

Process guarantee method of high precision rotor dynamic balance

The basic purpose of each dynamic balance process is to transfer the balance accuracy results of dynamic balance to the machine running in real objects.

Balance accuracy grade g6.3 g2.5 selected in JB / t9101 standard

Its physical meaning: g6.3 -- 6.3mm/s vibration velocity

G2.5 -- 2.5mm/s vibration speed

For the integral rotor, the accuracy of operation is enough. The measurement accuracy of balancing machine is much higher than that of machining.

For rotors balanced with fixture mandrel

Corresponding operable machining accuracy

G6.3 corresponds to 0.02mm

G2.5 corresponds to 0.008mm

Machining accuracy of shaft hole: the accuracy grade of g6.3 can be achieved only when the error of taper and ovality is 0.02mm

The accuracy of g2.5 can be achieved only when the error of taper and ovality is 0.008mm

The radial runout of the balance mandrel should be less than 0.02mm

Under the condition of ensuring the concentricity, the mandrel can balance and remove its own unbalance value.

If the connection accuracy of universal joint is not enough, fixed phase position connection can be used. The connection error should be as small as possible (about 1g). stay

Only in this state can the unbalance value of the spindle be removed by balancing alone.

The drive of our balancer is inverter soft start, and the process mandrel adopts micro taper assembly.

The mandrel can work in the form of optical axis and driven by taper assembly friction force.

However, the impeller must be equipped with a keyway half key, because this half key affects the balance accuracy of the rotor about 1g.

If the machining accuracy of the balance mandrel is not high enough, the fixture balance method is used to correct the problem (the workpiece and the fixture are reversed by 180 degrees, and the measurement value is removed one by one)

Half).

The accuracy of both sides of type 919 rotor is less than 2G, and the precision of static balance is less than 0.5g. The hp16 electrical tester can be used to stop the machine

After that, it is convenient to detect the value of static balance.

For all fan rotors: the final process of dynamic balance must correct the final accuracy of static balance.

The final reference accuracy of fan balance is the calculation result when $a = C = 0$.

ABC solution mode is a process tool for operators.

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