- The maximum weight for platinum is 400g. There are two different size crucibles: PC5 (MAX : Platinum 400g) PC2 (MAX : Platinum 300g)

You can also order customized oscillators based on your needs.

- Maximum mold size: φ 89.1 x 110 mm. By combining parts, you can use molds of various sizes.

Molds of φ 76, 60 or heights of 90 mm can also be provided for an extra charge.

Color touch-panel

Equipped with an 8.4 inch TFT color touch panel. You can easily understand and operate this machine with its full-color, large-sized touch panel interface.

By being able to easily understand the casting conditions, you can better analyze the results of the casting.

Rotation radius / Arm / Motor

Enlarged rotation radius:

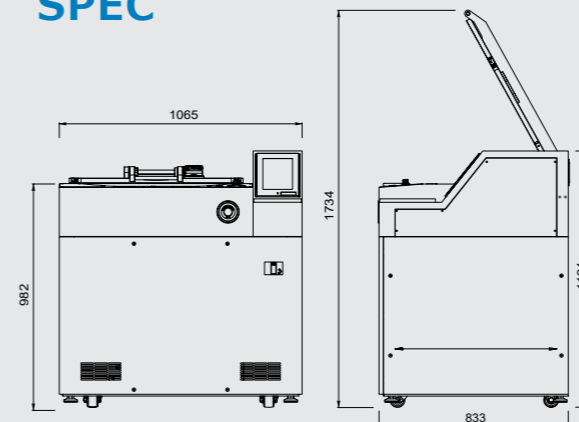
This allows for a high level of centrifugal force, better filling the mold.

Straight arm: We use a straight arm that is reliable and allows for repeatable settings for creating the same level of quality. This also minimizes spillage of melted alloy.

AC Motor: We use a inverter-controlled AC motor. Similar to a servo-motor, perfect control of the rotation is achieved, and the risk of breakage is reduced.



SPEC



Power	AC200V 3ph 50/60Hz 10.5kVA
Size	1070x850x1200 mm (WxDxH)
Weight	435kg
Oscillator	8kW(max)/7kW (max)
For use with	Pt,WG,YG,PG,SV,SUS,Cu
Thermometry	Radiation thermometer
Max volume	Pt:400g (PC-5) /Pt:300g (PC-2)
Mold sizes	φ89.1x110mm (Max)
Program	Semi-automatic/automatic Vacuum / Regular /Replacement
Temp control	Automatic PID or manual control (0-100%)
Other	Compressed air (0.5Mpa or higher) Cooling water (3.5L/min)

Inert gas